Read Me First

Don't forget to seed!!!

Thank you for downloading my Torrent. I hope you find the files useful and they help with any small DIY job you have planned.

Besides DIY my other hobby is General Construction. If you wish more information about construction, check this out:

Here's How to Build Your Own Workshop, Woodshop,

Hobby Shop or Backyard Studio and Save a Bundle on

Construction Costs

Get 59 Great Workshop Designs, Complete Construction Drawings and Free DIY Building Lessons

CLICK HERE

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A solve-it-fast guide for home, car and more. Because--sometimes--duct tape just isn't enough.

The world is populated by two kinds of guys: the ones who know what to do when something goes bust, and the ones who are always asking the first guys for help. Here's your secret manual for staying on the right side of the divide. It's filled with experts' shameless shortcuts for dealing with everything from flooded basements to mysterious oil leaks to flat mountain bike tires. These down-and-dirty repairs won't all last a lifetime, but they can certainly save the day.

INVADING ARMY: Ants are having a feeding frenzy in your kitchen, and you don't want to use a toxic brew to defeat them.
THE QUICK FIX: "A 50/50 mix of peppermint oil and water will get rid of ants," says Amy Devers, co-host of the DIY Network's "DIY To The Rescue" show. "Fill a spray bottle, and spray wherever you see them coming out of hiding."

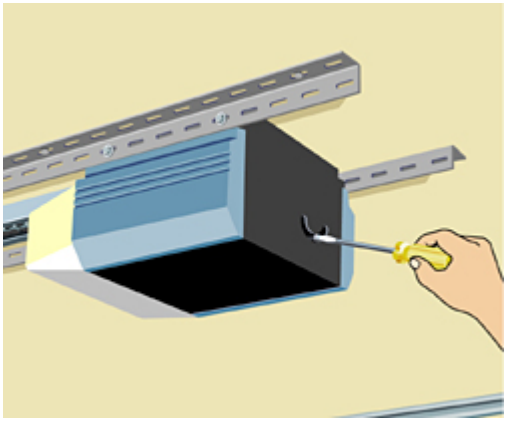
SPEAR FACTOR: A weed-ridden asparagus patch has you about ready to give up on your favorite crop.
THE QUICK FIX: Add salt. "Asparagus is the only vegetable that can withstand salt," says Penny

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Griggs, an organic farmer in Vermont. "Spreading salt around your plants will kill the weeds but leave your asparagus unharmed."

SPILLED JUICE: The battery in your laptop is losing its charge much faster than expected.
THE QUICK FIX: Wireless operations are a little-known drain on laptop batteries. "If you can disable your wireless networking and still get your work done, do it," says Andy Hooper, owner of Intelligent Systems, an IT security company. "Some wireless cards can eat up half of your laptop's power."

Photo by HP



FROZEN OUT: Cold weather has stiffened the mechanism of your garage door opener, causing it to lose power.
THE QUICK FIX: Most garage door openers made in the past 15 years have pressure adjustments for both raising and lowering. Check and adjust these settings seasonally to keep things running smoothly.

SCREW LOOSE: You're trying to replace a woodscrew, but the hole is stripped and the screw won't grab.
THE QUICK FIX: Insert two short lengths of thin, insulated wire in the hole before adding the screw. They'll allow the screw to bite.

TRAPPED BELOW: The water in the trap of your basement floor drain dried up-and now your cellar smells vaguely of nasty, nasty things.
THE QUICK FIX: Pour nontoxic plumbing antifreeze down the drain to fill the trap. You can use water in a pinch, but it evaporates faster than antifreeze, so you'll need to repeat the process more often.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

HOT WHEELS: The temperature gauge on your car is headed for the danger zone, but you've got no time (or place) to park and cool your jets.
THE QUICK FIX: Turn the heater on full blast (opening the windows so you don't fry). The extra volume of the heater core and its hoses, as well as the airflow of the heater fan blowing across the core, may dissipate enough heat to get you home--or to the garage--without a meltdown.

Illustration by David J. Pullman

ICE RAGE: Your car doors freeze shut in cold weather.
THE QUICK FIX: "Spray the weatherstripping around the door frames with silicone," advises Al Toutant, a technician at Heath Auto Service in Greenwood, Maine, where they know a thing or two about cold weather. "It keeps moisture from collecting and freezing your doors shut in the winter, and it keeps it from drying out and cracking in the summer."

POWER INTERRUPTION: You need to remove your car's battery, but don't want to lose the settings on the car's radio, alarm, GPS and computer.
THE QUICK FIX: A 9-volt battery adapter can plug into your cigarette lighter to keep those chips powered up. Result: No more auto amnesia.

Illustration by George Retseck

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Illustration by George Retseck

DAMPNESS AT NOON: Your clothes dryer seems to have lost its zip.
THE QUICK FIX: Clear the vent duct by removing the vent pipe and pulling out any accumulated debris from the pipe and duct. It's a 3-minute fix that can save you a $75 visit from a technician.

UNPLANNED POOL: A big rain has flooded your basement. And, since it knocked out the power too, your usually reliable sump pump won't pump.
THE QUICK FIX: If you live on a slope, try making a siphon. First, fill a garden hose with water from the outside spigot. Seal one end with your thumb and have a friend seal the other. Place one end through the cellar window and into the standing water. Then, have your friend carry the other end as far downhill as possible (the outlet has to be below the intake). Release your thumbs and let gravity do the rest.

SHAGGY LAWN: You need to cut the grass before the in-laws show up but your mower won't start.
THE QUICK FIX: Before you give up and take it to the repair shop, try this. First, take out the spark plug and empty the gas. Then, get a new plug, add some fresh gas to the tank and, more often than not, the mower will start right up.

CRACKED TEETH: Someone--not you, surely--has broken a key off in a door lock, which is now jammed shut.
THE QUICK FIX: Use a grinding wheel to shape an old hacksaw blade into a harpoon-like point. Then, slip the point into the lock over one of the key nubs and use the hook to fish it out.

Illustration by George Retseck

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Illustration by George Retseck

BLURRED VISION: The zoom shots from your fancy new digital camera are fuzzy.
THE QUICK FIX: Only use your *optical* zoom. Most digital cameras have both optical zoom, in which the lens moves (just like a zoom on a film camera), and digital zoom, which manipulates the image electronically. The digital zoom can compromise the quality of the image. If you want more magnification than the optical zoom can handle, it's better to achieve it on a computer after the fact.

RISING WATERS: The toilet is about to overflow, and you know that your usual tactic of slamming the lid and crossing your fingers won't work.
THE QUICK FIX: As soon as the water level in the bowl starts rising, reach into the tank and prop up the fill valve (the ball or cylinder that floats on top of the water). That will stop the flow to the toilet, thwarting an overflow. The plunger, however, still awaits.

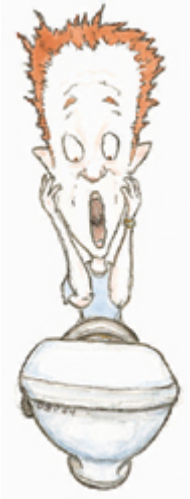


Illustration by David J. Pullman

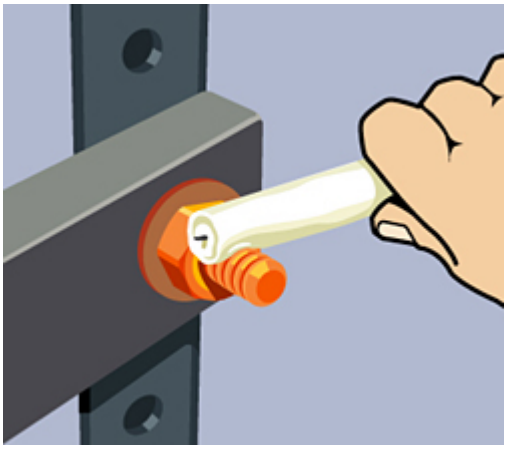


Illustration by George Retseck

IMMOVABLE OBJECT: A stubborn nut on an old lawnmower or pickup truck refuses to budge.
THE QUICK FIX: The standard tactic since the dawn of the acetylene torch has been to heat the nut until it glows red. When heat alone won't cut it, touch a candle to the glowing nut. The wax will melt and flow into the threads, acting as a lubricant.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

SNEAK LEAK: You can't find the source of oil leaking from your engine.
THE QUICK FIX: First, spray the area with Easy Off kitchen cleaner. (It's cheaper than automotive cleaners.) Then, hose the area down, let it dry and spray on aerosol foot powder. The oil will stain a path in the powder, which you can follow back to its source.

Editor's Note: We've already received mail on this one. Yes, Easy Off can corrode aluminum, but the damage isn't instantaneous. Make sure to rinse it off with a hose both promptly and thoroughly.

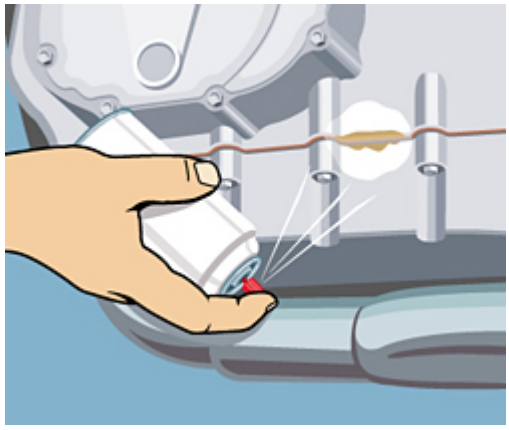


Illustration by George Retseck

SUN-DRIED TOMATOES: You need a way to water sensitive tomato plants during your summer vacation, without asking your neighbor to take care of them (again).
THE QUICK FIX: Collect some liter-size plastic soda bottles and punch a few small holes in each one. Then, bury a bottle up to its neck next to each of the plants. Before you leave, simply fill the bottles; they'll slowly release the water over the next four or five days and keep your plants from wilting.

STRUCTURAL COLLAPSE: A broken tent pole is threatening to ruin your annual family camping trip.
THE QUICK FIX: "As long as you don't need it to hold up to serious weather, you can splint a tent pole with a branch," says Michael Hodgson, author of *Camping For Dummies*. (Use medical tape, dental floss--or, yes, duct tape.) "Heck, you can even pitch a tent entirely with branches if you need to."

Illustration by George Retseck

POLTERGEIST DOOR: Every house has one, a door that slowly drifts shut every time you try to leave it open.
THE QUICK FIX: Rather than resetting the hinges or propping it open with a potted plant, remove one of the hinge pins, lay it over a nail atop a hard surface, and strike it lightly with a hammer until the hinge pin has a slight bend. Tap the pin back in place. The increased friction will keep the door where you want it.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

TRASHED SINK: The kitchen garbage disposal is frozen.
THE QUICK FIX: "Ninety-five percent of garbage disposals have a reset button on the motor," says Chris Hall, a former appliance repairman and founder of Repairclinic.com. "No other appliance has this, so people assume they need to call a technician. I've answered literally dozens of calls that just needed someone to hit the reset."

Photo by HP

BLANK SLATE: You've lost the stylus to your PDA.
THE QUICK FIX: Use a toothpick. It works as a replacement--and does double duty after dinner.

CHILLY DEPTHS: There's a puddle of water under your refrigerator, and it's growing.
THE QUICK FIX: "I see this all the time," says Jeff McKinney, owner of JEM Plumbing and a member of ServiceMagic.com. "Usually, it's because the icemaker line has sprung a leak. People don't realize that there's a shutoff valve. Typically, it's under the sink. If not, look in the basement, beneath the fridge."

CRACK HABIT: You've always used Spackle to patch cracks in plaster walls, just like your father did. But the pesky fissures keep opening up.
THE QUICK FIX: "Use a clear latex acrylic caulk, rather than traditional patching compounds," says John Stauffer, technical director at the Paint Quality Institute. "The caulk has some flexibility, so it won't open up if your house moves a bit."

DRIP SERVICE: A toilet tank is dripping and you can't tell if the water is coming from harmless seasonal sweating or a bad seal.
THE QUICK FIX: Dump some food coloring into the tank and see if the color reaches the floor. If it

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

does, check the tank for cracks and the piping for loose connections.

Illustration by George Retseck

SPARELESS MISTAKE: You've got a flat tire on your mountain bike, and you don't have a spare inner tube.
THE QUICK FIX: Create a makeshift inner tube out of leaves and grass. "It sounds absurd, but it really works," says Scott Kaier, a mechanic at Onion River Sports in Montpelier, Vt. "Leave one side of the tire bead hooked on the rim, and cram the opening with as much soft stuff as you can find. Install the other bead, and away you go." At least it will get you home.

CHIMNEY SEEP: No matter what you do, the paint on your masonry chimney keeps peeling.
THE QUICK FIX: Install a galvanized (good), stainless (better) or copper (best) rain cap. These start at about $30 and are available in most home repair and building supply outlets. "Peeling chimney paint is almost always caused by water working its way from the inside, out," explains John Stauffer, technical director at the Paint Quality Institute. "A rain cap will keep the bulk of the water out of the flue."

Illustration by David J. Pullman

Photo by Tom Klenck

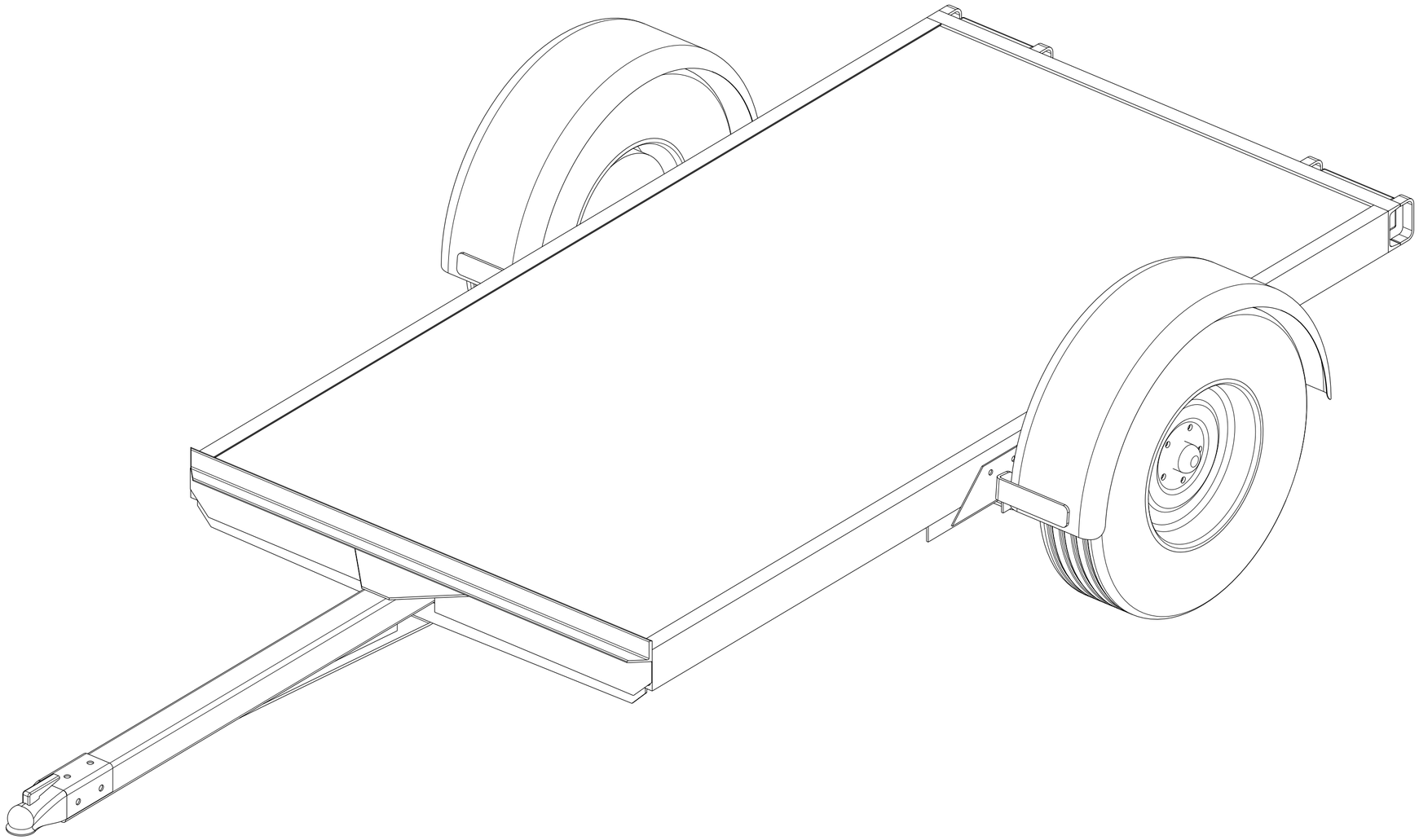
A TWO-WEEKEND PAINT JOB: You want to put away your paint-laden rollers and brushes without cleaning them.
THE QUICK FIX: Wrap the painting utensils tightly in a plastic bag and stick them in the freezer. Once thawed, they'll be ready to use. Caveat: Paint is for painting, not eating. Be sure to seal the bag tightly to eliminate any chance of food contamination.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

FLUID LOSS: Your radiator is leaking, you're in the middle of nowhere, and there's no repair shop in sight.
THE QUICK FIX: Dump in a small container of ground black pepper. The pepper won't dissolve, but instead will remain in suspension. This allows it to temporarily plug minor leaks, buying you enough time to get to the shop.

CROSSED SIGNALS: You're constantly getting kicked off the wireless link on your home computer network.
THE QUICK FIX: Other devices are probably interfering. If you have a 2.4-GHz cordless phone, switch to a 900-MHz, or a newer 5.8-GHz, model. These phones operate on different frequencies than your wireless router. (Some 2.4-GHz phones allow you to change frequencies--check your owner's manual.) Microwave ovens can also disrupt your wireless signal.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



3D VIEW OF COMPLETE TRAILER FOR REFERENCE
SCALE 0.125

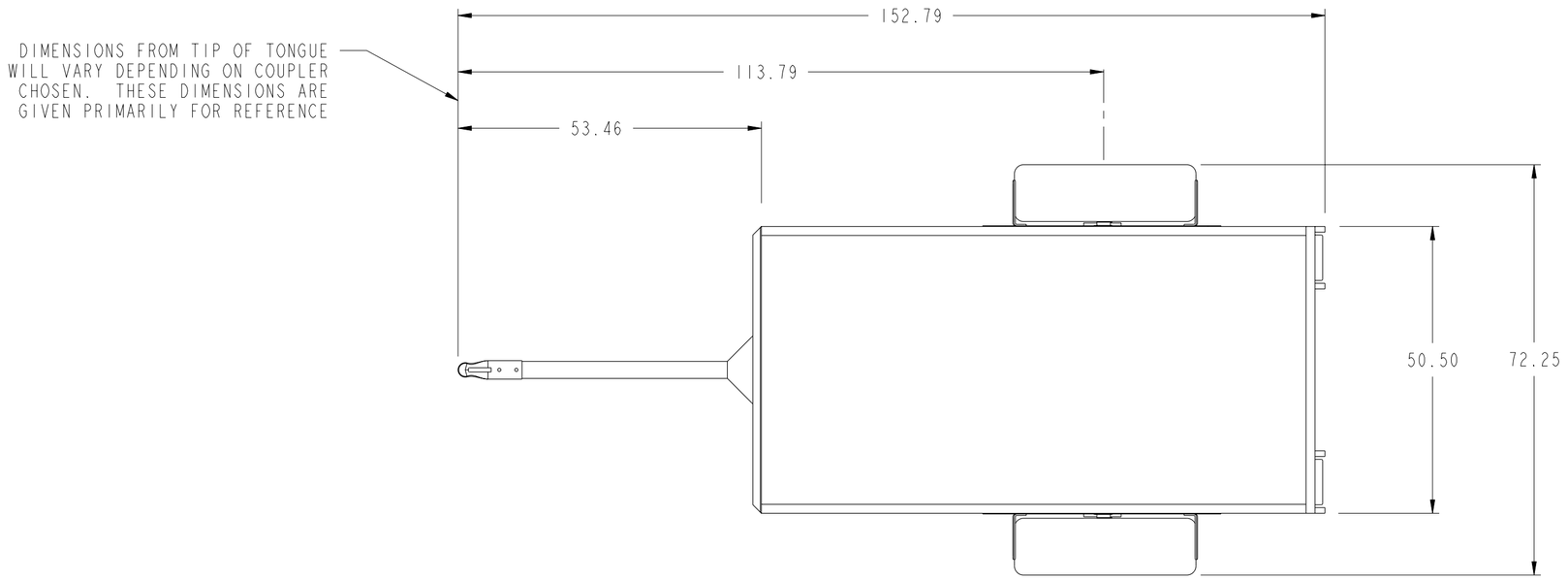
Third Angle Projection

C

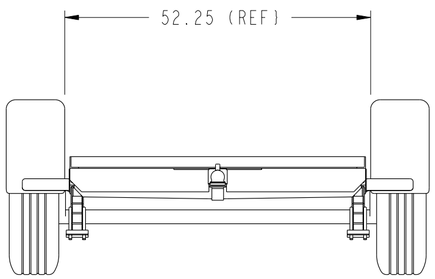
4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 1 OF 18

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
MechanicalElements.com

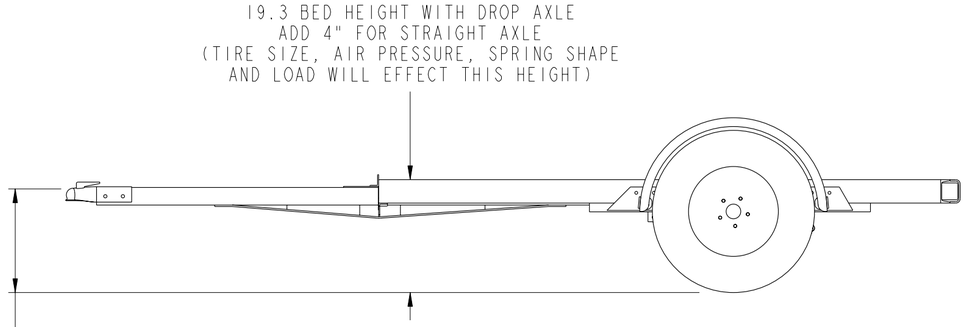
Copyright 2003. All rights reserved.



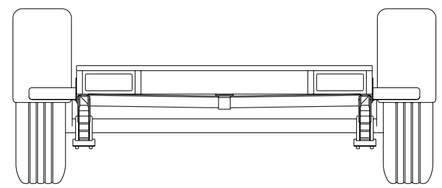
TOP VIEW



FRONT VIEW



SIDE VIEW



REAR VIEW

NOTES:

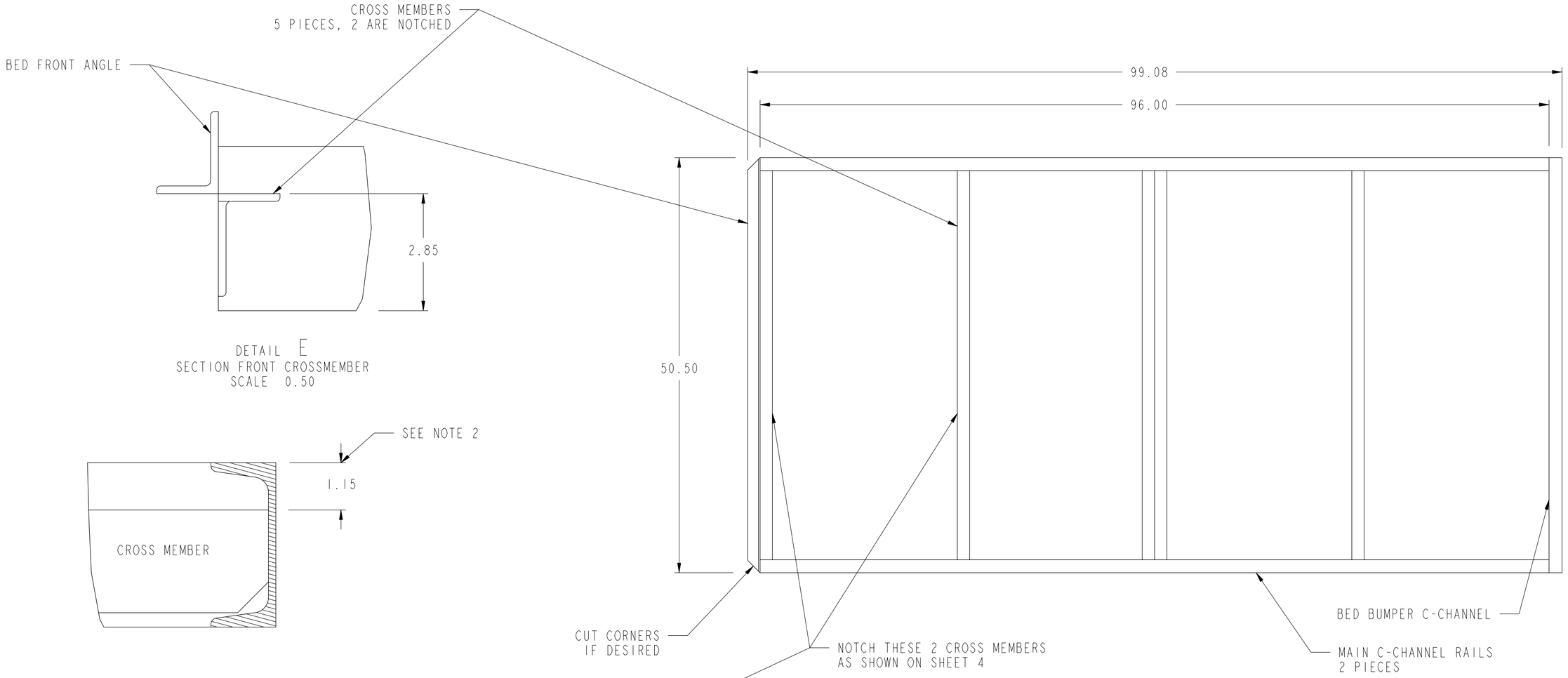
1. FOR A LIST OF COMPONENTS, MATERIALS & OPTIONS
   SEE THE ASSOCIATED 4x8 UTILITY TRAILER DOCUMENTATION
2. INSTRUCTIONS FOR BUILDING THE TRAILER ARE ALSO INCLUDED
   IN THE TRAILER CONSTRUCTION INSTRUCTIONS
3. ORTHOGONAL VIEWS OF COMPLETED TRAILER SHOWN
   SEE FOLLOWING SHEETS FOR CONSTRUCTION VIEWS

Third Angle Projection

C

4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 2 OF 18

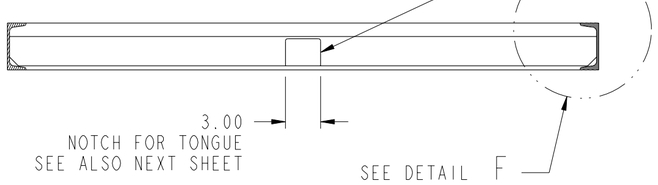
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Copyright 2003. All rights reserved. MechanicalElements.com



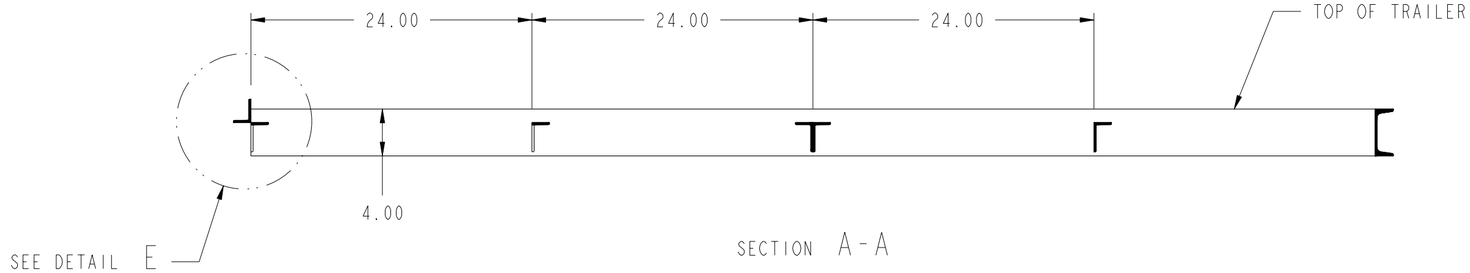
DETAIL E
SECTION FRONT CROSSMEMBER
SCALE 0.50

DETAIL F
SECTION SHOWING ATTACHMENT OF CROSSMEMBERS
SCALE 0.50

TRAILER FRAME TOP VIEW
SCALE 0.10



SECTION B-B



SECTION A-A

NOTES:

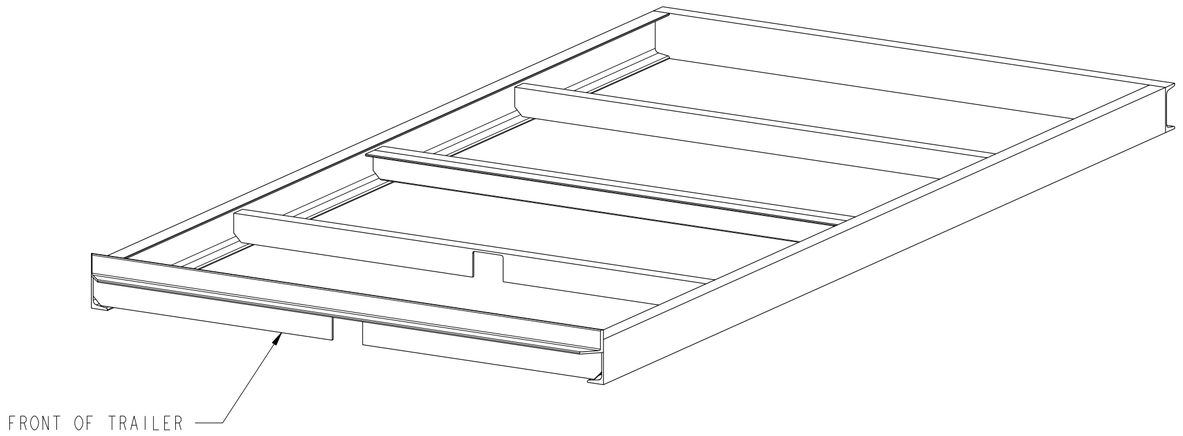
1. FOR 3D VIEW OF FRAME, SEE NEXT SHEET
2. SPACE FROM TOP OF CROSS MEMBERS TO TOP OF SIDE BEAMS FOR DECKING. SEE INSTRUCTIONS FOR VARIATIONS AND OPTIONS.

Third Angle Projection

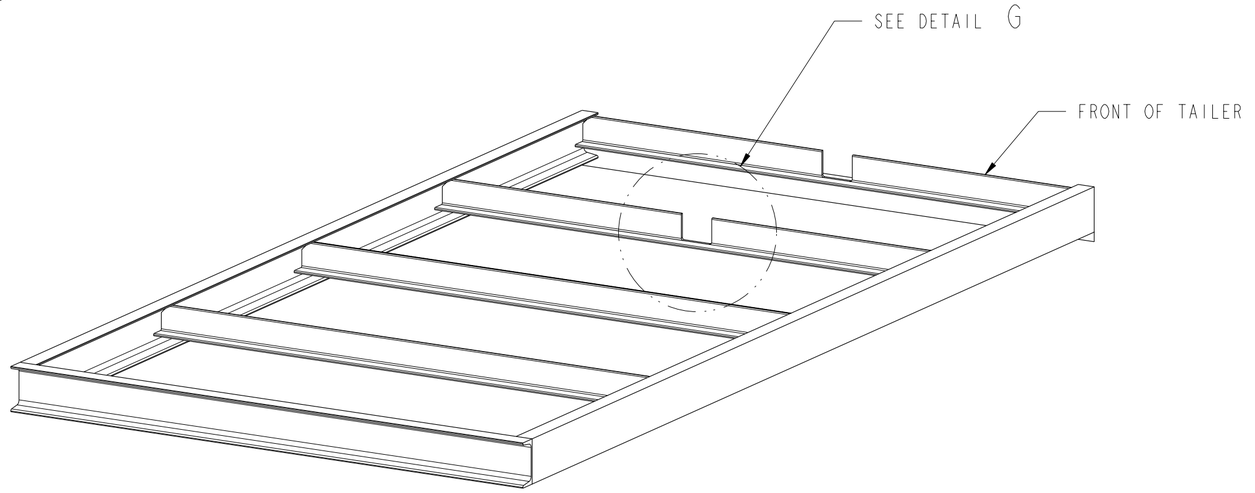
C

4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 3 OF 18

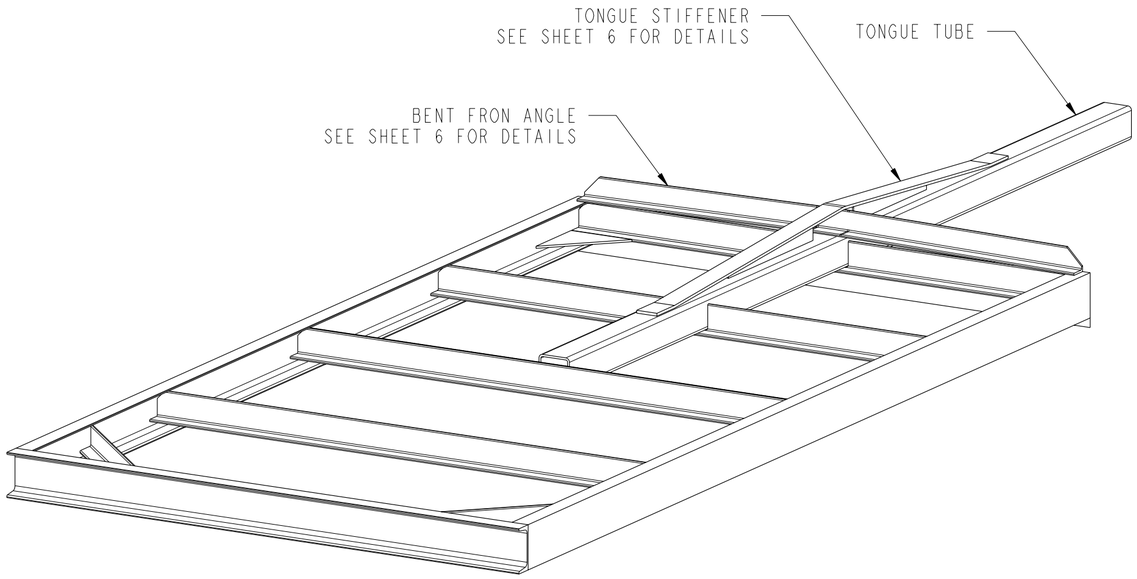
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Copyright 2003. All rights reserved. MechanicalElements.com



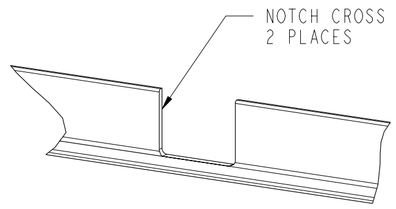
TRAILER FRAME BEFORE GUSSETS & TONGUE
VIEW SHOWING TOP OF FRAME
SCALE 0.100



TRAILER FRAME BEFORE GUSSETS & TONGUE
VIEW SHOWING BOTTOM OF FRAME
SCALE 0.100



TRAILER FRAME WITH GUSSETS AND TONGUE
VIEW SHOWING BOTTOM OF FRAME
SCALE 0.100



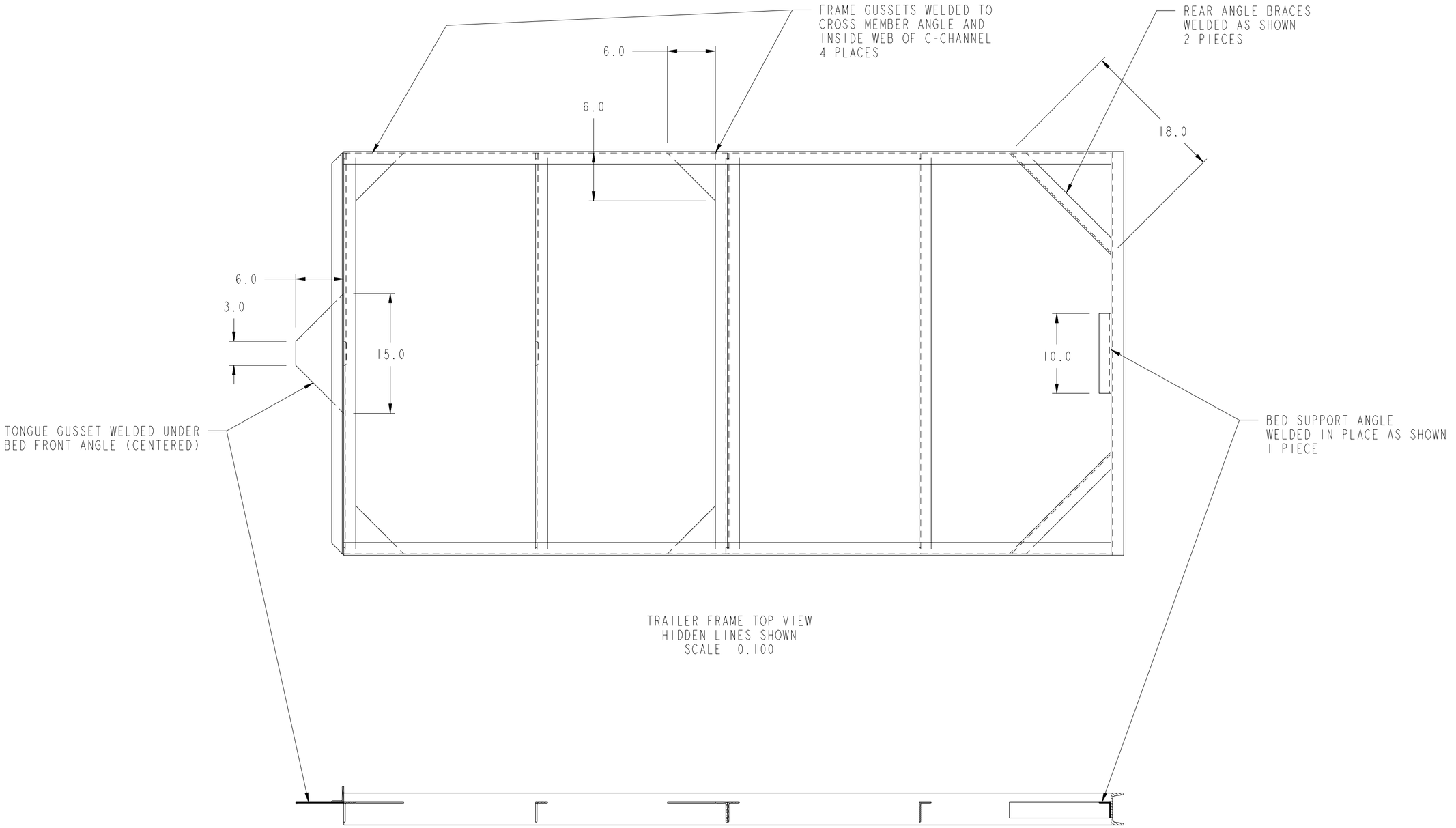
DETAIL G
SCALE 0.250

Third Angle Projection

C

4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 4 OF 18

Copyright 2003. All rights reserved.
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
MechanicalElements.com



TRAILER FRAME TOP VIEW
HIDDEN LINES SHOWN
SCALE 0.100

SECTION A-A

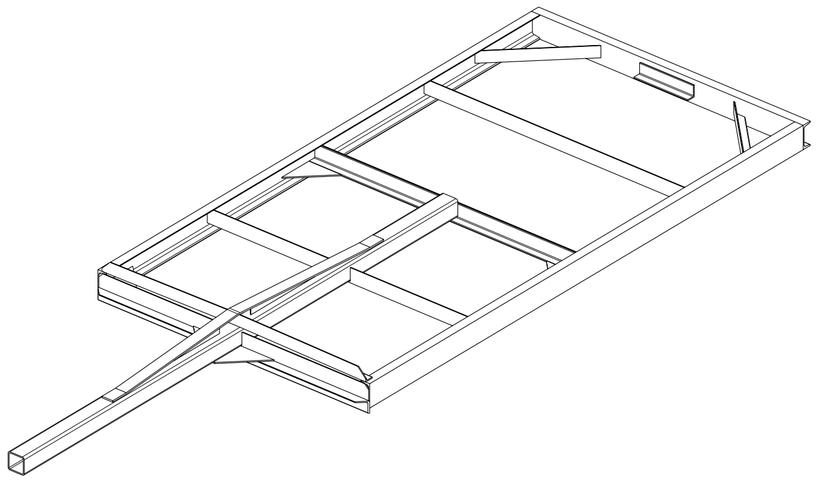
Third Angle Projection

C

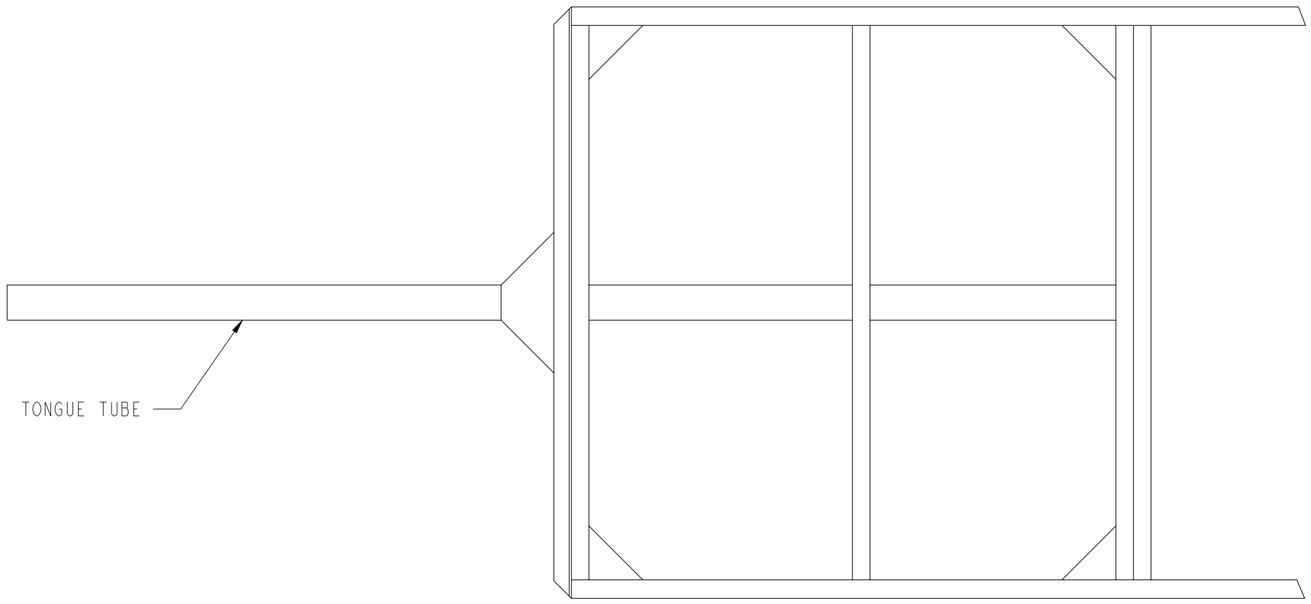
4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 5 OF 18

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

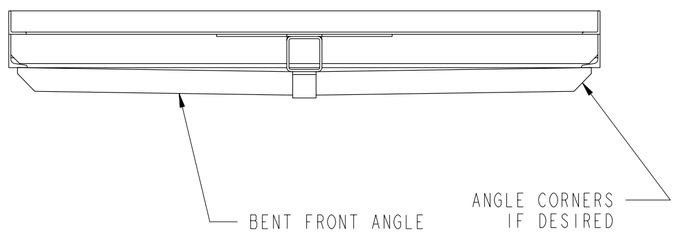
Copyright 2003. All rights reserved. MechanicalElements.com

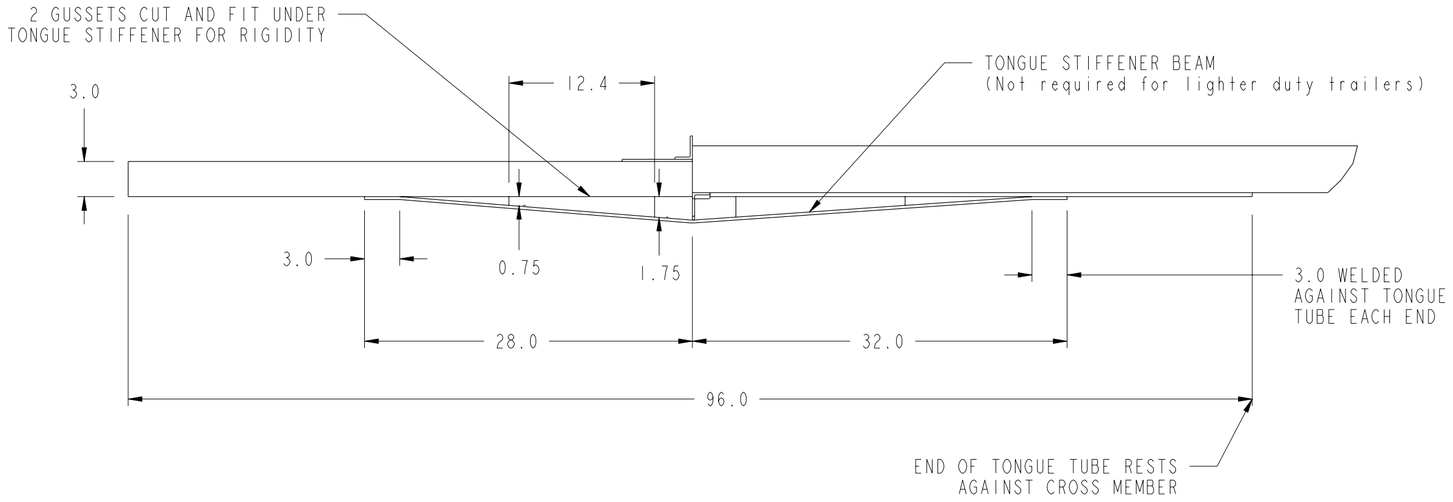


3D VIEW FOR REFERENCE
SEE ALSO SHEET 4
VIEW SHOWING BOTTOM OF FRAME
SCALE 0.060



PARTIAL VIEW OF TRAILER TOP
SCALE 0.10



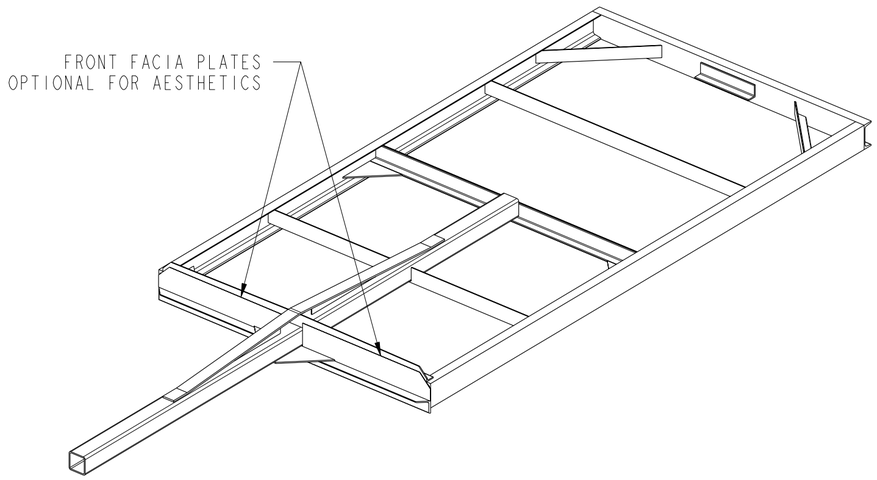


Third Angle Projection

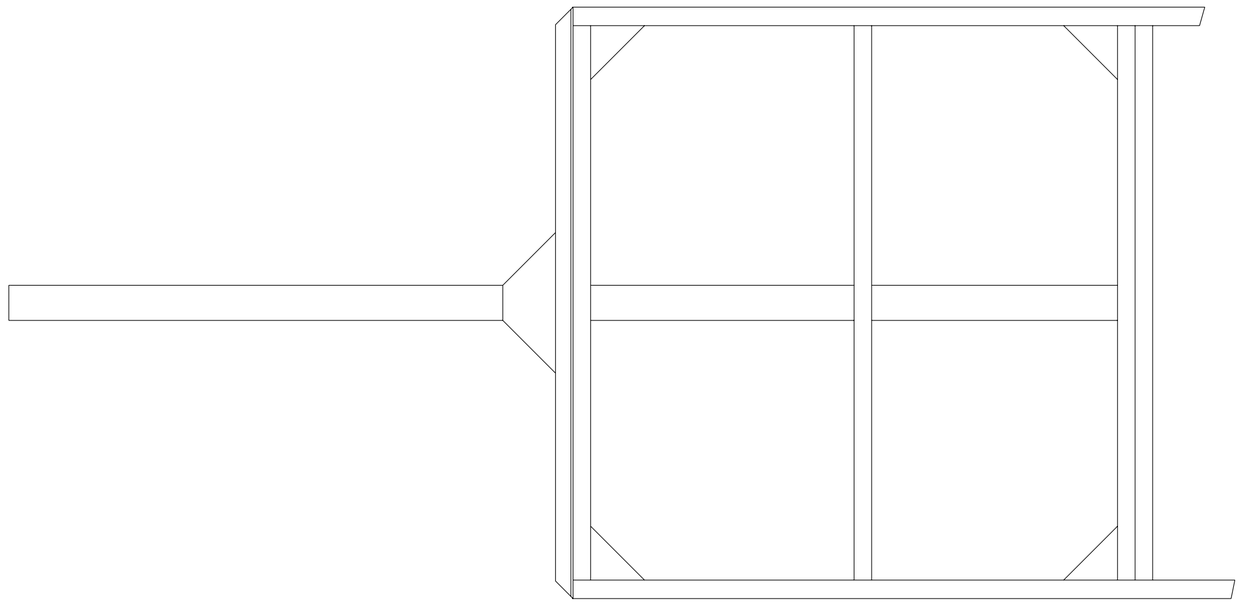
C

4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 6 OF 18

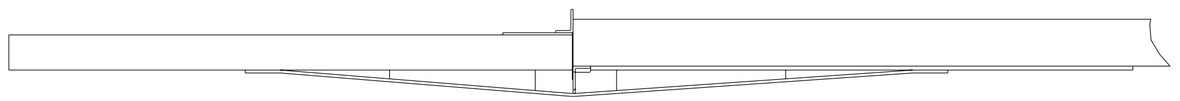
Copyright 2003. All rights reserved.
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
MechanicalElements.com

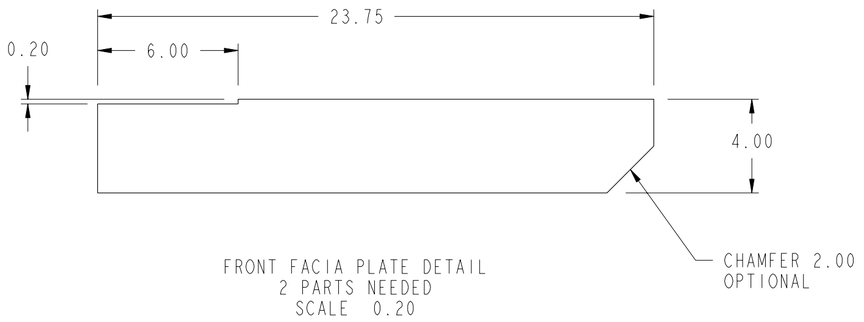


3D VIEW FOR REFERENCE
VIEW SHOWING BOTTOM OF FRAME
SCALE 0.06



PARTIAL VIEW OF TRAILER TOP
SCALE 0.10





FRONT FACIA PLATE DETAIL
2 PARTS NEEDED
SCALE 0.20

Third Angle Projection

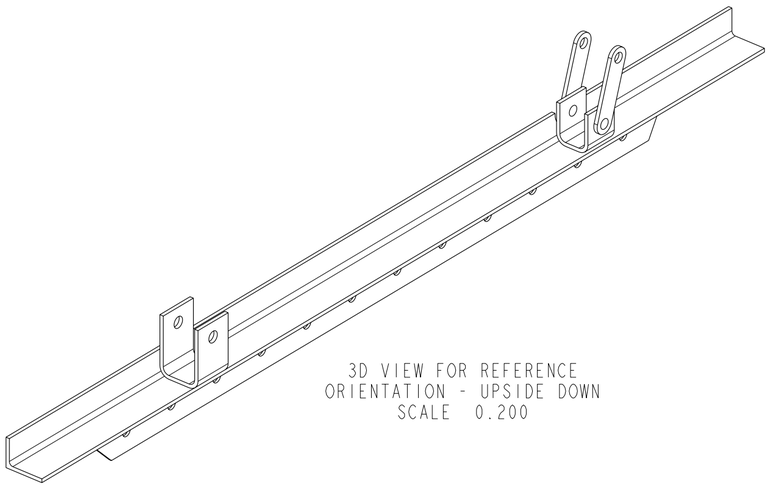
C

4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 7 OF 18

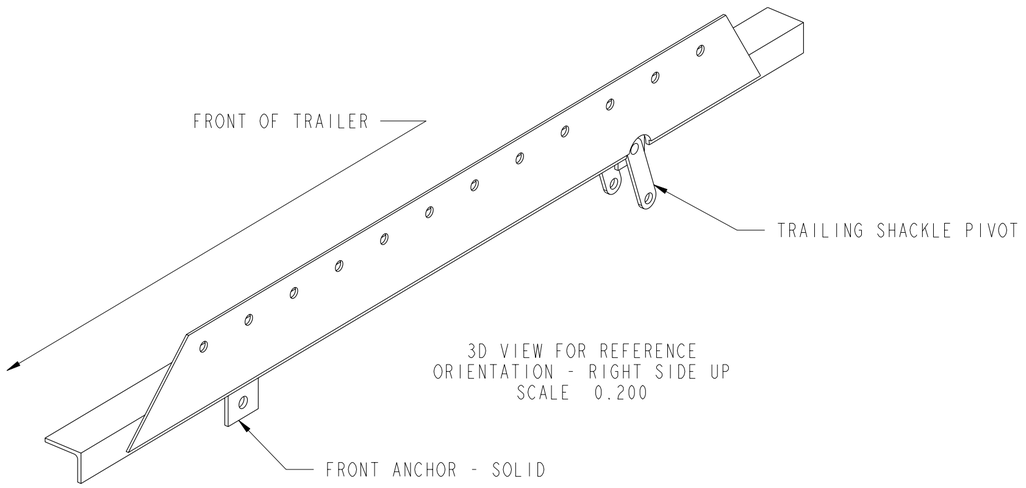
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Copyright 2003. All rights reserved.

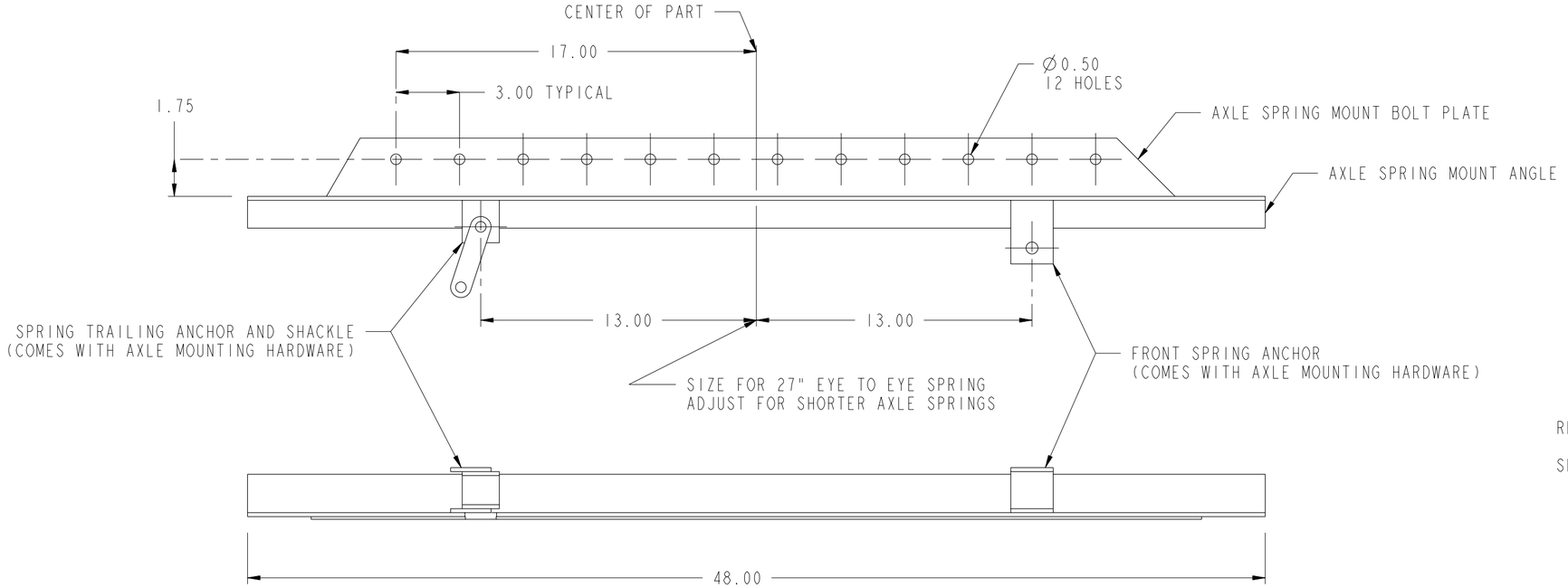
MechanicalElements.com

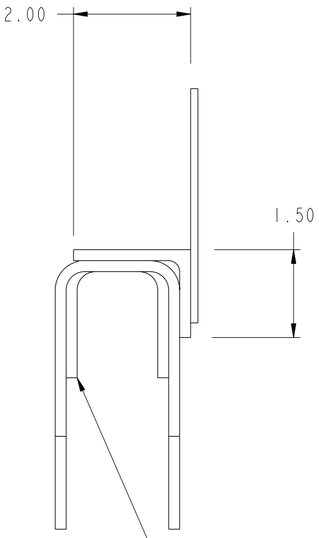


3D VIEW FOR REFERENCE
ORIENTATION - UPSIDE DOWN
SCALE 0.200

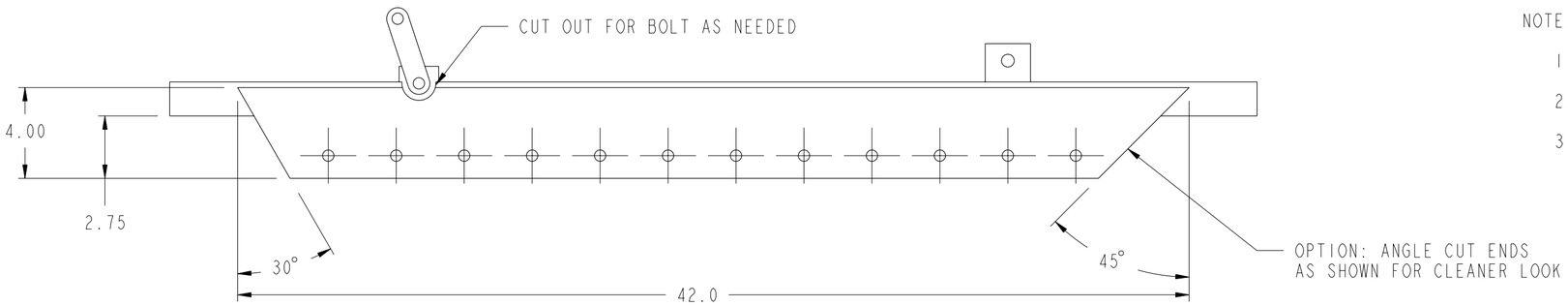


3D VIEW FOR REFERENCE
ORIENTATION - RIGHT SIDE UP
SCALE 0.200





END VIEW
SCALE 0.500



SCALE 0.200

NOTE:

1. LEFT SIDE (DRIVERS SIDE) SPRING MOUNT SHOWN RIGHT HAND PART OPPOSITE
2. SERIES OF HOLES THROUGH SPRING MOUNT BOLT PLATE ARE OPTIONAL FOR MOVABLE AXLE
3. IF AXLE IS NOT TO BE MOVABLE, WELD SPRING MOUNT DIRECTLY TO MAIN FRAME BEAMS AFTER PLACEMENT

Third Angle Projection

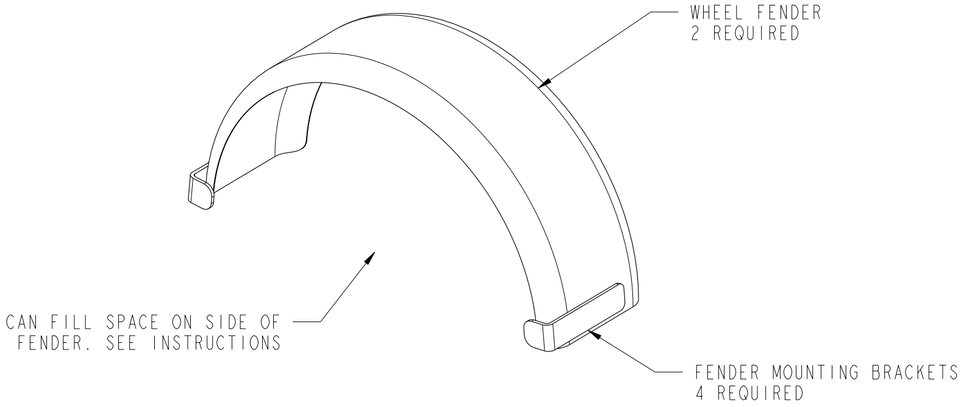
C

4x8 UTILITY TRAILER

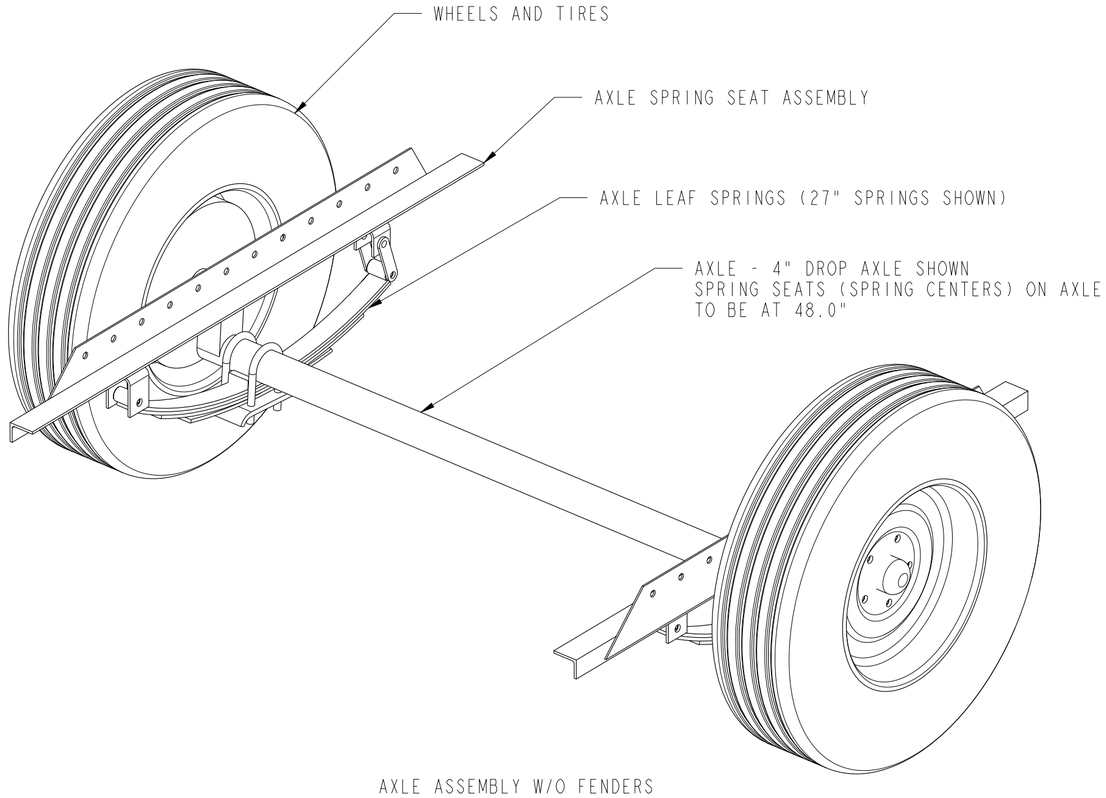
REV: 03

SMu48D35C-P2 | INCH | SHEET: 8 OF 18

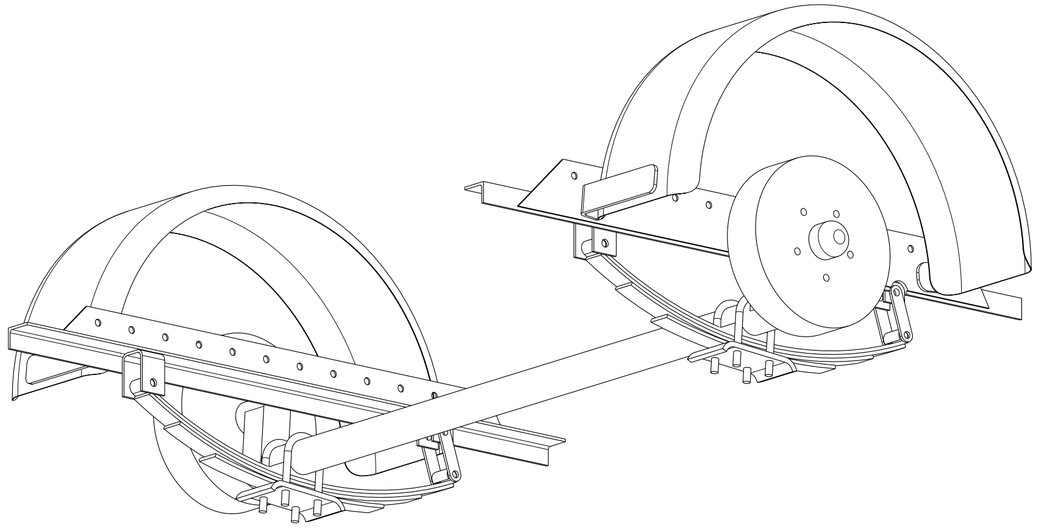
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Copyright 2003. All rights reserved. MechanicalElements.com



FENDER WITH MOUNTING BRACKETS
SCALE 0.125



AXLE ASSEMBLY W/O FENDERS
SCALE 0.125



AXLE ASSEMBLY WITH FENDERS
WHEELS REMOVED FOR CLARITY
SCALE 0.125

NOTE:

1. DROP AXLE SHOWN, STRAIGHT AXLE ASSEMBLY SIMILAR

Third Angle Projection

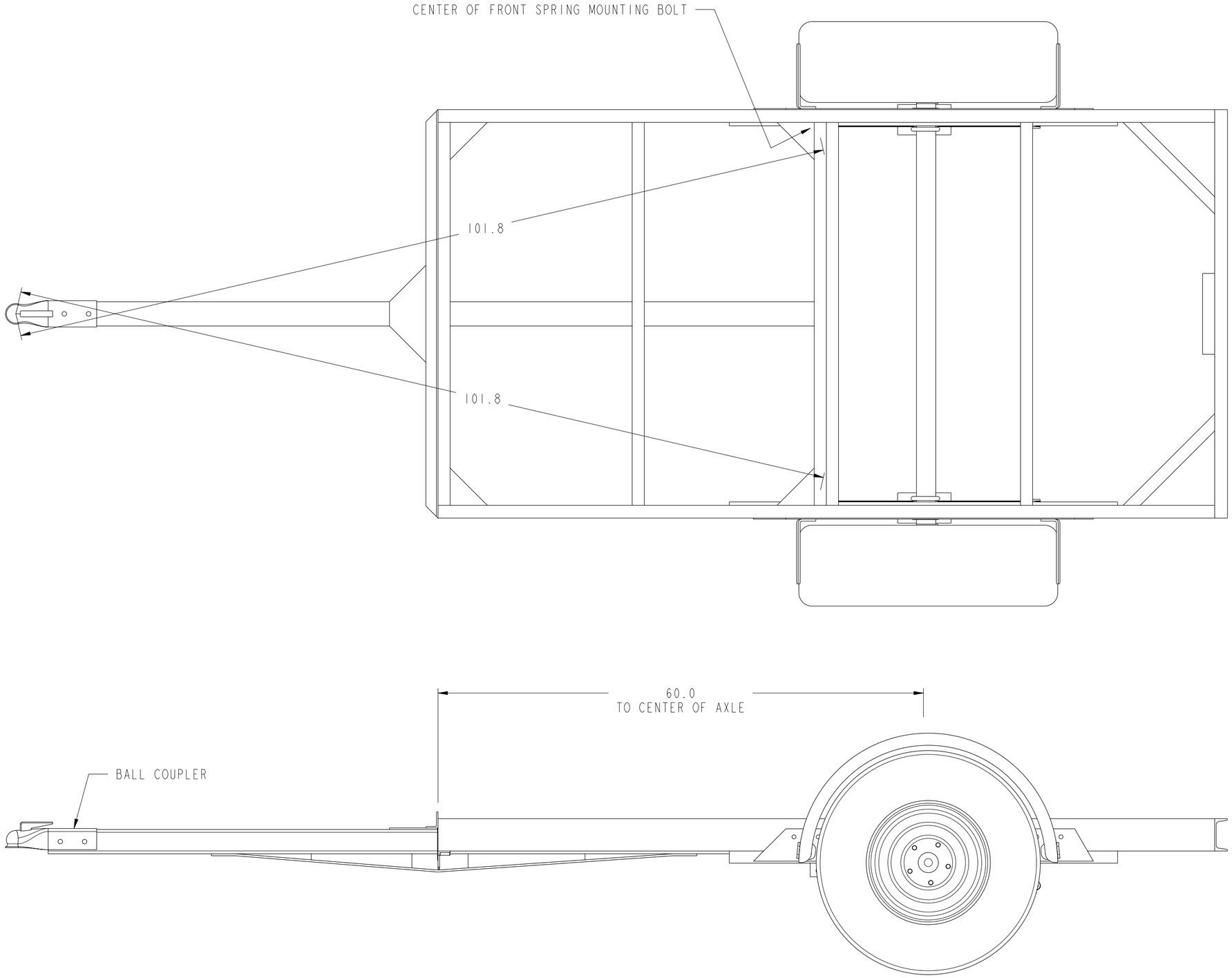
C

4x8 UTILITY TRAILER			REV: 03
SMu48D35C-P2	INCH	SHEET: 9 OF 18	

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Copyright 2003. All rights reserved.

MechanicalElements.com



PLACEMENT OF AXLE ON TRAILER
SCALE 0.100

NOTE:

1. AXLE PLACEMENT SHOWN IS RECOMMENDED FOR MOST APPLICATIONS WITH THE MOVABLE AXLE OPTION, THE AXLE CAN BE MOVED FORE OR AFT IN 3" INCREMENTS FOR BETTER LOAD BALANCE

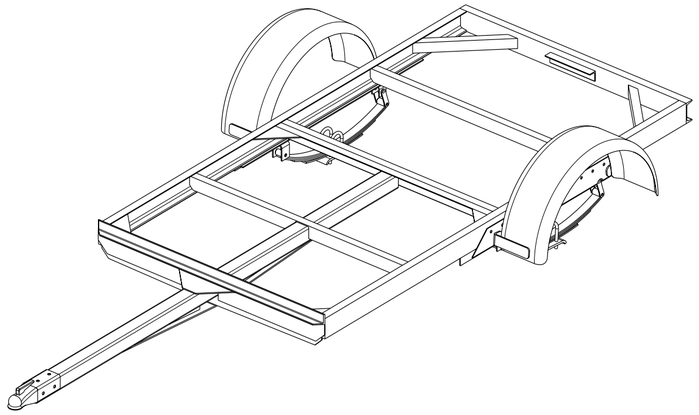
Third Angle Projection

C

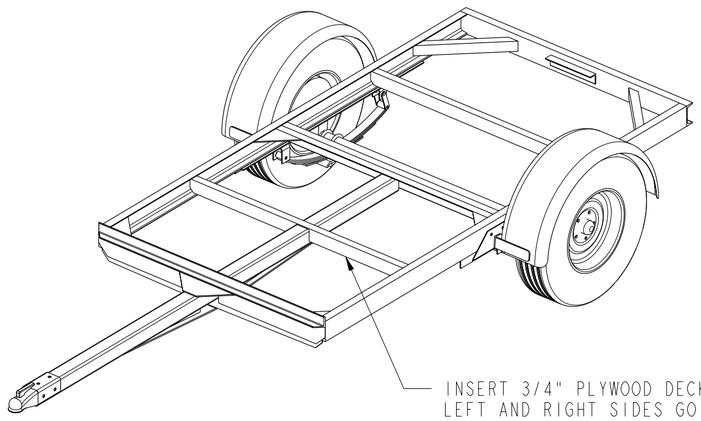
4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 10 OF 18

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

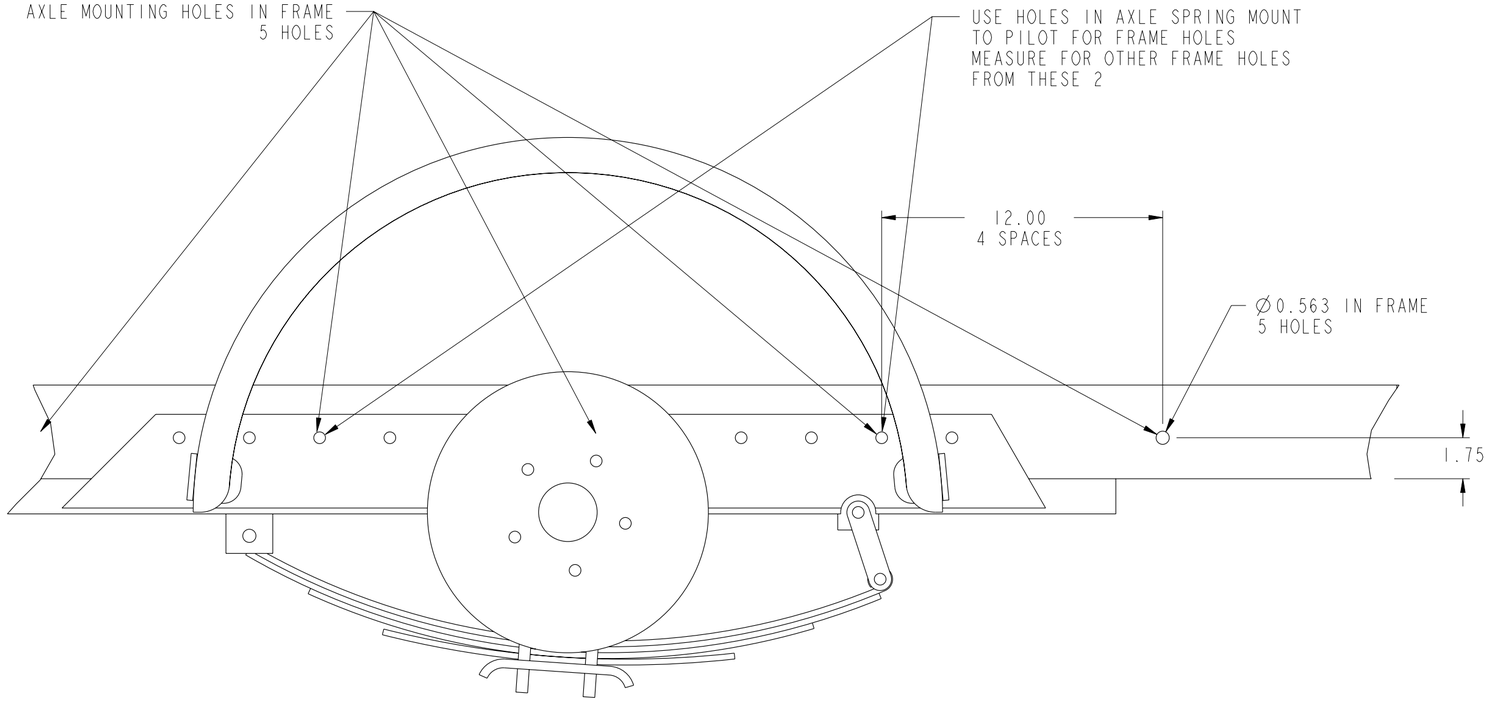
Copyright 2003. All rights reserved. MechanicalElements.com



3D VIEW FOR REFERENCE
AXLE AND WHEELS OFF
SCALE 0.050



3D VIEW FOR REFERENCE
WHEELS ON
SCALE 0.050



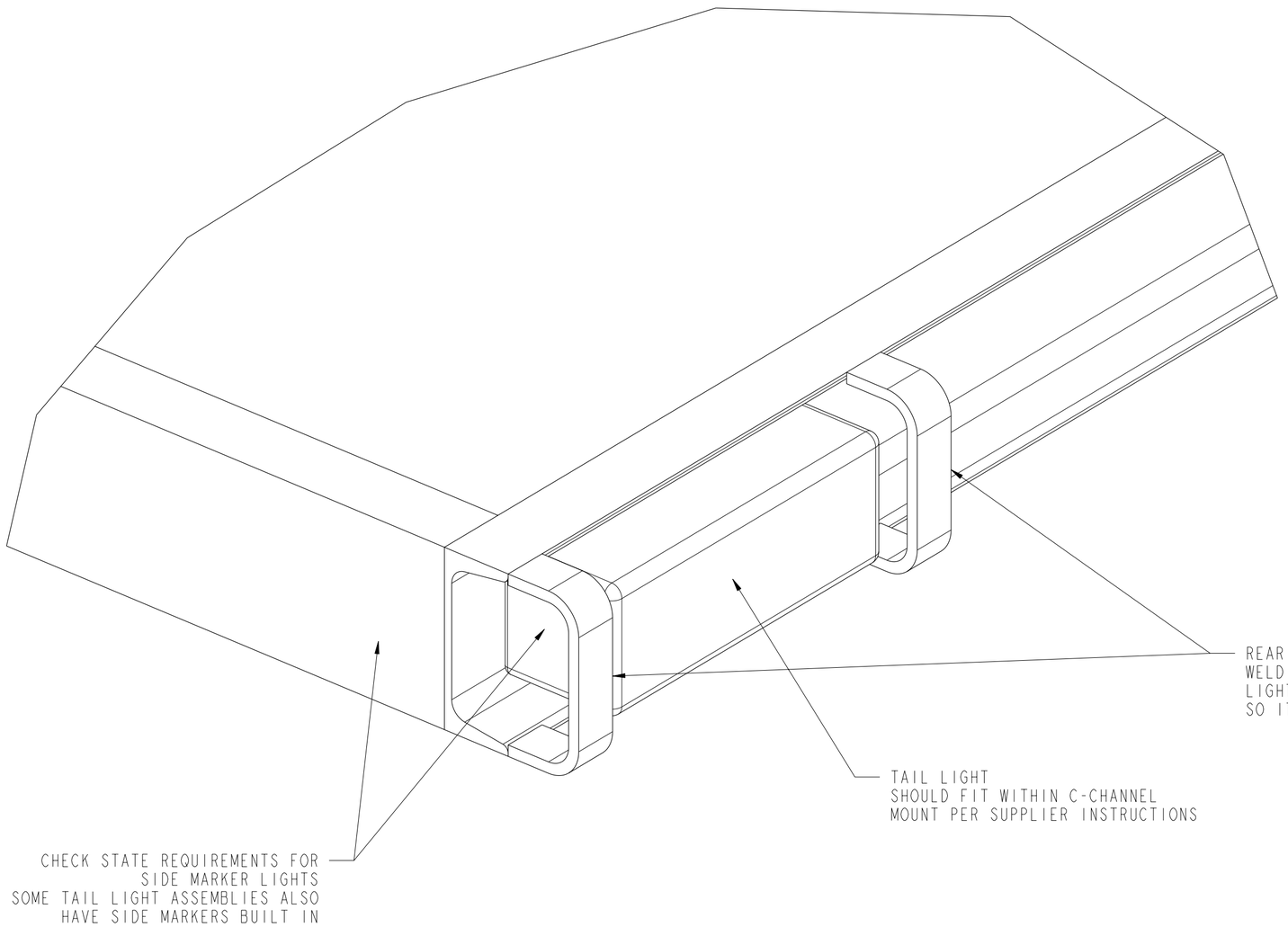
DETAILED VIEW OF AXLE MOUNTING TO TRAILER FRAME
WHEELS AND TIRES NOT SHOWN FOR CLARITY
SCALE 0.200

Third Angle Projection

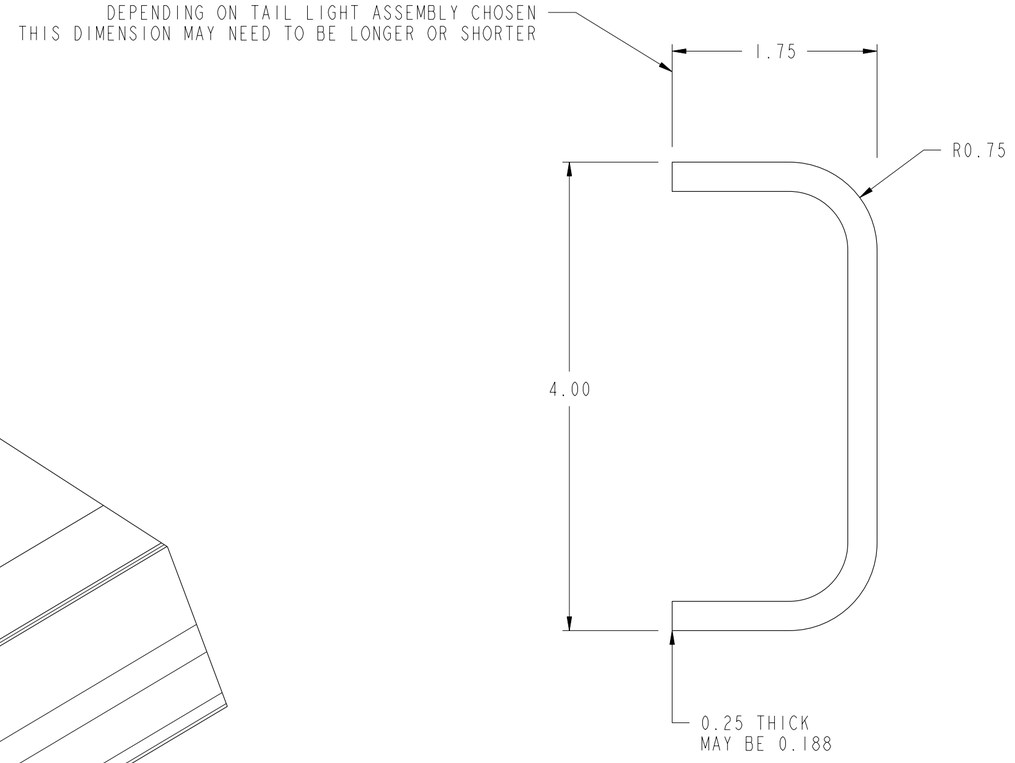
C

4x8 UTILITY TRAILER			REV: 03
SMu48D35C-P2	INCH	SHEET: 11 OF 18	

Copyright 2003. All rights reserved.
MechanicalElements.com
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



TAIL LIGHT PROTECTION DETAIL
SAME EACH SIDE
SCALE 0.500



TAIL LIGHT PROTECTOR
1" WIDE STEEL BENT AS SHOWN
SCALE 1.000

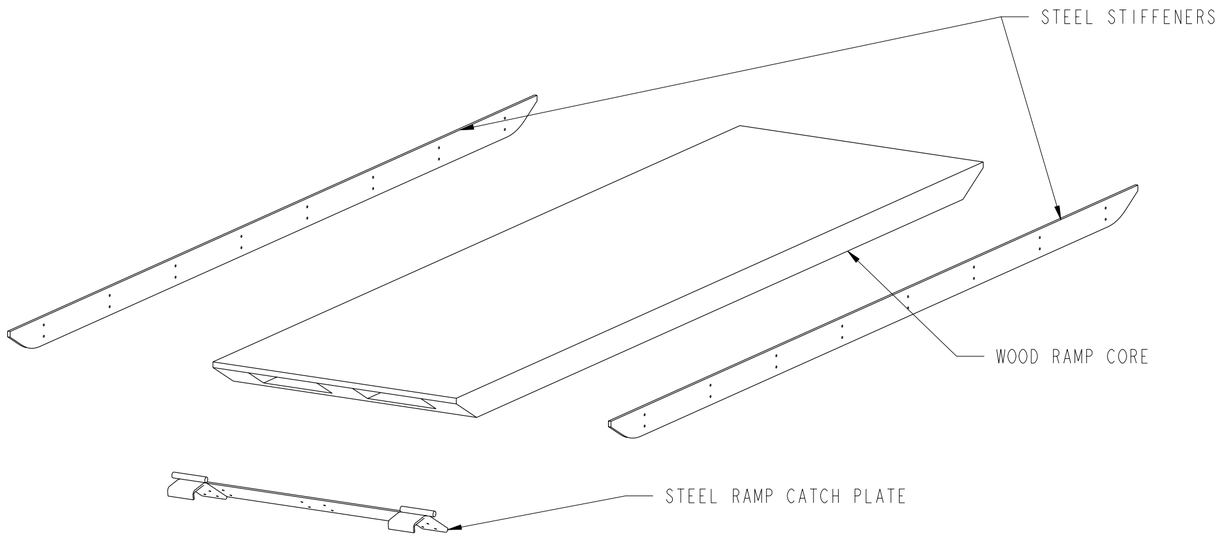
Third Angle Projection

C

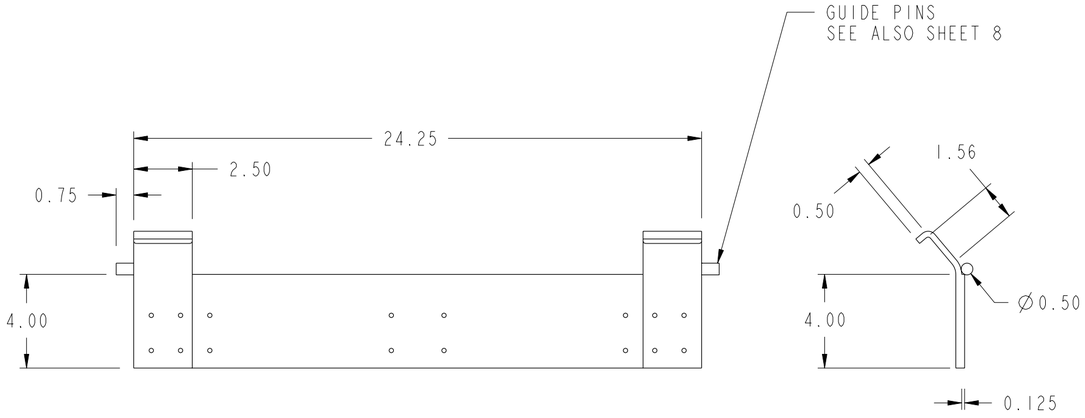
4x8 UTILITY TRAILER	REV: 03
SMu48D35C-P2	INCH	SHEET: 12 OF 18

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
MechanicalElements.com

Copyright 2003. All rights reserved.

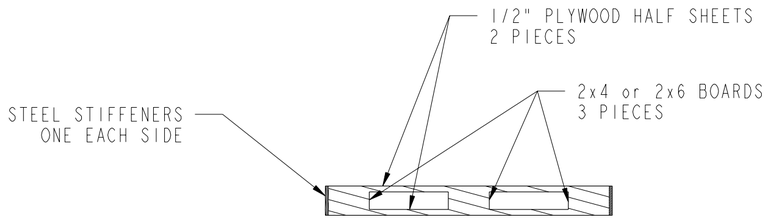


3D EXPLODED VIEW OF OPTIONAL RAMP ASSEMBLY
SCALE 0.100

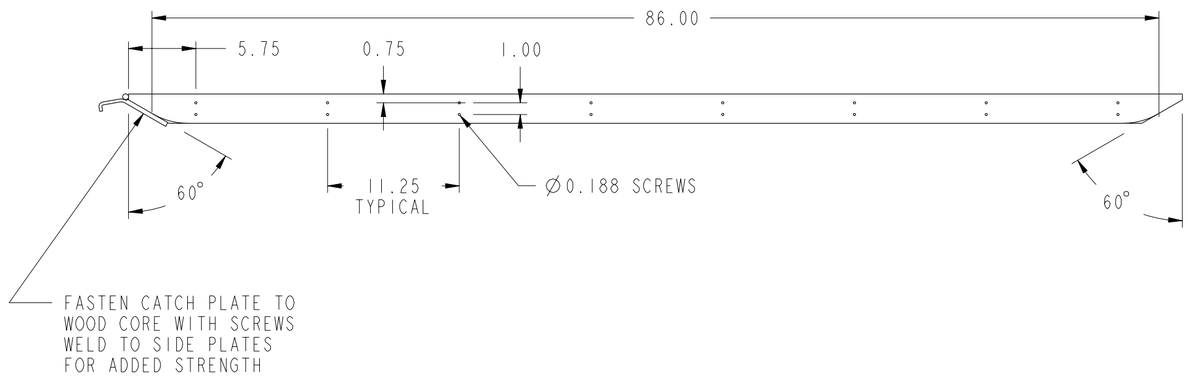


RAMP CATCH PLATE
SCALE 0.200

NOTE:
THIS RAMP CAN BE STORED UNDER THE 5 FOOT WIDE TRAILERS ALSO AT MechanicalElements.COM HOWEVER, THERE IS NOT ENOUGH WIDTH BESIDE THE TONG ON THE 4 FOOT WIDE TRAILERS



SECTION C-C
SCALE 0.100

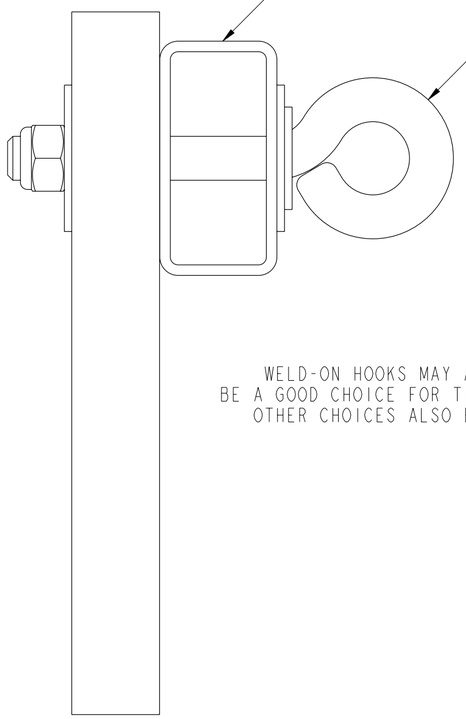


Third Angle Projection

C

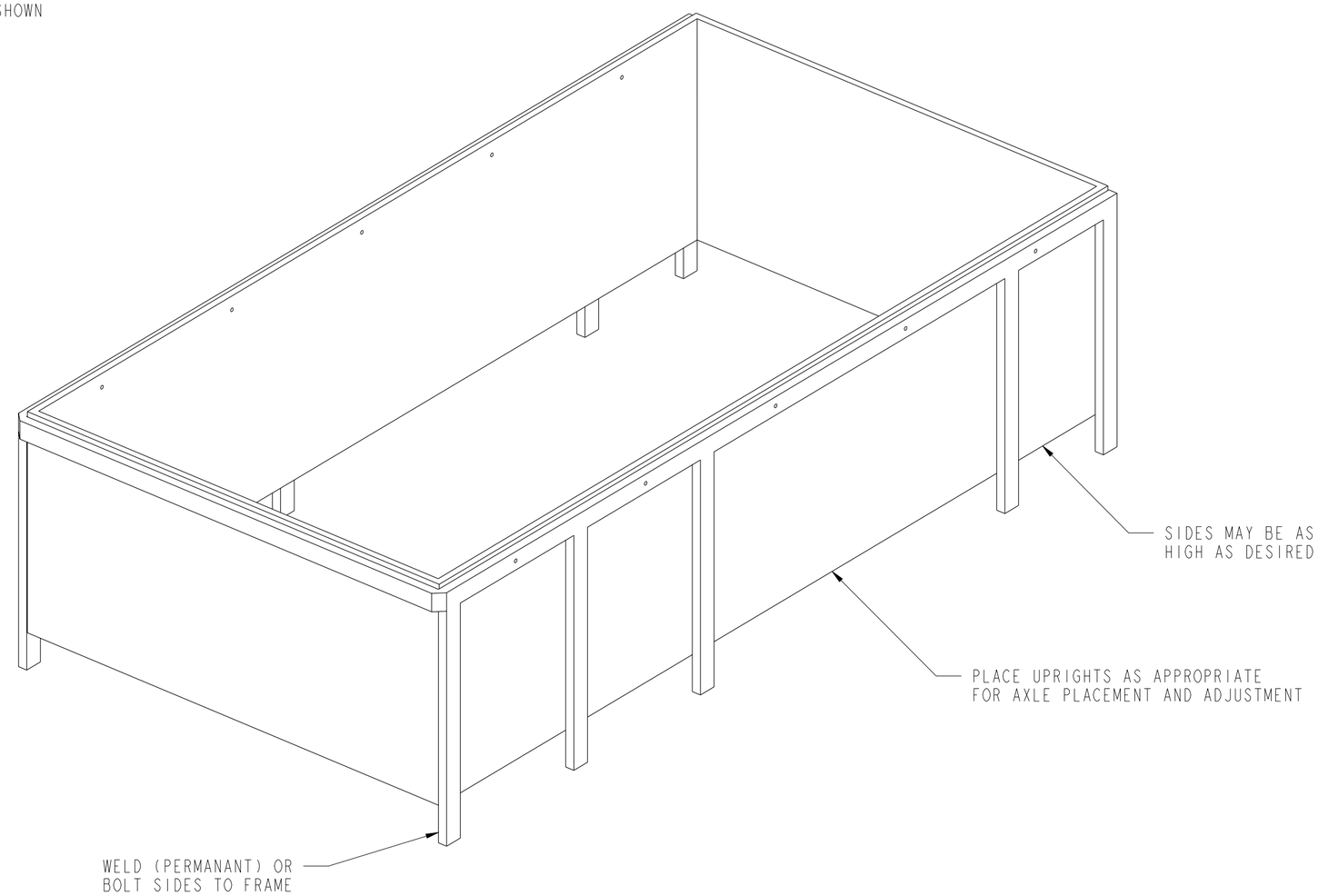
4x8 UTILITY TRAILER	REV: 03
SMu48D35C-P2	INCH
SHEET: 13 OF 18	

Copyright 2003. All rights reserved.
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
MechanicalElements.com



WELD-ON HOOKS MAY ALSO
BE A GOOD CHOICE FOR TIE-DOWNS
OTHER CHOICES ALSO EXIST

OPTIONAL TIE DOWN POINT
USE EYE-BOLT THRU SIDES FRAME
SCALE 1.000



POSSIBLE CONFIGURATION FOR:
SIDES ONLY
SCALE 0.100

NOTE:

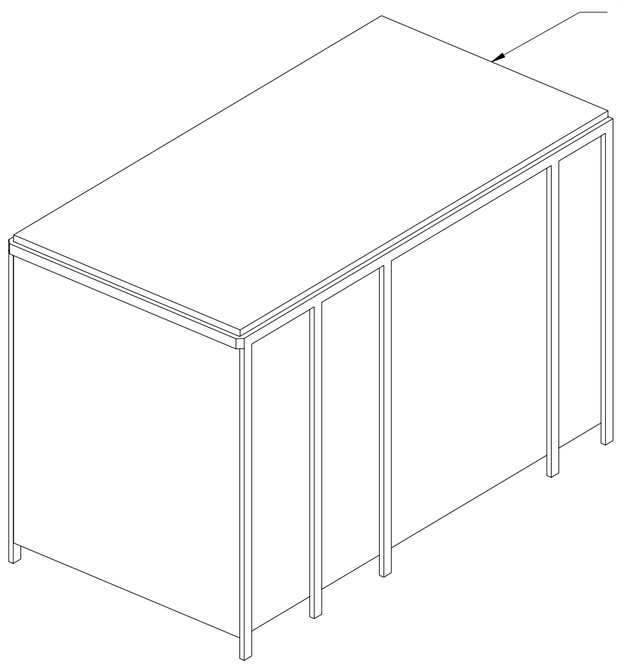
1. SIDES FOR THIS TRAILER ARE OPTIONAL. SEE NEXT SHEET FOR MORE SIDE AND TOP OPTIONS.
2. FRAME AROUND SIDES SHOWN USING 2"x 1" RECTANGULAR STEEL TUBING OTHER SIZES OR MATERIALS CAN BE SUBSTITUTED AS DESIRED
3. 1/2" PLYWOOD LINER SHOWN. OTHER MATERIALS OR CONFIGURATIONS CAN BE SUBSTITUTED AS DESIRED.
4. SUPPORT MEMBERS MAY BE WELDED (PERMANENT) OR BOLTED (REMOVABLE) TO TRAILER FRAME DEPENDING ON NEED.
5. TAILGATE SHOWN IS OPTIONAL. TAILGATE MAY BE USED OR NOT, REMOVABLE OR HINGED OR NOT DEPENDING ON NEED.
6. SEE CONSTRUCTION INSTRUCTIONS FOR MORE INFORMATION ON OPTIONS

Third Angle Projection

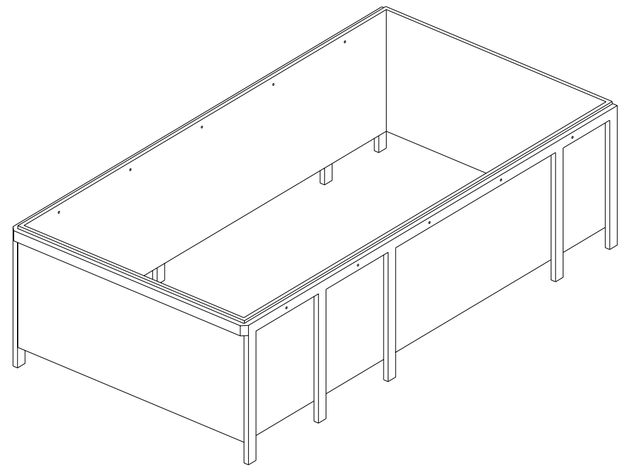
C

4x8 UTILITY TRAILER			REV: 03
SMu48D35C-P2	INCH	SHEET: 14 OF 18	

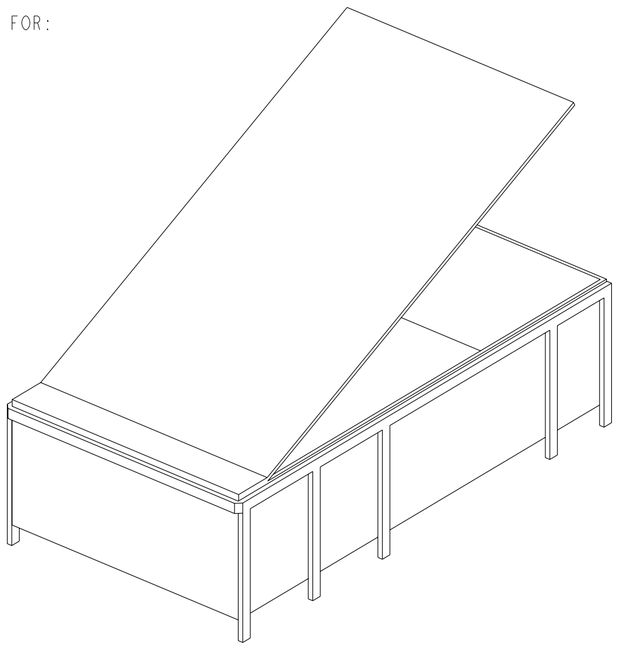
Copyright 2003. All rights reserved.
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
MechanicalElements.com



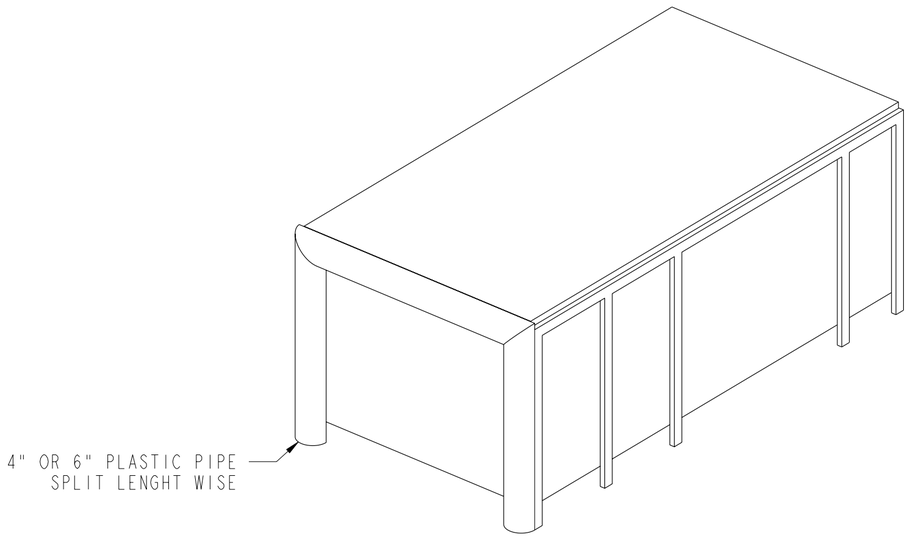
POSSIBLE CONFIGURATION FOR:
SIDES WITH TOP
SCALE 0.050



POSSIBLE CONFIGURATION FOR:
SIDES ONLY
SCALE 0.050



POSSIBLE CONFIGURATION FOR:
SIDES WITH OPENING TOP
SCALE 0.050



POSSIBLE CONFIGURATION FOR:
AERODYNAMIC FRONT
SCALE 0.050

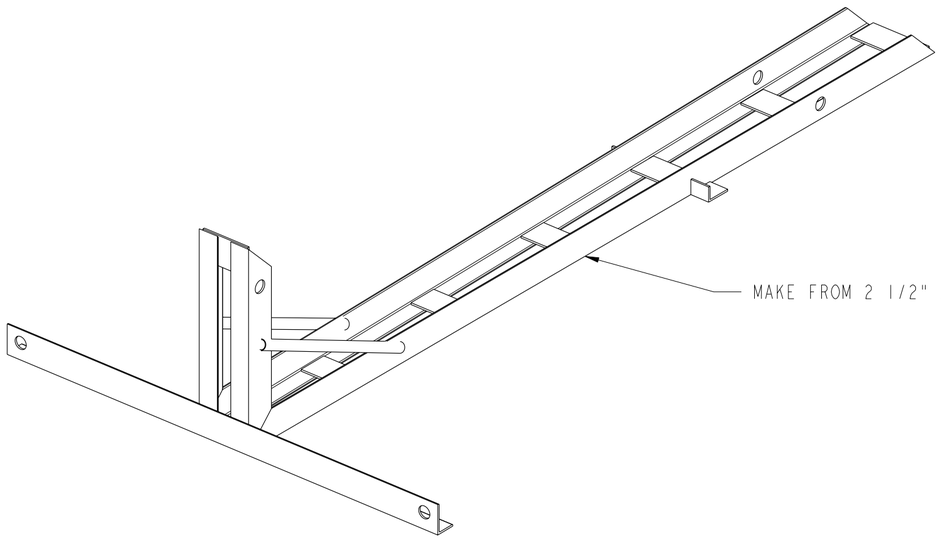
Third Angle Projection

C

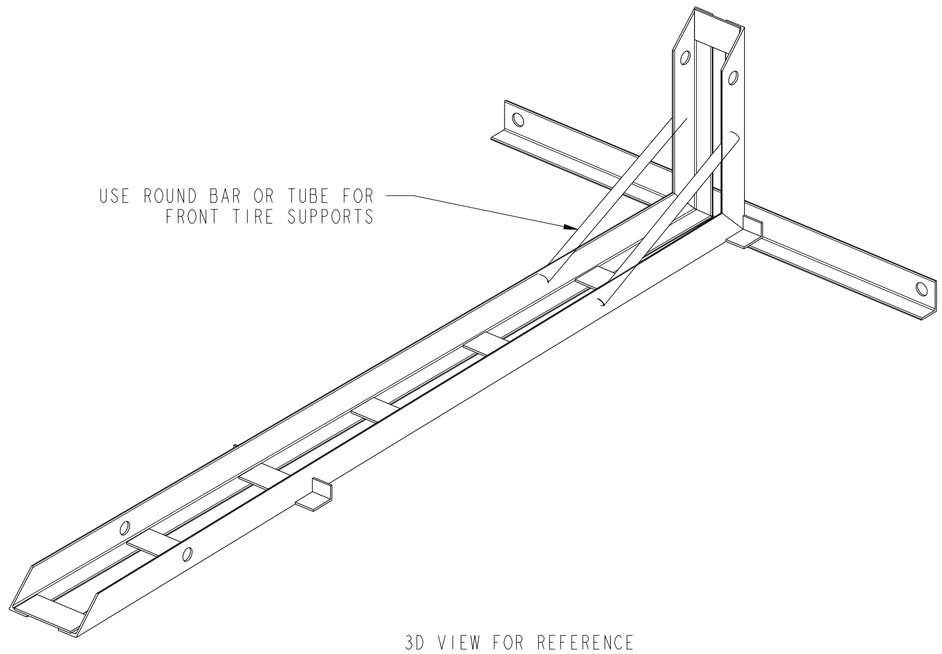
4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 15 OF 18

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Copyright 2003. All rights reserved. MechanicalElements.com



3D VIEW FOR REFERENCE
OPTIONAL CYCLE STAND
SCALE 0.100



3D VIEW FOR REFERENCE
OPTIONAL CYCLE STAND
SCALE 0.100

Third Angle Projection

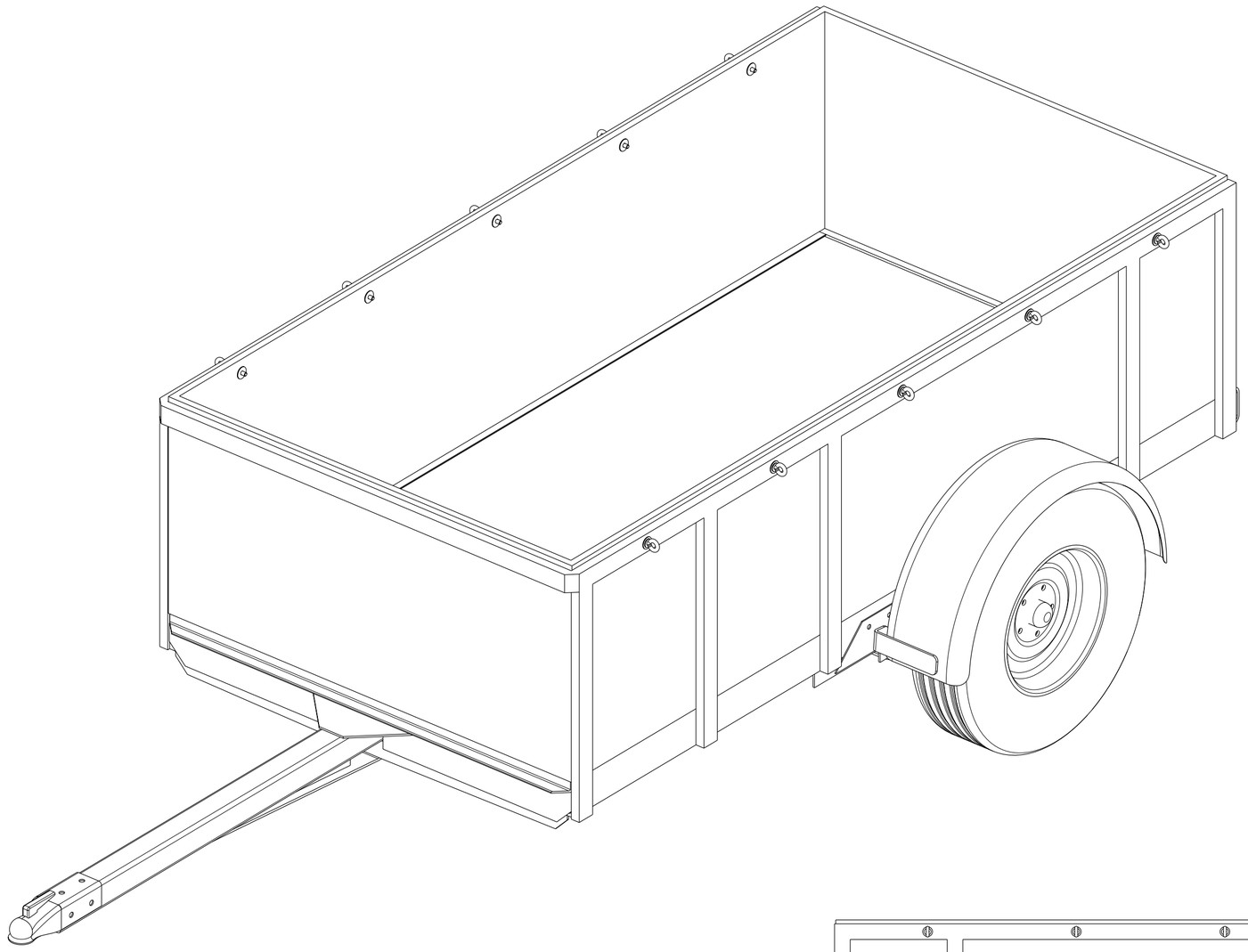
C

4x8 UTILITY TRAILER			REV: 03
SMu48D35C-P2	INCH	SHEET: 16 OF 18	

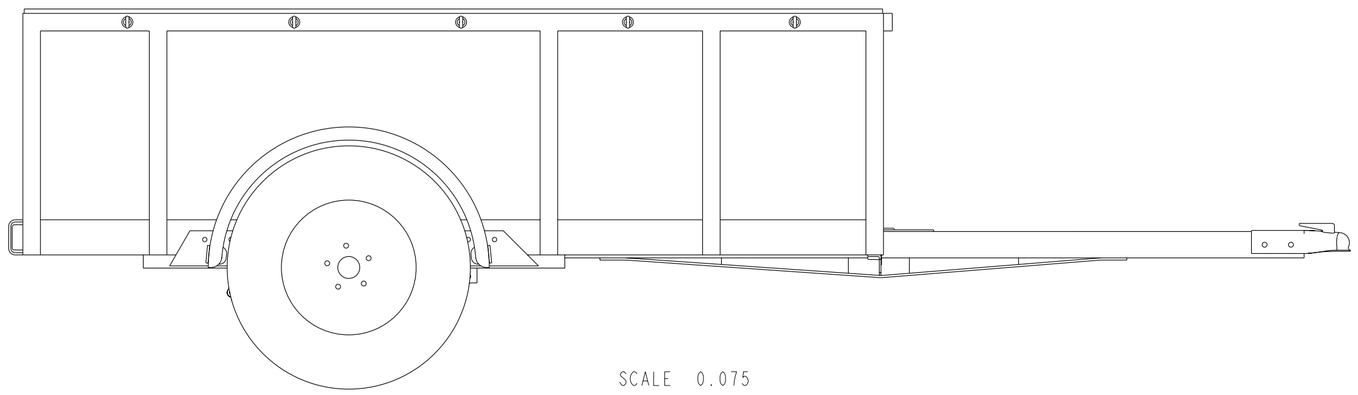
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Copyright 2003. All rights reserved.

MechanicalElements.com



SCALE 0.100



SCALE 0.075

Third Angle Projection

C

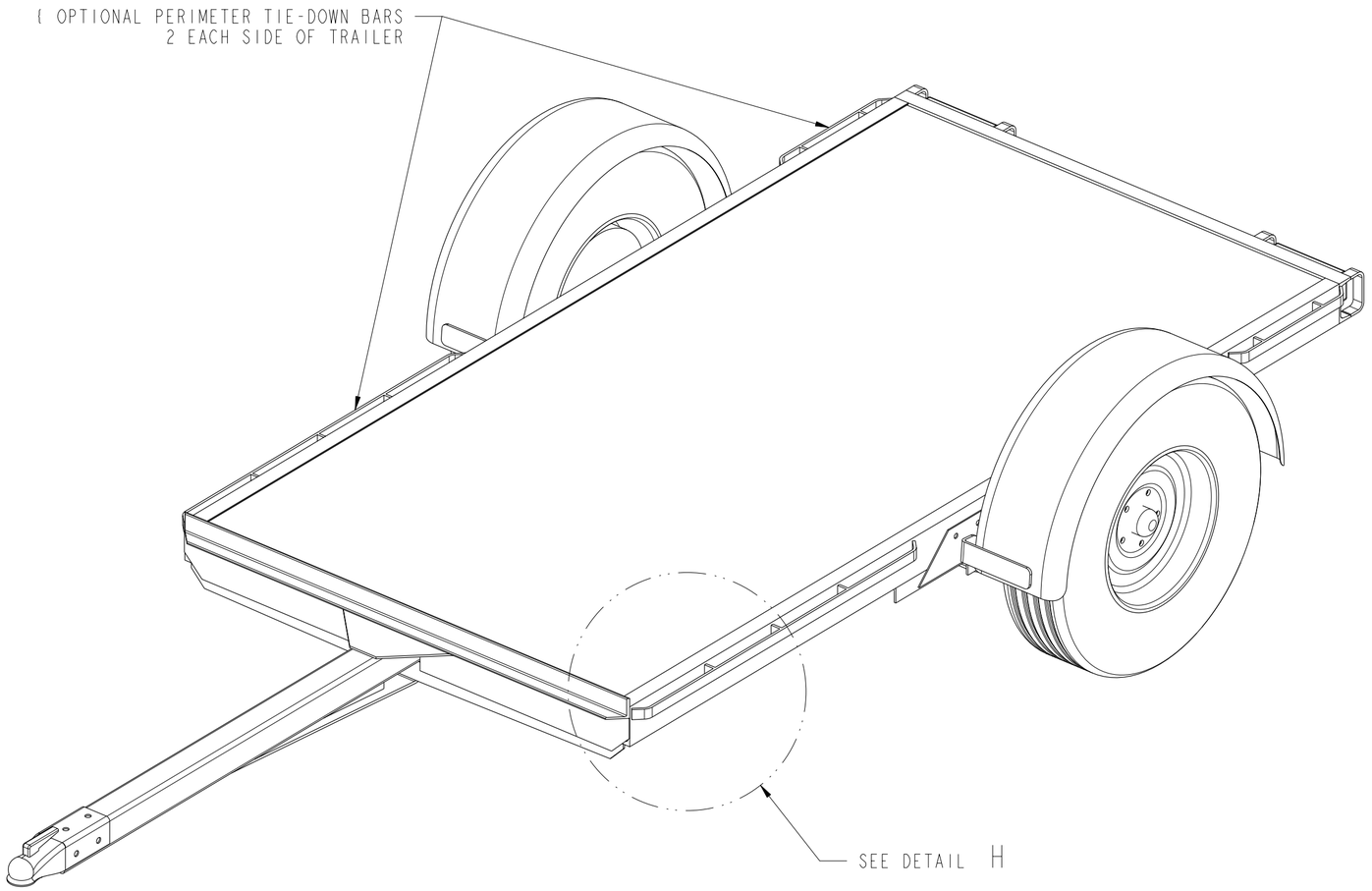
4x8 UTILITY TRAILER

REV: 03

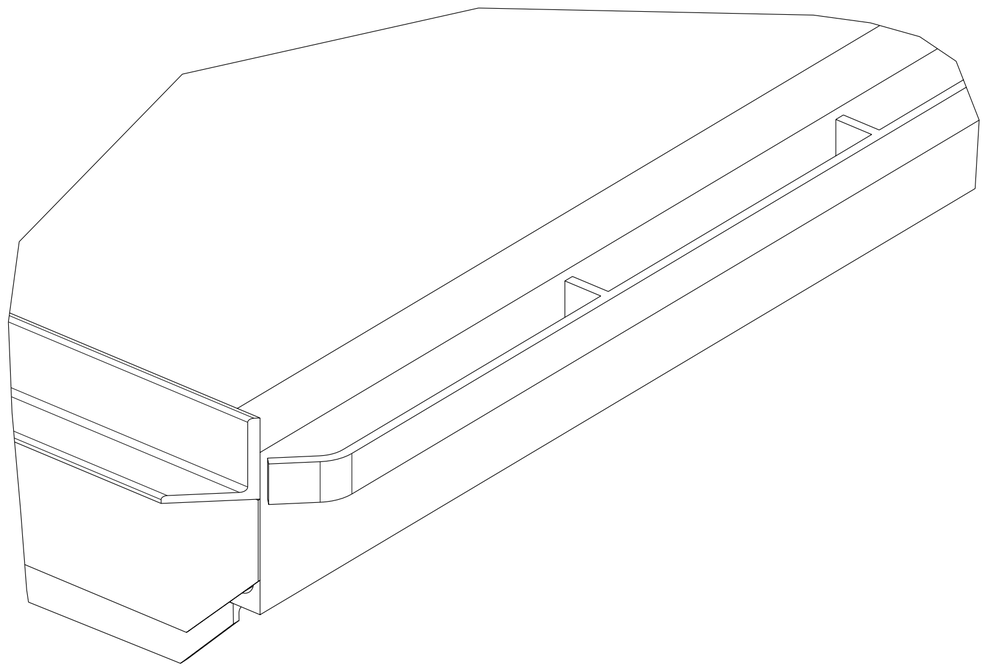
SMu48D35C-P2 | INCH | SHEET: 17 OF 18

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

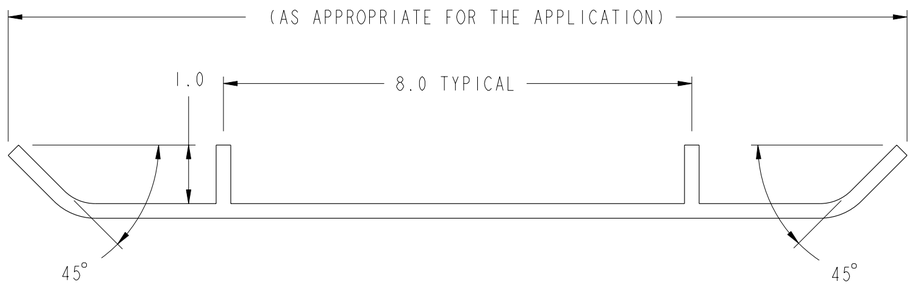
Copyright 2003. All rights reserved. MechanicalElements.com



3D VIEW FOR REFERENCE
SCALE 0.100



DETAIL H
SCALE 0.400



OPTIONAL TIE-DOWN BAR
VARY SIZE TO FIT INDIVIDUAL REQUIREMENTS
DIMENSIONS ARE AS SHOWN FOR REAR BAR
SCALE 0.500

Third Angle Projection

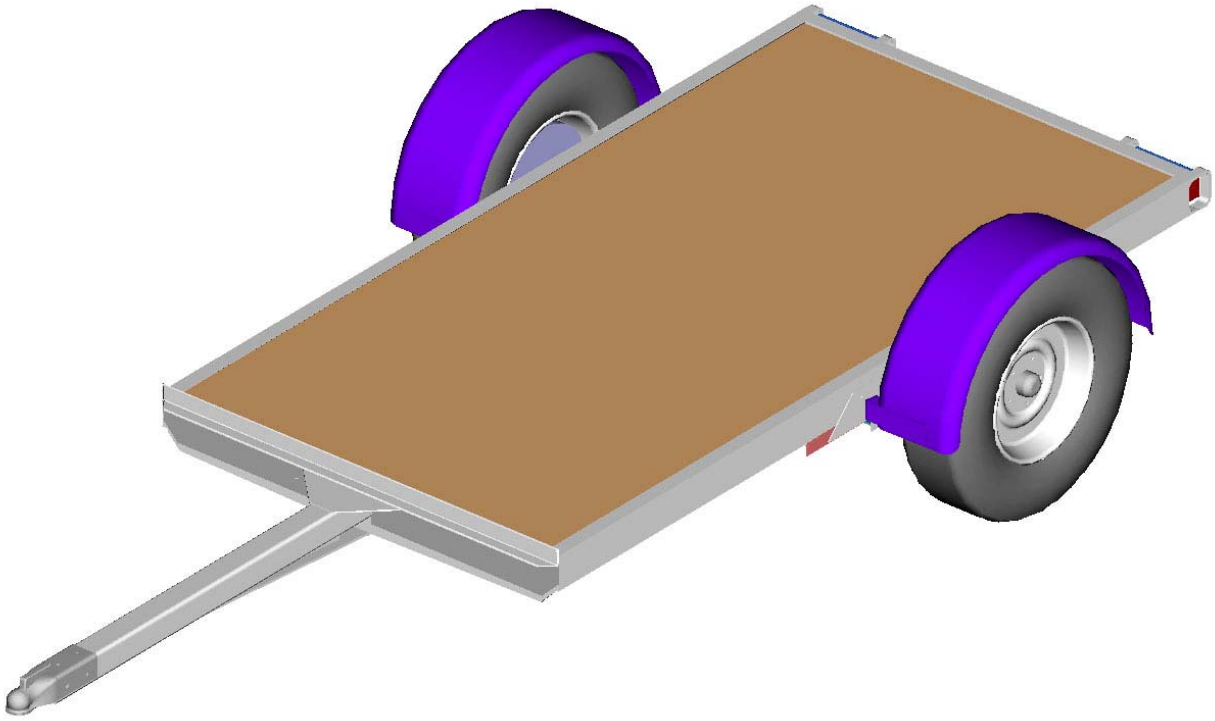
C

4x8 UTILITY TRAILER		REV: 03
SMu48D35C-P2	INCH	SHEET: 18 OF 18

Copyright 2003. All rights reserved.
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
MechanicalElements.com

4’x8’ Utility Trailer

JoeBlack_us



Construction Instructions

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

4 x 8 Utility Trailer Construction Instructions

This trailer is designed specifically as a heavy-duty, utility trailer with a low profile bed and options for versatility. The design incorporates strength in the main frame rather than requiring sides – even short sides – to give adequate strength. This trailer is designed tough for long, faithful service – though it may be a little heavier than some. This approach allows the trailer to be used in numerous ways for maximum utility and versatility.

Your success with the trailer is dependent on the care given in construction – including materials used, construction techniques and assembly methods. If you build it well, it will perform well. Load capacity is dependent on the axle, tires, options and proper load application. The specified capacity does not include capabilities of purchased parts like the hitch, chain, axle, tires, etc.. Do not exceed manufacturer limits.

As a reminder, these plans are for individual use only. Any use of these plans for resale or for producing products for sale is prohibited. Licensing for production and/or resale is available on request. Intellectual property rights for all materials are reserved. We thank you again for honoring these terms.

We truly hope you will enjoy your trailer, and to help ensure that, we have included a section of **Towing Tips** at the end. Please use caution and proper safety equipment while building and using the trailer.

Components Required:

- **Axle Assembly:**

  Axle with spring centers at 48". Several variations are available. The axle you choose should fit your particular application and the vehicle you will be towing it with. The following items must be considered when choosing an axle:

  - Axle Capacity – This trailer design will accommodate a load capacity of up to 3500 lbs. Typical available axles are 2000 lbs and 3500 lbs. Choose one applicable to your requirements. This will determine how much weight your trailer can carry.
  - Straight or Drop axle – this will determine, in part, the bed height. A drop axle will lower the trailer 4" from the straight axle. If you are pulling it with a truck or other high clearance vehicle, the straight axle will probably match better. If you will be pulling with a car or minivan, the drop axle may be a better choice. Also consider loading the trailer – if ramps are used to roll things on and off, the drop axle and lower bed may be better.
  - Underslung or Overslung Springs – this will also effect trailer height – overslung is higher. We recommend underslung springs for better towing stability.
  - Spring Type and Length – Typical trailer leaf springs are available in "Slipper" and "Eye" styles. We recommend the eye style because they make less noise and move some with a load. It can be argued that they help stability with a single axle arrangement. Springs come in various sizes or lengths (distance from eye to eye). We recommend longer springs for a softer ride. The 27" eye to eye spring length is shown. This trailer is not designed for coil or pneumatic springs.
  - With or Without Brakes – this will effect your stopping distance. If you carry heavy loads, particularly with a lighter vehicle, we recommend using brakes. Next choose Hydraulic or Electric brakes. Electric is more common, and easier to adapt to other vehicles. Research this topic if you need more info. Some states don't allow surge hydraulic.

  Axles can be purchased from Rigid Hitch, Northern, or many other places.

  The axle shown in these instructions is Rigid Hitch # M-D3548-E – 3500#, 4" Drop axle, 27" springs centered and underslung at 48" with electric brakes. This comes with all mounting hardware required.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- **Wheels and Tires** – these must match the axle bolt pattern. Specific trailer wheels and tires are usually available with the axles, but another option is automotive parts. Most axles match an auto bolt pattern (like a Ford 5-bolt) so common rims and tires can be used. For a great look, nice wheels can be purchased from a scrap yard and standard tires can be mounted. Be sure the load rating of the tires matches the load you expect. Also, if wheels and tires for the trailer match those of the tow vehicle, an additional spare may not be necessary.
- **Trailer Fenders** – we recommend heavy-duty fenders like the Rigid Hitch #8433. Fenders come in different sizes, configurations and materials. Choose plastic or composite for harsh weather conditions. (Though you'll have to find a different way to mount them.) The fenders must accommodate the tire size and width. Check to see if your state requires fenders.
- **Trailer Ball Coupler** – must fit the ball size you use. We recommend a 2" ball and class IV receiver for a 3500 lb trailer. To mount on this trailer, the coupler must accept a 3" square tube. Rigid Hitch part # 22-300 is pictured in these instructions.
- **Safety Chains** – are required in most states for trailers over a certain size or weight. Generally, we recommend safety chains. Rigid Hitch part # 51 will be adequate.
- **Lights, Wiring and Electric Connector** – these items will depend on taste, choice of brakes, and connector type. For lights, the Rigid Hitch parts # 3504 (left) and #3554(right) are water-resistant and will nest in the rear channel of the trailer. Side marker lights (if needed, depending on state laws and your preference), wiring and connectors, must also be selected. We suggest a liberal wire size and length. It can help avoid future problems.
- **Optional Equipment**:
    - Tongue Jack and/or Swivel Wheel – to help in loading the trailer and moving it when not attached to the vehicle. Rigid Hitch # TJD-125 will fit most applications with this trailer. It will jack up the tongue, roll around, and snap up along side the tongue tube when the trailer is in tow.
    - Hitch handle – to lift tongue up to the hitch – not of much use with a heavy trailer or load.
    - Toolbox – pictured in some views. Many varieties exist from vendors like Rubbermaid, and can be found at stores like K-Mart or Wal-Mart.
    - Trailer Sides – pictured in some views of this trailer – may be temporary or permanent.

Materials:

- Steel
    - 4" x 5.4 lb. C-Channel
        - 2 @ 96" – main rail channels.
        - 1 @ 50.5" – rear bed bumper channel.
    - 2 1/2" x 1 1/2" x 3/16" Angle
        - 5 @ 50.14" – cross members.
    - 2" x 1 1/2" x 3/16" Angle
        - 1 @ 50.5" – trailer bed front.
        - 2 @ 18" – rear angle braces.
        - 1 @ 10" – bed support angles.
        - 1 @ 50.5" – bent front angle.
        - 2 @ 48" – axle spring mount angle.
    - 3" x 3" x 3/16" Square Tube
        - 1 @ 96" – tongue tube.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- 2 1/2” x 1/4” Flat Stock
  - 1 @ 60” – tongue stiffener beam.
  - 2 @ 12.5 – tongue stiffener gussets.
  - 4 @ 11” – Fender mounting brackets.
- 4” x 1/8” Flat Stock
  - 2 @ 42” – axle spring mount bolt plates.
  - 2 @ 23.75” – front fascia.
- 6” x 3/16” Flat Stock
  - 4 @ 6” x 6” x 45° – frame gussets.
  - 1 @ 15” – tongue gusset.
- 1” x 1/4” Flat Stock or 1” x 3/16” Flat Stock
  - 4 @ 7” – optional tail light protectors – not needed with optional hinged tailgate.

- Bed:
  - 4 x 8 x 3/4” Plywood Decking – 1 sheet – consider grade and treatment.
- 1/2" – 20 x 1.25” Grade 8 Bolts with locknuts and washers – 6 – for securing axle assemblies.
- 3/8" – 18 x 1 1/2” Carriage Bolts with locknuts and washers – 20 – for securing plywood decking.
- 1/2" – 20 x 4” Grade 8 Bolts with locknuts and washers – 4 – for securing hitch coupler.
- Wheels, Tires and Lugnuts – many sizes and options available - 14” or 15” wheels - a variety of tire sizes will work. 215-70-R15 tires are shown. Be sure to match load requirements.
- Paint and/or other finishing supplies (depending on finish desired)
- Ramp Option:
  - 3/4” x 3/4” x 1/8” Angle – 2 @ 96” – under trailer ramp storage support angles.
  - 2 1/2” x 1/4” Flat Stock
    - 2 @ 90” – ramp side stiffener.
    - 2 @ 5.25” – ramp catch plate ends.
  - 4” x 1/8” Flat Stock
    - 1 @ 23.75” – ramp catch plate.
  - 2x4 or 2x6 x 8’ boards – 3 – for wood ramp core.
  - 4 x 8 x ½” Plywood – 1 sheet – for wood ramp core.
  - 1/2" x 4” steel rod – 2 – for ramp catch plate.
  - 48 #8 x 2” wood screws.
- Sides Option: will depend on your preferences, side height, top or no top, gate or door configuration, permanent or removable, etc.. See drawings for more information.

  ** Due to the vast number of different requirements for sides, the plans show several options, but materials required to build the sides are not included in this list. However, sides shown in drawings are made from 2” x 1” x 1/8” Rectangular Steel Tube and 2” x 1.5” x 3/16” Angle for the framing. 1/2" plywood is used inside.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Tools Required:

- Saw, to cut steel (circular saw may be used with a metal cutting abrasive blade).
- Saw, to cut plywood and wood spacers (if applicable).
- Welder capable of welding steel at 1/4" thick.
- Hand grinder – for grinding welds and fitting metal pieces.
- Adequate Drill and drill bits for 1/4"- 5/8" for wood and steel. See drawings.
- C-clamps (many, varying sizes).
- Straight edge (min 48").
- Square and Tape measure.
- Wrenches, pliers, screwdrivers, Hammer, files and other common hand tools.

Component Suppliers:

- **Rigid Hitch Inc**. 3301 W Burnsville Pkwy.
  Burnsville, MN 55337-4290
  Phone: 800-624-7630 or (952) 895-5001

  We like Rigid Hitch (even though they don't have a web site) because they carry higher quality components. They might be a little more expensive and they'll probably refer you to a dealer.

- **Northern Tool & Equipment** Phone: 800-221-0516
  http://www.northerntool.com/

Abbey Trailers Ltd
199-201 Abbey Street
Derby
Derbyshire
DE22 3ST
01332 348630

AL-KO Kober Ltd
South Warwickshire Business Park
Kineton Road
Southam
Warwickshire
CV47 0AL
01926 818500
http://www.al-ko.co.uk/

- **Search the Internet.** There are lots of places that sell trailer parts and accessories on line.
- **Check Local Sources.** Most cities and towns have a local source for trailer parts and accessories. Check local listings. This is a great way to see things prior to purchase.

Utility Trailer Construction Instructions:

1. **Locate and Print the trailer drawing sheets.**
   – If you ordered complete printed plans, the drawing sheets are included in the package.
   – If you received plans electronically, the same drawings are provided in PDF format:

   `4x8utrailer-drawings.pdf`

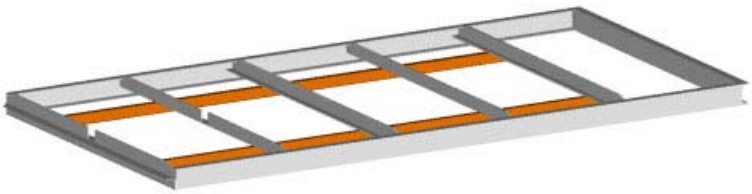
   Print the drawings at the desired size (the Acrobat Reader gives options for print size or to shrink large pages). Contact a local Kinko's or similar print shop if you want a larger size and need assistance printing it. (Max size is C, 22"x17")

2. **Look through these instructions and the drawings** to determine which options you wish to include on your trailer, then get the appropriate components and materials.

3. **Layout the trailer outer 4 members of the frame.** Layout the 4 perimeter sections (2 c-channel sides, c-channel back and angle front) shown on Drawing Pages 3 & 4 for the main trailer frame. It may be easiest to lay this out upside down since the "top" is all at one level. Use clamps and straps to assure the parts will not move. It is often a good idea to clamp a few diagonals across the frame to hold position. It is also good to check that the measurement from opposite corners is equal – this will validate squareness.

4. **Tack weld the 4 corners** then check squareness and flatness again. Make any adjustments necessary. It is critical at this point that squareness is established as a sloppy start will yield a sloppy finish, and this will effect how well the trailer tows.

5. **Lay in the cross members.** Use 1.25" thick boards or steel under the cross members (with the main trailer frame still upside down) as shown in the figure below. With the spacers, the cross members will all line-up vertically and will all lay flat to the bed. Make sure to notch the 2 cross members for the tongue as shown on Drawing Pages 3 & 4.



5x10 Trailer frame shown. 4x8 trailer frame similar (see drawings).

6. **Tack weld the cross members in place.** Keep checking squareness as you go because welds tend to "pull" as they cool and you need to keep the frame square.

7. **Layout and tack in the angle braces and gussets** shown on Drawing Pages 4 & 5. Again, keep checking squareness as you go.

8. **Tack weld in the bed support angles** shown on Drawing Page 5. Use the same spacers used with setting the cross members to assure a flat bed.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

9. **Lay in the tongue tube.** The tongue tube is set in place in the notches cut in the front two cross members as shown on Drawing Pages 4 & 6. It must be square with the trailer frame for stable towing. This can then be tacked in place.

10. **Lay in the bent front angle.** This angle can be pre-bent if you have the equipment, but it can also be tacked in place over the tongue then bent down at each end (using large c-clamps) then tacked in place. When the final weld is done, the heat from the weld will stress relieve it. Some grinding on the front cross member may be necessary to get a good fit. On Drawing Page 6 a little interference can be seen in the front view. Carefully grinding the front cross member will make a great fit. Another view of this member is shown on Drawing Page 4.

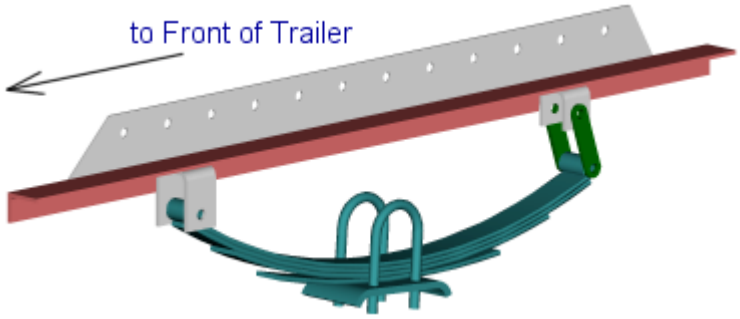
11. **Lay in the tongue stiffener and gussets.** The tongue stiffener can also be bent and welded in place as done with the bent front angle. For a 2000# capacity trailer, this member is not necessary. For the 3500# trailers, this will stiffen the tongue to better support a front loaded trailer.

12. **Optional: Add the front fascia plates.** Add the front fascia plates shown on Drawing Page 7 on either side of the tongue tube. These plates are primarily for aesthetics but will also stiffen the front and help keep "crud" from the tow vehicle out from under the trailer. These can extend the life of the trailer by protecting it from rust in the hard-to-paint corners.

13. **Double check Squareness.** At this point, all the structural members of the main trailer should be tacked in place. If it is square and flat to your liking you are ready to weld it all together. If there are tweaks to be made, do it now.

14. **Completely weld the trailer frame together.** Start in the corners, and stitch in a few areas. Do not complete any one full weld until you have added several tacks to all the joints – especially the angle braces and gussets. Check squareness again. Then complete the welding. By doing a little at a time as you go around, the likelihood of creating a "pull" out of square is greatly reduced. The extra effort will be well worth it.

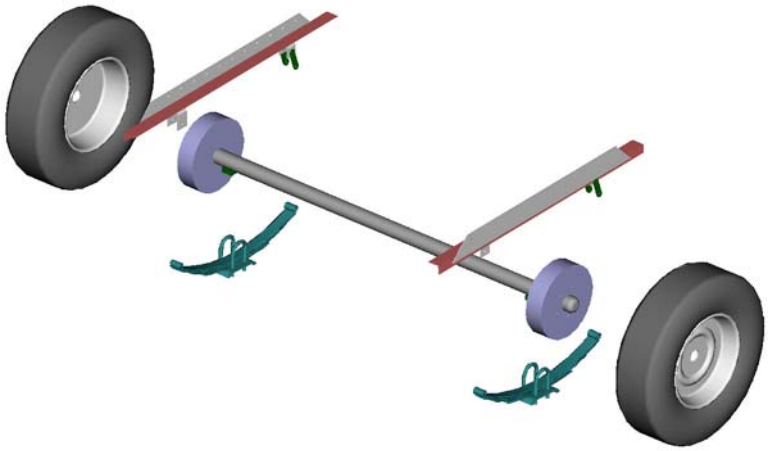
15. **Construct the Axle Spring Mounts.** The left side axle spring mount is shown on Drawing Page 9. You will need a right and a left. Care should be taken to make sure the holes line up as shown. The spring anchors shown on the drawing should come with the axle and spring hardware. We recommend that the spring mounts and springs be assembled together for tack welding on to the angle iron to assure proper alignment. Disassemble to complete the welds. Be sure to cut the bolt clearance area before welding the rear bracket on.



These spring mounts will be used to attach the axle to the trailer frame. The axle spring mounts can then be moved fore or aft on the frame to better balance the trailers load. In this way the trailer can be balanced to tow stable regardless of the load distribution (front to back) on the bed. If the movable axle option is not desired, the line of holes in the plate can be omitted, then the axle mounts can be welded to the trailer frame.

16. **Build the Axle.** Assemble the axle components including the axle spring mounts built in the previous step as shown in on the Drawing Page 9 and in the picture below. The tires and wheels must also be assembled. (Note: because the straight axles are typically slightly narrower, if you are using wide tires with a straight axle, you may need to get different rims (automotive rear drive) or shims to move the wheels away from the axle spring mounts.)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



17. **Assemble the fenders to the axle spring mounts.** With the tires and wheels on the axle, measure for placement of the fenders. Clamp the fenders and mounting brackets to the axle spring mounts as shown on Drawing Page 9. Make sure to allow a few inches of suspension travel – 3" to 4" is adequate. We recommend you set-up and clamp both fenders and mounting brackets prior to welding so they can be set to match. Tack them in place then disassemble items (like tires) necessary to gain access for a full weld. (Note: if you think you will ever need to remove the fenders, you can bolt them instead. It won't be as strong or as sturdy, but it will make removal much easier. Also, if you are concerned about splashing from the tires to your load, you can fill the space between the fender and the axle spring mounts with sheetmetal or wood.)

18. **Mount the axle assembly to the trailer frame.** Hopefully you have a good way of managing heavy objects, because the axle and the trailer frame must now be assembled as shown on the Drawing Page 10.
Measure carefully from the center of the tongue tube where the hitch will go diagonally to the center of the front spring bolts. This dimension must be the same for both sides. The dimension shown on the drawing is a recommended position that will be good for most applications; however, one of the great features of this trailer is the ability to move the axle as required for the load. When the axle assembly is in the right place, secure it to the frame with clamps.

19. **Drill the first axle mounting holes.** With the axle assembly secured in the proper position, drill through the 2 holes indicated on the Drawing Page 10 already in the axle spring mounts, through the c-channel web of the frame. These holes will be the base to measure from for the rest.

20. **Drill the remaining axle mounting holes.** After drilling the first holes, remove the axle assembly and re-drill the 2 holes slightly larger – depending on the accuracy used in drilling the first set and the holes in the axle spring mounts, you may wish to drill the holes at 9/16" (recommended) or 5/8". (This help the bolts go in later when the axle is moved.) Measure and drill the remaining 5 axle mounting holes in the c-channels of the trailer frame. This step is not necessary if you don't ever wish to change the axle position. Some disassembly may be required.

    The movable axle option is beneficial for carrying widely varying loads, and for trailers that can adapt to specific load requirements. Adjust the axle position so that 12% - 20% of the load is carried by the tongue. Be sure not to exceed manufactures load ratings for the hitch, ball or receiver.

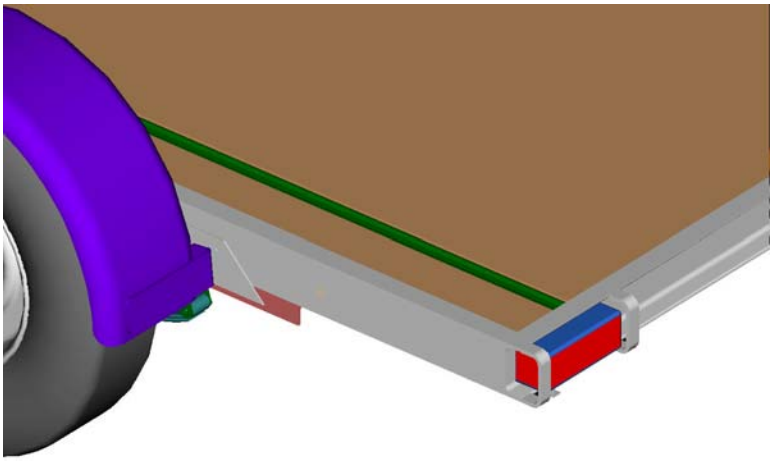
21. **Position and mount the axle assembly.** Reposition the axle assembly at the start location as shown on the Drawing Pages 10 & 11 (or other position if desired) then secure with bolts and locknuts. You should be able to use 3 bolts on each side in most every possible axle position. The possible axle positions are now in 3 inch increments forward and back. We strongly recommend using the plastic insert lock nuts on all fasteners of a critical nature. Vibrations from the road have loosened too many bolts to take a chance.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

22. **Attach the ball coupler.** This is most easily done by clamping the coupler in place, then drilling through the holes in the coupler through the tongue tube wall. Once the holes are drilled, insert the mounting bolts and tighten. Again, use locknuts.

23. **Optional: Mount the Tongue Jack and/or Swivel Wheel.** If you have chosen to use a tongue jack or swivel wheel, mount it to the tongue tube. Most of these devises have bolts or plates that wrap around the tube. Make sure yours can fit a 3" tube. Drilling should not be required.

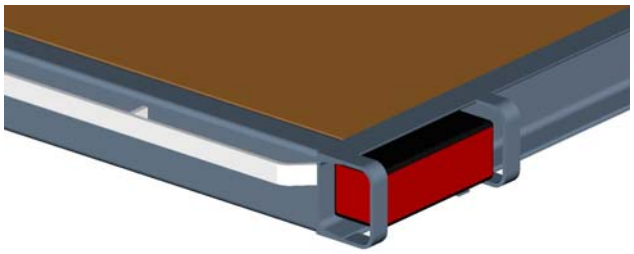
24. **Wire the lights and brakes (if used).** Check the laws of your state to determine requirements to be met for lighting and brakes. Get appropriate lights (running lights if necessary) then wire the lights, connectors and brakes (if used). Follow the manufacturer instructions. The picture below shows the mounting of the taillight from Rigid Hitch indicated above.



25. **Wire the electrical connector at the hitch.** Choose a connector for your options (electric brakes, etc.) and to match the tow vehicle. Purchase the connector and wire per manufacturer instructions. We recommend protection on the wires to the connector like a sleeve to avoid damage with use. Secure the sleeve and wires at the trailer tongue. An added welded bracket can be very useful.

26. **Optional: Install the tail light protectors** as shown on Drawing Page 12. The lights may need to be installed to assure proper placement, then removed for welding. Be sure to allow space between the protectors and the lights for installation and service.

27. **Optional: Install Tie-down bars around edges of frame.** Bars in front and behind the wheels can be added to the sides of the trailer frame for tie-down attachment as shown on Drawing Page 17. These offer nice options for tie-down attachment – even with sides, these can come in handy.



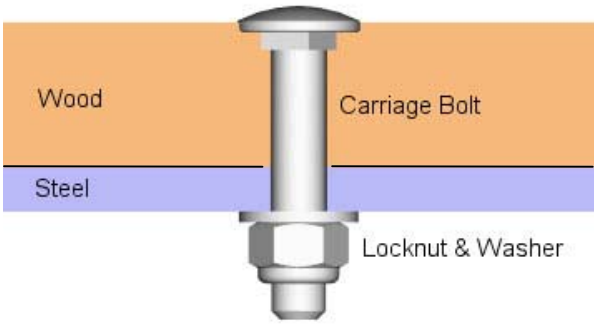
28. **Optional: Install Tie-down hooks or D-rings.** For more versatility, tie-down hooks or D-rings can be installed in strategic locations – both on the bed and/or on the frame – for securing a load. Many choices are available including recessed rings that can be mounted into the deck.

29. **Assemble the trailer deck to the frame.** Some trimming (or slight chamfering) may be required so it will assemble under the lips of the main frame c-channel on the sides. A deck top of 48" wide will slide first under one c-channel, then set on the cross members, then slide back to center (partially under both sides). The overlapping construction allows a low deck while allowing water etc. to

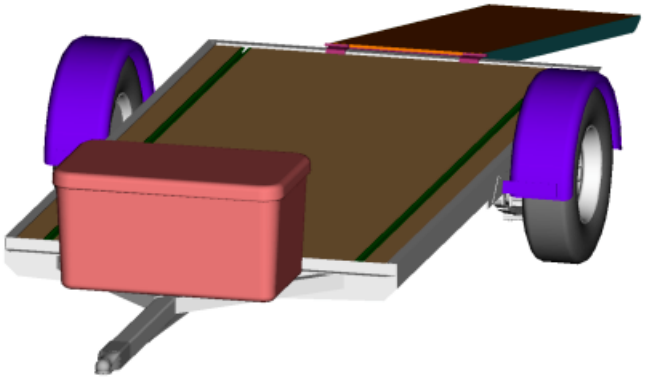
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

escape from the surface. If you build a trailer with closed sides and top in extremely wet conditions, these areas may need sealant to keep moisture from the coming up from the bottom.

Drill through the cross members from underneath and through the wood with a 3/8" drill as needed for each cross member. 3 or 4 places evenly spaced. Use 3/8" carriage bolts to secure the decking to the cross members. Tighten the bolts until the head of the carriage bolt is just sinking into the wood. See the picture below.



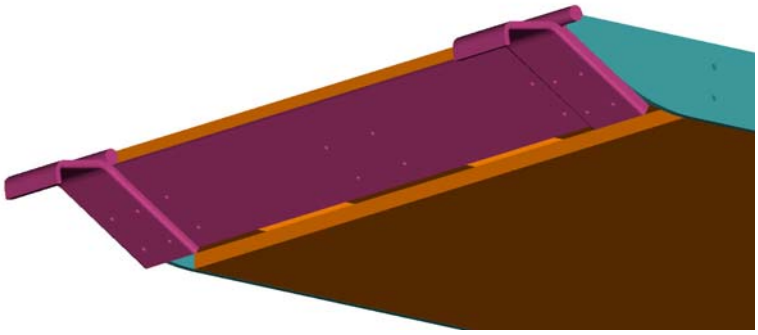
30. **Optional: Attach a tool or storage box.** A tool or storage box can be added and mounted on the front section of the trailer if desired. The picture below shows a mounted box. Boxes for this use can be purchased at numerous variety stores like K-Mart, Wal-Mart, Target, etc.. Rubbermaid and others make weatherproof plastic boxes that will work. Most of these can be fastened by bolting through the bottom to the trailer. For better support, bolt a piece of plywood to the tongue triangle then bolt the box to the wood. To waterproof it, use a little sealant around each bolt.



Trailer shown with optional toolbox and ramp.

31. **Optional: Build the ramp.** Construction details are shown on Drawing Page 13. This ramp is intended for people use, not heavy machinery. It is made of a wood core (2x4's and plywood), steel side stiffeners and a front catch plate. (2x6's can be substituted in the core for more strength (and more weight). 1/8" thick steel can be substituted on the sides for less weight (less strength).) This ramp is designed to be stored under the trailer on the 5' wide models. With the 4x8 trailer, the ramp can be used, but must be stored some other place. The catch plate hooks are designed to grab the back channel of the trailer frame for easy loading and unloading. The picture below highlights the ramp catch plate, the guide pins and the hooks. The holes in the plate allow easy attachment to the rest of the ramp. For greater strength, weld the catch plate to the side stiffeners. **Note:** If this ramp is used with a flush top deck option, the decking (trailer floor) must leave a little space, between the back channel and the wood so the hooks can get around the channel. The hooks on the catch plate keep the ramp from sliding off the back of the trailer when it is being used.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



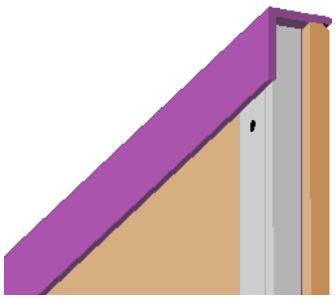
32. **Optional: Build trailer sides.** If sides are desired, they can be added in a number of different ways. If you need sides, consider the height and strength required. Also consider if the sides need to be permanent or if they must be removable. If removable, consider the process for taking them on and off. Also consider weather proofing of the interior if that is desired.

    In the plans several variations for sides are shown, however, because of varying needs for sides, only a few specifics are given and exact materials are not listed. If sides or a top are desired, use these instructions as recommendations, then plan and incorporate sides as desired. In particular, we recommend completing the main trailer then measuring and fitting sides per your needs.

    To add sides, measure and build from the completed trailer frame. Take note of how the tailgate or back door will interface with the sides. Weld (or bolt) the uprights at the corners to give stability. We recommend welding if the sides aren't removable. Be aware of the axle and its positions when locating the uprights – they may limit axle movement. Sides shown in the drawings are made from 2" x 1" x 1/8" rectangular steel tubing and 2" x 1.5" x 3/16" angle, with plywood as an inside liner. Optionally, the framing can be made from any materials desired. Strength and use must be considered when choosing materials. Triangulation my also be considered and used for rigidity.

    Use the included drawings as reference to formulate a plan. There are several concepts presented to give ideas and some dimensions are shown only for reference. Since you are building your own trailer, you are obviously smarter than average in this area, so figuring out sides with the help of the included drawings will be fairly easy.

    Depending on what you want, the frame may overlap the plywood or not. The plywood may want to be at the same height as the frame, or extend slightly above. If a top is desired, an angle iron piece can be used over the top edge of the plywood to make a secure mounting surface for sealing (see picture). Length of the uprights may be different depending on the way the top is handled.



    For aerodynamic efficiency, add the half-pipes to the front (as shown in one drawing view). These can make a significant aerodynamic effect – especially since the trailer will be immediately behind the tow vehicle. Rounding just the edges can reduce wind noise and increase efficiency.

    For access to the inside space, consider a gate or door and whether that should slide in, hinge to

the right, hinge to the left, split in the center, bolt-on, etc.. When considering a gate or door, make sure the sides accommodate its attachment. Latches and hinges of many varieties are available to meet your needs. Shop around to choose the best approach for you.

If you use the included option for the hinged tailgate/ramp, the sides will need to accommodate a connection from the lifted gate to the sides to secure it for traveling. That can be as simple as a couple of holes to allow a pad lock to be latched through.

33. **Optional: Attach a spare tire.** There are two easy locations for the spare tire (if you wish to have one). The first is on the tongue – there are several bolt-on products available to accomplish this. The second location is under the back of the trailer.

    Another option for a spare is to have the trailer wheels and tires match those of the tow vehicle. That way, if the tow vehicle carries a full size spare, it could be used for either the trailer of the tow vehicle should you need one.

34. **Paint and finish the trailer** to reflect your own personality. We strongly recommend taking the time and effort to protect your investment. Prepare the steel by sandblasting if possible, then use a good primer and paint. We recommend 2-part epoxy based primer available at most industrial paint centers. (Powder-coating the frame can be even better than paint, but requires special equipment. Usually, it is fairly economical to have done.) Use an industrial outdoor rated primer and paint on the wood parts – house paint will not usually last very long. Consider where the trailer will be used when making your choices about paints.

35. **Hook it up and take it for a spin! Enjoy it, you've earned it!!**

Options:

Several options are included with these plans. Things like motorcycle stands, various tie-down options, multiple sides ideas and ramp options. Consider your needs and incorporate the options that best fill those needs. You will likely have the trailer for a long time, so take a moment and think about what options will be best. You'll be glad you did.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Towing Tips:

- Secure all bolts and fasteners in vibration resistant ways – use things like Nyloc nuts, Loc-tite, cotter keys or wired nuts. Be sure the methods are appropriate for the situation.
- Check bolts, fasteners, lights and brakes prior to towing.
- Inspect the trailer regularly to assure there are no cracked welds, loose bolts, or other issues that can create problems.
- Inspect the spare tire (if used) to be sure it is inflated properly and in good condition.
- Double check the hitch to be sure it is connected securely.
- Use tow chains and secure them to a sturdy part of the hitch.
- For stability, distribute the load on the trailer evenly – not disproportionate on one side or the other.
- Again, for stability, the trailer load should be such that 10% - 20% of the load is on the tongue.
- If you have a problem with swaying or instability, re-distribute the load. Most instability issues come from improper trailer assembly (things not lined up or square) or from improper load distribution.
- Don't overload the trailer. Also, be aware of the towing limits of the pulling vehicle and the hitch.
- Don't overload the tires. Tires on trailers often have a lower capacity than the axle they are mounted on. This is a great way to have a blow-out.
- Secure the load so it won't shift or move in transit. Keeping a low center of gravity is also good.
- Double check tie-downs, tarps, ropes, etc. to be sure nothing will be "flapping in the breeze" or dragging the ground.
- Set tire pressure appropriate for the load. When is traveling empty, tire pressure may be reduced to 10 or 15 psi. This will allow the tires to absorb bumps and other anomalies, keep the trailer from bouncing around, and shaking the tow vehicle. Full tire inflation pressure is needed for a full load.
- If the trailer has high sides or a tall load, avoid traveling when high cross winds are present.
- Allow added distance for acceleration and braking. Even if the trailer has brakes, it can take more distance to stop.
- Allow more girth around corners – take the corners wide – to avoid hitting the trailer tires on a curb, because the trailer takes a shorter radius than the tow vehicle. Also, the longer the trailer, the more space it takes.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A Guide to Building Outdoor Stairs

Building a stairway can be one of the most intimidating tasks any builder–amateur or professional–tackles. But an outdoor stairway is generally not a difficult project, as long as it is planned and executed carefully. This document covers building procedures for a straight-run utility stairway, typically used on porches and decks.

Local building codes regulate the width and slope of a staircase, as well as how the assembly is supported and braced, how the landing is built and whether railings are required. ALWAYS CHECK WITH YOUR LOCAL BUILDING DEPARTMENT BEFORE DESIGNING A STAIRWAY, AND FOLLOW ALL LOCAL CODES.

The following instructions are intended as general guidelines only, and local requirements should be your primary guide.

In this document you will find information about:

- Stair-Building Terms
- Designing Your Stairs
- Building Your Stairs

TOOLS AND MATERIALS		
2x10 Stringers	Hex Bolts	Hammer
1x8 Risers	16d Galvanized Nails	Carpenter's Square
5/4" or 2" Tread Material	8d Galvanized Nails	Measuring Tape
2x6 Pressure-Treated Cleat	4x4 Posts	Adjustable Wrench
Angle Iron	2" Railing Material	Joist Hangers
Anchor Bolts	Baluster Material	

STEP 1

STAIR BUILDING TERMS

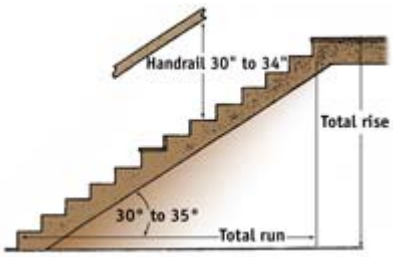


FIG. 1 - How a stairway is built depends primarily on the total rise–the vertical dimension from the upper floor to the lower floor. The total run–the horizontal length of the stair assembly–depends on the slope of the stairway, which is determined by building codes. From the Sunset book, *Basic*

- There are five basic design elements you'll need to consider when planning outdoor stairs:
- **The Total Run** (Fig. 1) is the total horizontal distance covered by the staircase, from the edge of the upper floor (porch or deck) to the edge of the staircase where it rests on the landing.
- **The Total Rise** (Fig. 1) is the total vertical distance from the surface of the landing to a point level with the surface of the upper floor (Note: You can't find the rise simply by measuring straight down from the upper floor because the ground directly below may not be level with the landing).
- **Run** (Fig. 2) is the horizontal distance from the leading edge of one tread to the leading edge of the next tread.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Carpentry Illustrated, © Sunset Publishing Corporation.

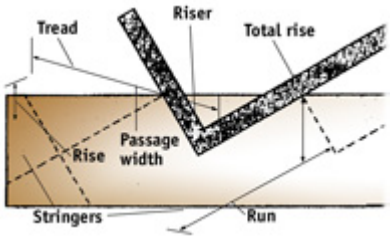


FIG. 2 - The components of a stairway, with basic stair-building terms. From the Sunset book, *Decks*, © Sunset Publishing Corporation

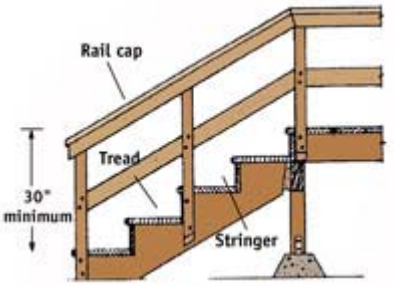


FIG. 3 - The components of a railing. From the Sunset book, *Decks*, © Sunset Publishing Corporation

- **Rise** (Fig. 2) is the vertical distance from the surface of one tread to the surface of the next tread.
- **Passage Width** (Fig. 2) is the width of the stairway.
- The ratio of the total rise to total run (or rise to run) determines the slope of the stairway. As a rule, that slope should be between 30 degrees and 35 degrees; an outdoor stairway may be slightly shallower but should not be steeper. The ideal riser height is 7" with an 11" run–which also works out well with standard lumber widths–but you may have to vary the proportions somewhat to make the height of each step work out evenly between the landing and the upper floor.
- The passage width can also vary, depending on how heavily you expect the stairs to be used. As a rule, 36" is the minimum; 48" is better for a single person, and you may want to go to 60" to allow room for two people to pass comfortably.
- A stairway consists of four basic components:
- **Stringers** (Fig. 2) are the sloped members that support the stairway. 2x10s are generally allowed for stairs with four treads or fewer, but 2x12s are sturdier.
- In most cases, you'll need good quality material with no large knots, either pressure treated or cut from heart redwood or cedar, to resist decay. Stringers should be placed no more than 24" apart if the treads will be 5/4 material or 36" apart for 2"-thick lumber.
- **Treads** (Fig. 2) are the horizontal members that you walk on. When building an outdoor stairway, they are typically cut from the same material as the upper floor deck or porch–5/4" pressure-treated pine or 2"-thick lumber.
- **Risers** (Fig. 2) are the vertical members at the back of each tread. 1" surfaced boards (3/4" net thickness) are the most common material used.
- **The Railing Assembly** (Fig. 3) consists of posts, a cap rail and vertical balusters between each post. 4x4 is the most common post material with a 2x4 handrail. Codes regulate the overall height of the railing assembly (usually 30" to 34") and may specify a maximum width for the handrail.

STEP 2 DESIGNING YOUR STAIRS

- To design the stairway, first find the total rise. Divide that number by 7 (the ideal riser height) to find the number of steps. You'll probably have

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

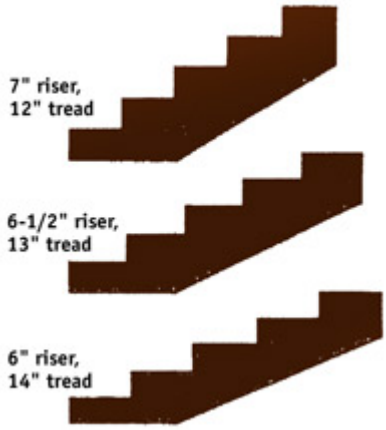


FIG. 4 - Common tread-to-riser ratios. From the Sunset book, *Decks*, © Sunset Publishing Corporation.

a fractional remainder, so round your result up or down to the nearest whole number.

- Then divide the total rise by that number to find the exact height of each riser. For example:

1) Total rise = 40-1/2"

2) 40-1/2" divided by 7" per riser = 5.78 risers

3) Round 5.78 up to 6 risers, then 40-1/2" divided by 6 = 6.75" or 6-3/4" per riser

This document assumes that the total run is not limited, so you can make the assembly as long as you want. Use the following table to determine the width of the treads, depending on your riser height.

Riser Height	Run Width
6"	14"
6-1/4"	13-1/2"
6-1/2"	13"
6-3/4"	12-1/2"
7"	12"
7-1/4"	11-1/2"
7-1/2"	11"

- To find the amount of material needed for risers, simply multiply the number of risers by the passage width. To find the amount of tread material, subtract 1 from the number of risers (you'll need one fewer tread than risers) and multiply by the passage width. Remember to double up if you'll be using two boards for each tread.

- To find the length of the stringers, you'll need a calculator with a square root function. First, find the total run (number of treads multiplied by the width of each tread).

- Then find the square of the total run (total run multiplied by itself) and the square of the total rise and add them together.

- The square root of the result gives you the exact stringer length; round up to the nearest standard lumber length, then multiply by the number of stringers you'll need.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

STEP 3 BUILDING YOUR STAIRS

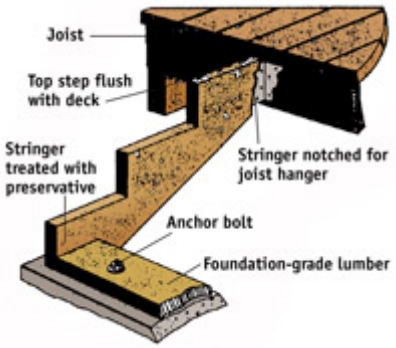


FIG. 6 - Stringers may be hung from the rim joist with a joist hanger so the first step is flush with the deck surface. In this configuration, a piece of pressure-treated lumber is bolted to the landing pad and the stringer is nailed to it with 16d galvanized nails. From the Sunset book, *Decks*, © Sunset Publishing Corporation.

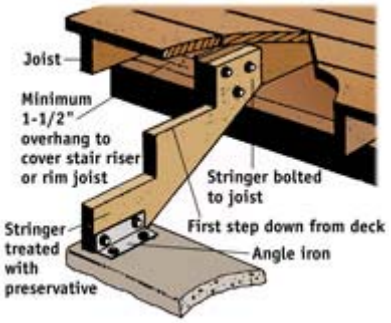


FIG. 7 - The stringer can be bolted to the end of the joist so the first step is one step below the surface of the deck. At the landing pad, the stringer may be fastened to an angle iron (the angle should be galvanized) bolted to the concrete. From the Sunset book, *Decks*, © Sunset Publishing Corporation.

- To build the staircase, first notch the stringers for the treads and risers. Fasten two stair gauges to a carpenter's square at the dimensions of the rise and run (for example, at 6-1/2" on one leg and 13" on the other). Set the square on the stringer so the gauges are flush against the edge and trace the notch along the edge of the square (Fig. 5).

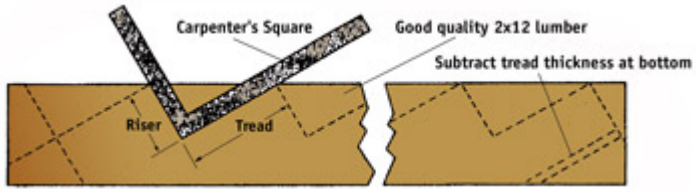


FIG. 5 - Set the carpenter's square on the stringer so the riser and tread dimensions are at the edge, then trace along the square. Move the square to the previous mark and repeat the process. Subtract one tread thickness from the layout at the bottom so the last step is equal in height to the rest. From the Sunset book, *Decks*, © Sunset Publishing Corporation.

- "Step" your way down the stringer, repeating the process until you have laid out the correct number of notches. Use the carpenter's square to lay out the top cut on the stringer. The height of the last riser should be less than the others by an amount equal to the thickness of the tread. That way, when you nail the last tread in place, the step down to the lower floor will be equal to the others.
- You can set the stringer directly on the lower floor (typically a landing pad) and bolt it in place with a piece of angle iron, or bolt a length of pressure-treated 2x6 to the floor and nail the stringer to it.
- If you plan to set the stringer on a 2x6, you may have to notch the bottom of the stringer to allow for that piece.
- Once the stringer is laid out, cut the notches partway only, using a circular saw. Take care not to cut beyond the layout lines. Finish the cuts with a handsaw.
- Once you have one stringer finished, set it in place to make sure it is cut correctly, then use it as a template to lay out your cuts on the other stringers.
- You can hang the stringers to the rim joist with joist hangers (Fig. 6), or bolt them in place to a joist (Fig. 7). If you need to pour a concrete landing pad at the bottom of the stairway, set the stringers in place

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

temporarily and lay out the location of the pad. Pour the pad and set anchor bolts for the angle iron or 2x6 base. Instructions for pouring concrete are in another brochure in this series.

- Once the landing pad is cured, secure the stringers at the top and bottom. Rip the risers to the same width as the height of the riser cut in the stringers. Then cut them to length and nail them to the stringers with 8d galvanized nails.

- Measure the distance from the face of the riser to the edge of the notch cut, then rip the treads to width so they extend 1" to 1-1/8" beyond the edge of the notch. If you're using two boards side by side as treads, rip half the dimension from each board so both will be the same width. Cut the treads to length and nail them to the stringer with 16d galvanized nails.

- To build the railing, first secure 4x4 posts at the top and bottom of the stringer. Notch the posts 1-1/2" deep and bolt them to the sides of the stringers with 1/2x4-1/2 hex bolts, using a level to keep them plumb. Use decay-resistant lumber for the posts. They should be at least long enough to extend 36" above the surface of the treads. Leave them a few inches too long at the top so you can cut them after they are in place.

- Measure from the bottom of the stringer up the posts to the location of the top and bottom rails. The top surface of the upper rail should be 30" to 34" above the tread; the rail should be about 6" above the tread. Lay the railing material against the posts and lay out angled cuts for any rails that will be fastened between the posts.

- Cut the railings to length and toenail them with four 8d galvanized nails. If you'll be using balusters, cut them to length and nail them to the rails. Check local codes for spacing requirements on balusters.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

About bathrooms

Because replacing your bathroom is an operation that will have a lot of influence in your daily live for a few weeks, it is probably not something you will do for pleasure. But think of the result, and it will all be worthwhile. This article will guide you to a relaxing and refreshing bathroom!

Bathroom Planning

It makes a lot of sense to assess the needs of you and your family before you start planning your bathroom. Are you single, living together or having a family with different age groups? All these things matter when you choose your fixtures, storage, flooring and wall coverings.

Families will use a bathroom very intensely at all times of the day. Especially in the morning members of the family might need to use the bathroom at the same time. Young children will appreciate toys they can play with in the bath and stools to stand on when brushing their teeth and all these things will need storage, so plan this carefully.

When you're single or living together, you don't need to worry about storage that much. Get a few smart storage boxes for your toiletries and even the most compact bathroom will look clean and uncluttered. You can opt for more luxurious wall coverings and flooring, because it will get less wear and tear.

Bathroom Design

There are a lot of different styles to be found in bathroom fixtures, so that you can choose the style that reflects the rest your house. In bathrooms, everything is possible, so let your fantasy loose on gleaming taps, funky toilet seats and tiles that make a statement.

Colour is a keynote in the design of your bathroom. Fixtures are available in a lot of colours. Although white goes with most of the styles, if you really want something different, a coloured fixture might be something for you. How about a frosted glass basin with a chrome pedestal or a shower enclosure made of glass bricks? Wood is also a successful material to use in the bathroom.

Not only bath, shower or toilet design or colour have influence on the atmosphere of your bathroom, taps, shower fittings and levers do too. They will really set off your design and take your bathroom to another level. There are a lot of designs available, from Victorian taps and overhead showers to state-of-the-art chrome shower mixers or levers.

Buying a Bathroom

Set a budget for your bathroom: how much can you spend maximum on your fittings? Bear in mind that when you buy at a DIY-shed but can't install the bathroom yourself, that you have to hire somebody to do it for you. Try to get a few good quotes from recommended plumbers before you start the project.

Also make sure you list the possible redecorating costs. The fittings might be the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

first step to your new bathroom, but your walls and flooring will make all the difference. Accessories and storage are the just as important to create the look that you want. Include them in your budget as well.

If you decide to your new fittings in the same place as your old ones, then measure them before you go to look for a replacement. That way you know that your new bath will fit. Check that the shower tray you're buying has a non-slip surface. Check with your plumber that the drainage can take the amount of water your shower is producing. Nothing is worse than having an overflowing tray. And always buy the enclosure and the tray as a set. This way you know that the enclosure fits to the shower tray. And last but not least, try to match your taps and levers with the style of your bathroom. If you have chosen romantic fittings then ultramodern will just not do!

Top Planning Tips

- Plan your bathroom so that all the members of your family will enjoy it. Keep the safety of your children in mind when choosing your flooring and lighting.
- Keep the existing service points in mind when planning your bathroom as rewiring and re-plumbing takes a lot of time and money.
- Think about what you want to do with your window. Maximise the amount of light that comes in without having to suffer from glare.
- Plan enough different types of storage. Shelving for products for every day use, cupboards for occasionally used products and towels, and bins for laundry. In families, plan also storage for typical children's bathroom accessories and toys.
- Decide whether you have the space to install a separate shower enclosure or a shower above the bath. A separate shower will take more space, but two people can use the bathroom at the same time.
- For larger families, a second cloakroom would come in very handy, especially in the morning when everybody needs to get ready at the same time.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

About Kitchens

Because you probably will only buy a new kitchen once or twice in your life, you will need all the help you can get. Especially with the ever changing trends and the home improvement and cookery programmes on television it becomes more and more difficult to make a sound choice. This step-by-step decision planner will help you on your way to your dream kitchen.

Kitchen Plan

First it is important to choose whether you want a fitted kitchen or a freestanding kitchen. If you choose for a fitted kitchen, you will make the most of your space, as all the difficult corners can be hidden and used for storage. You can choose for flat pack, rigid or custom built to suit your needs and budget.

Choose a freestanding and you will get that individual and informal look you might have been looking for. You can use all kinds of furniture to create the ambiance you prefer. You will have to choose your furniture well though to create as much storage space as in a fitted kitchen.

Different people have different lifestyles. It is obvious that a single person or a couple will have different expectations from their kitchen than families with growing up children. Make sure the kitchen will fulfil all your needs.

Sink, preparation area and hob should never be too far apart and that the fridge should be near the entrance of the kitchen. This all will have effect on where you will plan to put your basic equipment and where the service points for water, electricity and gas will be. Keep the existing service points in mind when planning your new kitchen as rewiring and re-plumbing your kitchen will take a lot of time and money.

Kitchen Design

Because cabinet doors are the face of the kitchen, it will be very important that you choose a finish you want to look at for quite a number of years. Wood is one of the most popular choices. It can be used for a solid door, but veneer is a good alternative. Besides that, veneer will give more uniformity, as a piece of wood is cut in thin strips to cover all the doors. Wood itself is available in all kinds of colours, but it can also be glossed, painted, colour washed or waxed to give it the finish you prefer.

Laminate cupboard doors have endless possibilities in colour, texture and shine. They are easy to clean and work well in a modern or classic kitchen alike, just as glass, whereas frosted glass works best in contemporary kitchens.

A worktop will receive the most wear and tear of all the surfaces in the kitchen. It has to endure hot pots and pans, knives, water and dirt. Therefore your worktop has to be made of the most durable material you can afford. Protect your worktop at all times from hot pans and knives by using trivets and chopping boards.

Laminate is very popular for kitchens and worktops, as it is cheap and it comes in a variety of colours. It is easy to transform a kitchen just by changing the worktop. Wood is great for its character, but if used for the worktop it is highly

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

sustainable to scratching and cutting. Oil it well to protect it from stains and it will improve in character over the years to come.

Stainless steel can be shaped in any way your kitchen goes. The backsplash and the sink can be made into the same piece of steel, which makes that there are no awkward corners that will jeopardise hygiene. Granite is the most expensive material to cover your worktop with. It is highly durable, it doesn't scratch or burn and it keeps its colour. It's a natural material that will give great character to your kitchen. And last but not least, solid surfaces. They are hardwearing, they resist scratches, scorches and heat from hot pans, and if you do damage your surface, there are repair kits available to fix it.

Buying a Kitchen

When you go and buy a kitchen, always make sure that you get a fully itemised costing, so that you know what to be expected to pay. Never pay the full payment for your kitchen when you place your order. Purchase from someone that offers reasonable payment terms and make sure you know the terms and conditions.

Check whether the company offers a full after sales service and inspection when fitting is completed. If any questions would arise then they can be answered on the spot and maybe immediately dealt with.

Just before you decide on buying your dream kitchen, look at showroom cabinets and inspect areas that receive the heaviest wear, such as around the edges, hinges and seams, to spot any possible signs of weakness in the materials. Fully fitted showroom kitchens also give you a good idea about whether you will like certain finishes and gives you the possibility to look for different door handles, colours and materials.

Top Planning Tips

- Plan your kitchen according to your lifestyle. A family will have different expectations from a kitchen than a young couple. Keep this also in mind when planning your storage.
- Keep the existing service points in mind when planning the kitchen as rewiring and re-plumbing takes a lot of time and money.
- Think about the ventilation points when planning your kitchen. Don't plan cupboards over them.
- Decide where your sink, drainer and dishwasher need to go first as this will be the biggest unit to fit in.
- Plan the main areas (sink, food preparation and hob) close together. This will make your kitchen more efficient.
- When measuring the size of the kitchen, make sure that the exact shape of the walls is known. If there is an inwards corner in the room it will influence the shape of the worktop and the place of the wall-cupboards.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- If you decide for a two-way galley kitchen, leave enough walking space between the two galleys.

- If choosing a U-shaped kitchen, consider the floor space you will have left and maybe decide to use one of the legs of the U as a breakfast bar.

- If you like to cook with a lot of fresh vegetables or you need a big freezer, consider a big fridge/freezer at the end of your worktop for loads of storage and easy access.

- In a small and narrow kitchen you can create more space by making the wall-cupboards taller rather than having them protruding outwards. You will create more headspace and the kitchen will look wider.

- Store heavy items in the cupboards underneath the worktop.

- Store rarely used items on the highest shelves of your cupboard to keep easy accessible space free for daily use.

- Kitchens will always have drawers with all sorts of goods in it, like pens, buttons, matches and sandwich bags. To create more order, use little plastic boxes or special drawer organisers. You will find what you need much quicker.

- Store your utensils near to where you are most likely to use them. This will make your kitchen more efficient.

- Keep your worktop clutter free for a tidy look.

- To disguise a boiler you can build a spice rack in front of it. This will not take a lot of space and will be an attractive display for all your spices.

- Think about where you want your main bin to be situated. Try to integrate it in the area below the worktop to keep outlook of the kitchen clean and clutter-free.

- Don't forget to give your cookery books a place in your kitchen!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

About PVC-U Double Glazed Windows

This is an excellent, highly insulate material, which benefits from little or no external maintenance. It is readily available and well tested and is usually the lowest cost option of all three materials. It is mainly seen in white but also available in Mahogany and Oak woodgrain styles. PVCu is by far the most popular material for windows and doors today.

There are many well-proven PVCu extrusions available. Problems with discoloration are virtually unheard of and most suppliers will warrant against this. The design of the windows varies from company to company. Here are a few of the main points. **You may like to raise them with your supplier**.

Internal or Externally glazed windows

Most PVCu systems will now give you this option. As a generalisation Internally beaded windows (where the glass is held in from the inside) are considered more secure and burglar resistant. That said there are a lot of satisfactory externally beaded PVCu systems about - many of which feature either internal wedge gaskets or a "double sided" tape which holds the external bead firmly in place. You should investigate this particular issue with your supplier.

Thickness of PVCu walling?

Most PVCu systems for window and door construction are "multi-walled" with internal reinforcement by means of either Aluminium or Galvanised Steel box section. Wall thickness can vary from system to system - most are around 3 - 3.5 mm thickness. Generally speaking the "thicker" the walling - the stronger the section. **Ask your supplier for an example section** and enquire if the frames are fully reinforced. Note also that the greater the number of internal walls - the greater the strength.

Depth or thickness of frame

Actual depth of frame extrusion varies from as low as 50 mm to a number at 70 mm and above. Most are in the 60 - 65 mm region. Clearly this does have an effect on the structural strength of your replacement window or door. This is especially worth bearing in mind when comparing prices. It would not for instance be fair to compare the price of a conservatory built using a 55 mm depth of frame with a window made using 70 mm depth of frame.

We bring the points above to your attention purely to give you a feel for the sort of questions you should ask a potential supplier. The above is by no means the whole story, and there will be varying arguments one way and the other.

Here is a short list of PVCu systems companies supplying extrusion for the manufacture of PVCu windows and doors in the UK. These include Rehau, Veka, Spectus and Synseal.

For some, however, PVCu lacks authenticity when it comes to the more traditional

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

designs. It is not acceptable to planners for use on listed buildings and not popular with planners in conservation areas.

Coloured Frame Options

What colour do you want? You name it and today you can almost certainly get it. Standard colours for PVCu and aluminium are white, whilst for hardwood it is a natural stain option such as mahogany, walnut or light oak. You can, however, have hardwood already primed in green, cream and teak plus a whole host of options to your specification. PVCu in mahogany woodgrain and cherry oak woodgrain styles is also increasingly popular. Additionally, both PVCu and aluminium can be specially coloured in red, blue, green, black and orange! (and that's just a few of the options!)

The above only really touches the surface on some of the options available. Your supplier will be pleased to give you a more detailed specification.

This article is about PVC-U Windows (also referred to as upvc, pvcu and pvc windows). Other materials used for windows include Aluminium and Timber / Hardwood

For more information on Double Glazed replacement windows visit Windows Today http://www.windowstoday.co.uk/

Buyers Tips - Top Design Tips

In this section we introduce you to some very important but often overlooked issues when choosing window designs. Regrettably we find that quite often some aspects of window design are not discussed at the buying stage. These aspects can often turn out to be very important to the buyer.

One such issue is "equal sight lines"

Unequal Sight Lines

Equal Sight Lines

When manufacturing most modern replacement windows it is normal for there to be smaller areas of glass wherever there are openings (sashes) fitted. Where the frames are fixed the glass area will be larger. This "unequal" site line is quite normal and acceptable to most people.

However on a lot of older properties (and indeed some newer ones) it was more common to have an equal sight line. (i.e. you would not be able to tell from the outside which windows opened and which did not.) Fitting "dummy sashes" or "dummy openers" into the frames created this "equal" sight line.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

As you will see from the photographs above the windows can have a considerably different appearance dependant on whether or not they have equal sight lines.

Equal sight lines are not for everybody - indeed some will not like the overall "bulkier" appearance. However there is no doubt that for some types of property this will be a "better bet". It is also a very good alternative with Georgian and Leaded Light window designs as it allows you to have rectangles / squares that are more equal in size.

Having equal site lines adds to the overall cost of your replacement windows and for this reason many people do not favour this approach. That said -- it is still a worthwhile consideration in our opinion.

Another possible alternative is to consider having "vertical equal sight lines". With this approach fixed windows are always above fixed windows and opening windows are always above opening windows. Ask you suppliers for more information on this if this is unclear to you.

Another design issue that is often overlooked is whether to use black gaskets or white gaskets on your white PVCu windows.

Black coloured gaskets are the norm with most companies and are widely fitted. In the past white gaskets had not been favoured as it was not always possible to get a "matching" white and it was not also possible to offer a "colour fast" guarantee. This has now changed and more and more companies now offer both alternatives.

We feel white gaskets are a good alternative - especially on "panelled" doors.

This photograph shows a panelled door design with black gasket. It would have looked better with a white gasket.

An alternative to white gaskets are "low profile" black gaskets which are very slim and less obtrusive.

One disadvantage of white gaskets reported by some people is that the gasket will often appear grubby and show up the dust/dirt. This may be an important consideration is you live close to a major road network etc. (Or don't fancy cleaning too often!)

Whatever your choice we do especially recommend white gaskets on white PVCu panelled doors.

Consider your Neighbours

When replacing windows it is sometimes worth considering the effect of your changes on the overall appearance of the street or road where you live.

For instance if you and your neighbour both agree on a style for your windows the overall effect can be considerably better if you both agree to use similar designs. It doesn't matter if you both use the same company or even have the work done at the same time.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Sometimes using "conflicting" styles or designs "side by side" will spoil the appearance of the neighbourhood. As can be seen in the photograph below using similar designs on both of these porches has added to the visual appearance for these two neighbours.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Actions to prevent flooding around the house

With global warming and the resulting climate changes, flooding is increasingly becoming a problem. Often the ordinary householder thinks there is nothing they can do to protect their property - but now there is !

This page will help you gain a better understanding on how floods can damage your property and how products can help you in the event of a flood in your area.

Basements

If an Antiflood Barrier has been fitted, the chances are that seepage will not effect your basement, however this cannot be guaranteed. Seepage through the ground is a gradual process and is subject to a lot of variables, such as:

- Has your basement been adequately tanked? If not, what is the porosity of the ground?
- Do you have cracked or damaged drains?
- There are many, many more factors that can also take effect.

Suspended Floors

This is the same as with basements, with the exception that the area beneath the floor is unlikely to have been tanked. A sump situated roughly at the centre of the house could be used in conjunction with a pump to remove any collected water. It would, however, not be advisable to set the sump too deep as penetration through the water table could occur and this would not be good in the long term.

If you do decide to install a sump, as with many building projects, it is recommended that you use a professional to complete the work.

Air Bricks

Over the years, ground levels around external walls tend to rise. Maybe a patio or pathway has been built higher than the recommended 6 inches below damp proof course level? Whatever the reason, you may find yourself with a potential water entry point. If the Antiflood Barrier has been fitted, air bricks will usually be protected.

There are, however, other factors that need to be considered: If rainwater or run-off were to collect inside the barrier, can it be pumped out quickly enough in relationship to the height of the air brick? If in doubt, consider using a device designed specifically for this purpose.

Drains

Drains are a major problem during a flood as they cannot cope and will therefore fail to work. Here follows a brief outline of protection systems that you can install yourself.

If you have installed the Antiflood Barrier, water from the outside will be greatly reduced if not stopped completely. The next step is to tackle the drains in order of priority. The lower the drain in relation to the floor level the greater the need for action. These levels will always be

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

affected in relationship to the flood level and will change inside the barrier only if and when water is discharged via the WC, bath, basin, sink rainwater.

Manholes

It is usually possible to put a plug in the manhole to stop backfeed from mains sewers etc. You can also use the manhole as a collection sump inside the barrier It is advisable to employ a redundancy brace to ensure the plug stays firmly located in the drain. This ensures that if the bung is not located correctly or tightened sufficiently, it will not be forced out by backfeed pressure. A simple piece of 6" x 2" laid in the channel will usually suffice.

Gullies

If your gullies are connected to the main drainage or tank, as the flood advances the water will come out of the gullies in relationship to the flood level. Therefore all gullies need to be sealed, although this may not be necessary if you have plugged the main drain as above. There is a range of automatic backfeed gullies but they can fail & make the whole barrier system pointless. Some products are manufactured to deal with this problem.

Sump

If you cannot use the manhole as a collection sump, a series of sumps will need to be fitted inside of the barrier in order to dispose of seepage and rainwater should the need arise. These sumps can be fitted with automatic pumps to discharge water and a manual pump can be supplied should the electrical supply fail.

Bath

If you have a bath situated on the ground floor then that would be the next affected point of entry. Logically, the lower the discharge point, the lower the seepage. Some products will seal most drains, including showers and washing machines. Once again this will not be necessary if the manhole is plugged.

WC

Next the ground floor WC. The same advice as "Bath" applies.

Washing machine stand pipes, basins, sinks and so on.

Airvents

Air vents should not be an issue if the barrier system is fitted, however there are some products which can be installed where it is impractical to erect the barrier.

Ground Seepage

There is always the possibility of ground seepage. The severity of this seepage is not calculable as the volume of water seepage is governed by a great many factors. It is possible to slow down the seepage but first you have to know where it will occur and why. If your premises are of a modern construction, it is most likely that after the foundation brickwork had been built, the builders filled the void around the brickwork with all kinds of rubbish. This is a potential problem as this filled void is very seldom compacted and, as such allows the water access to a greater height in relation to the ground level, than that of compacted ground. The answer is to cover the area around the edge of the property with paving properly sealed to the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

walls. In some cases you may well want planting areas. These should be excavated down to the foundation slab and filled with compacted earth.

Garden soakaways are usually constructed away from the property and should be well outside the barrier. However, these soakaways are of numerous designs and can give easy access to the inside of the barrier via the drain outlet. If the property is on a soakaway ensure the drain is plugged within the barrier.

Modern drains are back filled with shingle or similar. This is also a potential entry point for water. Regardless of how much seepage you get, there is usually a pump that can cope with it.

Now you can do something to stop your home flooding and inevitably ruining your furniture - and possibly your life!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

ADD A RADIATOR

SKILL LEVEL

Basic plumbing skills are needed to cut and join pipes. You also need to know about your heating system and how to drain it down

SAFETY FIRST

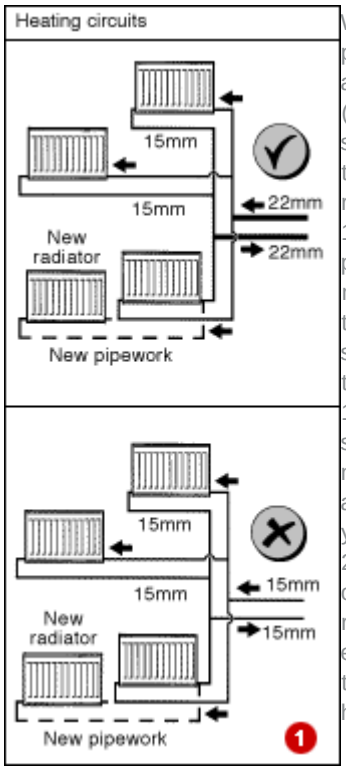
Check for pipes and electric cables before drilling. Always make certain you have identified the pipe properly before cutting it. Know where to turn off the gas, water and electricity before you start work. If you use plastic pipes or fittings to join metal pipes, make sure you link the metal with an earth wire.

INTRODUCTION

Add a radiator to your central-heating system to provide extra heat.

A radiator can be teed into any part of the central-heating flow-and-return pipes, but it is important that adding a radiator doesn't rob existing radiators of their share of the boiler output. Once you have established where to join the new pipes to the circuit, you can set about hanging the radiator on the wall. The best direction to work in is from the radiator to the heating circuit. Only when you reach the existing pipework do you need to drain down and cut the pipes.

2 - Where to connect



Working out flow rates in pipes can be complicated but as a rule of thumb, a 15mm (1/2in) flow and return should serve no more than three radiators. If the radiators are more than 1000mm (40in) across or the pipe runs to the radiators are more than 4 metres (13ft) then the number of radiators served must be reduced to two. This means that any 15mm (1/2in) heating pipe serving more than this must not be used to connect an additional radiator. Instead, you need to go back to the 22mm (3/4in) section of pipe or extend the 22mm (3/4in) run so it takes in one of the excess radiators. If you follow this advice your radiators will heat up efficiently (1).

3 - What size radiator do you need?

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Radiator outputs are given in British Thermal Units and Kilowatts. Select a radiator to suit the heat you require. A 4m x 3m (13ft x 10ft) living room with two outside uninsulated cavity walls needs around 3kw to give 21°C when it is minus 1°C outside. The bedroom above it needs just 2.2kw because it doesn't need to be as hot and there is some gain from the heated room below. It is customary to add 10% to the figures above for exposed sites or very cold weather. If you select a radiator with a larger output, it can be controlled with a thermostatic radiator valve.

A very rough rule of thumb is: the volume of the room in cubic feet multiplied by 5 = temperature requirement in BTUs.

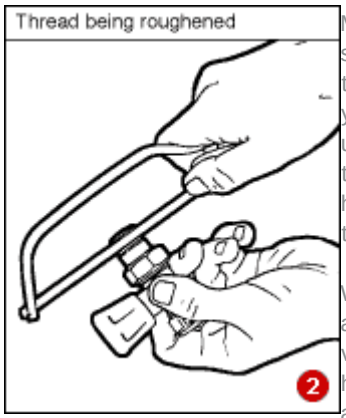
4 - Positioning a radiator

Radiators work best in the coldest part of the room. Ideally this will be on an outside wall, usually under a window where the cold air drops to the floor. If you have long curtains or don't want to put a radiator beneath a window, it is perfectly acceptable to place one where it will suit your furnishing arrangements. Modern convector radiators with fins at the back will still work well in any position. If you haven't got enough room for the right-sized radiator, choose two smaller ones and spread the heat more evenly.

5 - Fitting the valves

Fit the valves before you hang the radiator so you can see where the pipes will come up through the floor. If the valve is directly above a floor joist you might be able to move the position of the radiator slightly to one side in order to miss the joist. If you can't do this you will have to bend the pipe.

Remove the protective plugs from the radiator. Wrap at least five turns of PTFE tape around the threaded tails of the valves and screw them into the radiator. Some valves require a large allen key to screw them in, others have flat sections for a spanner. Screw the valve tails tightly into the radiator.

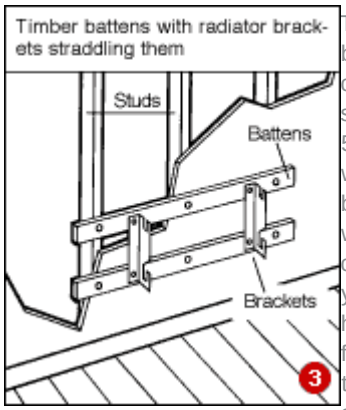


Make sure the PTFE tape stays on the thread rather than just running along it as you tighten. If it does run, undo the valve and roughen the thread slightly with a hacksaw blade then re-tape the thread more tightly (2).

When the tails are tight attach the valve bodies. One valve will have a lockshield head and the other will have a knob for turning the valve on and off.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

6 - Hanging a radiator



The radiator is supplied with brackets, but you must choose the right plugs and screws to suit your walls. 50mm No12 wood screws with ordinary wall-plugs will be fine for brick or block walls. For plasterboard-covered timber-stud walls, you need to select special heavy-duty plasterboard fixings and limit the size of the radiator so it doesn't exceed the permitted weight for the fixings. If possible screw into timber supports (3).

Place the radiator on the floor in the position you want to hang it. Check the top is level and if necessary pack up one side to level it. Draw a pencil line on the wall along the top of the radiator. Look at the back of the radiator and draw two vertical marks directly above the centre line of the bracket straps. You now have two crosses on the wall to position the tops of the wall brackets.

Take care when lifting large radiators. You will need help to lift them onto the brackets. Wear strong shoes to protect your toes and, better still, keep your feet clear when lifting heavy objects.

Place the radiator to one side and line up the brackets with the marks, so you can drill a hole through the slot of each bracket. Screw the brackets on the wall and hang the radiator. Check it is level. If it is, you can remove the radiator and drill through the round holes in the brackets to keep them in position. If the radiator wasn't quite level, tap one of the brackets to compensate.

There is no need to tilt the radiator towards the air release point. The air can always be removed from a level radiator

7 - Marking holes for drilling

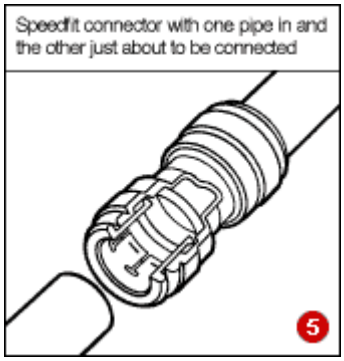
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

There are two ways to run pipes - from beneath the floor or along the surface of a wall. If the pipes are coming from beneath a wooden floor, you need to mark and drill holes (4). The best way to do this is with a right angle of some kind. Hold a try square in line with the centre of the valve in two positions and mark the points on the floor. Where the lines cross on the floor indicates the centre line of the valve. Remove the radiator from the wall brackets so you can drill the floor. Use an 18mm wood bit (or larger) to allow clearance around the pipe. If the hole is too small the pipes will creak.

Check that there aren't any pipes or cables where you want to drill. Once the holes are drilled, you can insert two lengths of copper pipe to protrude beneath the floor.

8 - Connecting pipework

There are several ways to join pipes. Where access is restricted it is often easier to use push-fit joints (5). These are reliable, provided the pipe ends have been cut evenly so they can't damage the rubber seals when the pipes are pushed in. Use a pipe cutter rather than a hacksaw to make sure you get a clean smooth cut. Avoid getting dirt on the pipe ends and in the fittings.



9 - Soldering

If you prefer to use solder joints, make sure you have a heat resistant mat to protect the surrounding area from the flame. If possible make up two lengths of pipe with elbows and solder them outside. You should then be able to push them though the holes and into the radiator.

Where it is impossible to pre-fabricate pipe runs with joints, you can solder the joints in situ using fittings with integral solder.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Smear a small amount of self-cleaning flux to the pipe ends and push them into the fittings. Apply gentle heat until you see a ring of solder appear around each mouth of the joint. If the solder forms all the way round the joint is sound. Don't disturb the joint until it cools.

Use a small plant spray to damp down any wood before soldering and again afterwards.

Run the pipes back from the radiator to the main flow-and-return arteries, finishing them ready to tee in.

Drain the system and, when you are sure all the water has gone, cut the pipes with cutters or a junior hacksaw. Be ready to catch a small amount of residual water from the pipes.

You need to cut out a section of pipe just large enough to fit a tee in. If there is enough movement in the pipe you might not need to make two cuts in each pipe - just slide it along.

Because solder won't run properly if there is even the slightest trace of water in the joints, it is often easier to use compression fittings. If the pipes are old imperial 3/4in (20mm) pipes, buy some substitute rings for the 22mm rings fitted in the compression fittings.

10 - Bending pipes

Pipes can be bent by inserting a bending spring of the correct size and gently bending the pipe over a rounded object. Slightly over-bend past the angle and then bend back to release the spring (6).

If you want to make the job a lot easier, use plastic heating pipe which can be threaded under floorboards.

11 - Draining down the system

Turn off the water supply to the feed and expansion tank which is the smaller of the two cold tanks in the loft. If there isn't a valve to turn it off, tie up the float valve arm to stop the tank refilling as you drain it.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Turn off the heating system at the mains electricity supply. It is not enough to turn off the programmer because many systems have an override function. Attach a hose pipe to a drain point lower than the point you want to tee into, and run it out to a drain - the lower the better.

If you can't find a drain-off point, you can drain through a radiator by turning off the valves and removing a radiator. If all else fails, buy a self-tapping washing-machine valve and screw it into a heating pipe at the lowest point on the system. You can then attach a hose pipe to the valve.

Open the drain cock and let the water out. It will speed things up if you can open some of the venting points on the radiators, but remember to shut them again afterwards so you don't have lots of open points when you come to refill the system.

Fill the system with cold water and check for leaks before turning on the boiler. You can run the heating with the boiler turned off. This will allow you to remove air from radiators without the risk of being scalded.

12 - Refilling

Let water back into the feed and expansion tank and the system will fill. You will need to bleed all the radiators.

If you have a sealed system or combination boiler, turn on the filling loop and let water into the system until the pressure gauge reads 2 bar, then go round and bleed the radiators. You will have to top up as you go by opening the filling valve , but eventually you need a cold pressure of around 1 bar which will rise slightly when the system heats up.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our Electrical Project: WIRING IN SWITCHED WALL LIGHTS

" How can I introduce another light or lights into my room switched independently of my main light".

Please remember when attempting any electrical installations at home that you are obliged to get the completed job tested by a fully qualified electrician and obtain a minor works certificate. Failure to do this may render your house insurance invalid and you may have difficulty selling your home.

As with our bathroom project, we believe in realism and although we didn't have a specific contract to carry out this operation, we have made up a circuit board, using the actual fittings, for you to view. Our project shows 2 wall lights added, but the same circuit can be used for an additional ceiling light switched independently.

You will need:

- 1 x 20 amp junction box (3 terminal)
- 1 x 20amp junction box (4 terminal)
- 1 x 1 way switch
- 1 x single pattress box with grommet.
- 1.5mm cable to suit. (click, and see *rules)*
- Earth sleeve.....Red tape
- Cable clips.....Screws
- Wall conduit for 1.5mm cable.
- We have used 20amp junction boxes to allow more room.

STEP 1. (Do not cut or remove any cables or wires without first turning your power off and removing the fuse from the circuit you are working on. If working with "trip switches" put a large note on the consumer unit. You may have turned the power off and be in the loft, when an unknowing family member thinks the lights have tripped and flicks the switch..!)

Think carefully about the position of your new light/s and mark the wall, make your holes and chases, and all new connections before making the final connections to the existing circuit. That way you can keep the lights on as long as possible.

(Click on any image to see a bigger picture)

Trace a lighting cable from the light point nearest to the position of your new light/s. (do not disconnect or cut anything yet) You need a cable that does not go to a switch. Make sure you have enough slack on your chosen cable to insert a junction box and be able to fix it securely to a joist or rafter. You may have to insert a timber "noggin" to achieve this fixing. You need to work out where this position is, in relation to the position you will install your new cables

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

according to the circuit you choose.

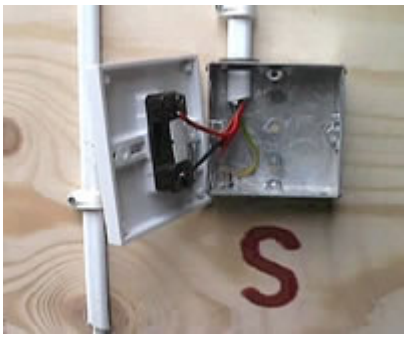
For this example you will need to mark the wall for your switch, and both wall lights. Make a hole large enough in the wall to accept the switch box (pattress), mark and chase a slot in the wall wide enough to accept your cable and its conduit container. Take this chase up the wall to the ceiling and make a hole in the ceiling at the back of the chase. (when the chase is filled you will not see the hole).

Make the same chase and hole for the wires to the wall lights.

Take out a "blanking piece" from the pattress box and insert a rubber grommet to stop the cable chafing the metal.

Connect the box securely to the wall using the holes provided. Take a length of 1.5mm cable and run it from the cable you have identified earlier, through the hole in the ceiling and down to a) switch b) both wall lights. Allow sufficient cable for your connections at each end.

Thread the lower end of these cables into suitable conduit, so the top end of the conduit just goes through your ceiling or floor and the bottom end finishes at the end of the chase. Fix this conduit to the back of the chase. We have used cable clips in this diagram, but you could use anything that will not rust to hold them in place until you have plastered.



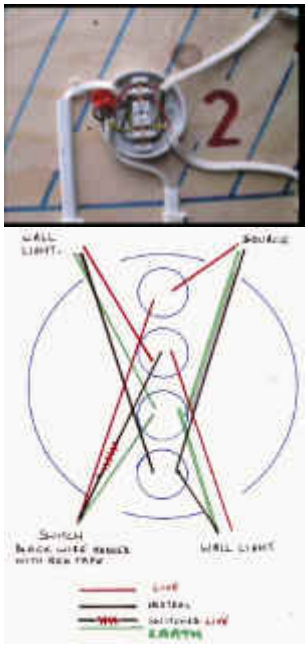
Now strip the switch wires, connecting the earth to the earthing point in the pattress box, the red to the top terminal of the switch, and the black, after applying a piece of red tape, to the bottom terminal. Screw the switch plate on the pattress box.

Connect your wall lights to manufacturers instructions.

Now we will be working on the level above, if you are in the loft, rig yourself up a suitable lead light which you will be able to plug into an ordinary socket. This will still work when you switch of the lighting circuit. It is as well to do this now to avoid too many trips up and down. Turn off the power and remove the fuse.

Strip the ends of both wall light cables and fix them into a 4 terminal, 15amp junction box. Leave an end terminal free and join both lives (red) in the other end terminal, then both earths, then both neutrals (black). The earth wire will need a small piece of earth sleeving over it. Fix this junction box securely to a joist or rafter.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

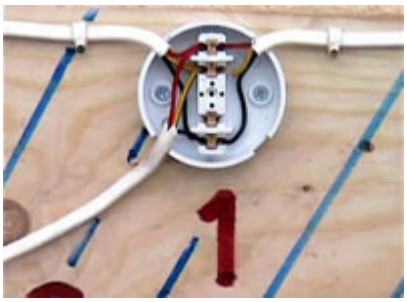


- Take a length of cable and strip the wires from both ends, join the red (live) to the spare terminal you have left in the first junction box. The earth and neutral go to join the other earths and neutrals in that same box. The other end of this cable will go to the existing circuit in a moment. Now take the end of the switch wire and strip. Join the red to the single red in what was the spare terminal, and the black (after applying a piece of red tape), to the other reds from your wall lights. This off course means that both the black and red wires to the switch are live, and you have interrupted the live flow with the switch, which when on, will complete the circuit.

[*Left]* *Line drawing of circuitry photo 2.*

The top right cable is the one which will go to the existing. Top left is a wall light cable. Bottom left goes to the switch. Bottom right to the second wall light.

- Now its time to connect up. Make absolutely sure your lighting circuit is dead and cut the cable you first identified. Strip the ends of all the wires, apply earthing sleeves and join them up again in the junction box, while at the same time including the wires from the cable in between the two junction boxes. Red to red, black to black and earth to earth. Keep the earth wires in one of the middle terminals and the red and black as far apart as possible in the far two terminals.



Top cables are existing, cut and joined. Bottom cable goes to second junction box.
Your complete circuit should look like this...only a bit more spread out !

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The blue shaded area is your loft, or floor void, W = wall-lights & S = switch.

Now run through each connection, check it, fit the covers on junction boxes, insert the fuse and switch on.

Complete the plaster-work before making a live connection, and make sure it is dry before you do. Or check everything is working then turn it all off again to do the plasterwork waiting until dry to turn on again.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

ADDING A SOCKET

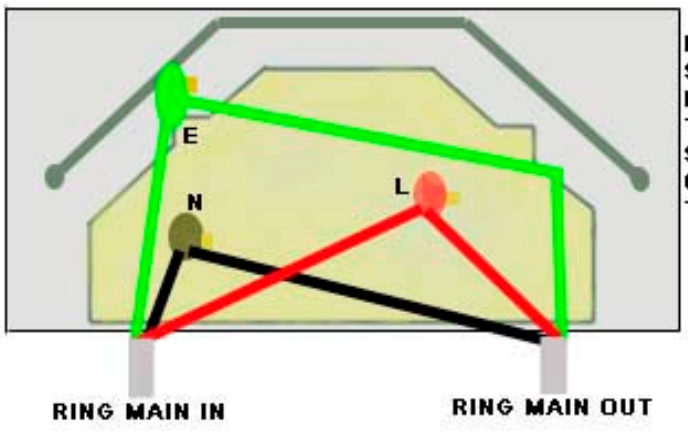
ADDING A SPUR TO AN EXISTING CIRCUIT

Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

Very often we find we do not have enough sockets at home. It is not a difficult job to add another but there are certain rules to follow.

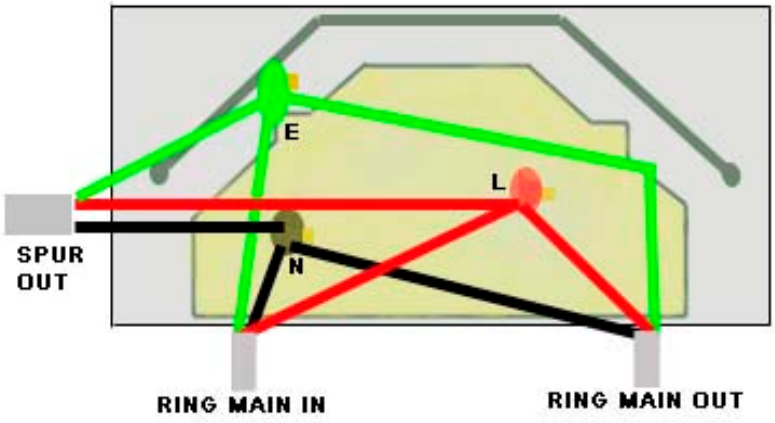
A spur can be connected to an existing socket, on either a ring main or a **radial circuit**, providing that socket does not already have a spur. That is only one spur per socket is allowed and the number of spurs must not exceed the number of sockets. If this is necessary in any part of your home the only way you can do this is by adding another **ring main** or by **extending one of the ring mains** you have.

The spur must be connected to the existing circuit using the same cable as used in the main circuit. You can see how to wire a spur to an existing socket from the images below. The first image is how the back of your double socket should look and the second is the wiring for a spur. A general rule for a ring main is that if you only have two cables in the back of an existing socket then it is ok to spur...However, if you have a radial circuit with two cables coming in and out, this may be the last socket on that circuit and already has a spur. Please check with a qualified electrician if you are not sure**If there are 3 cables coming out of any socket then it is not ok to spur.**

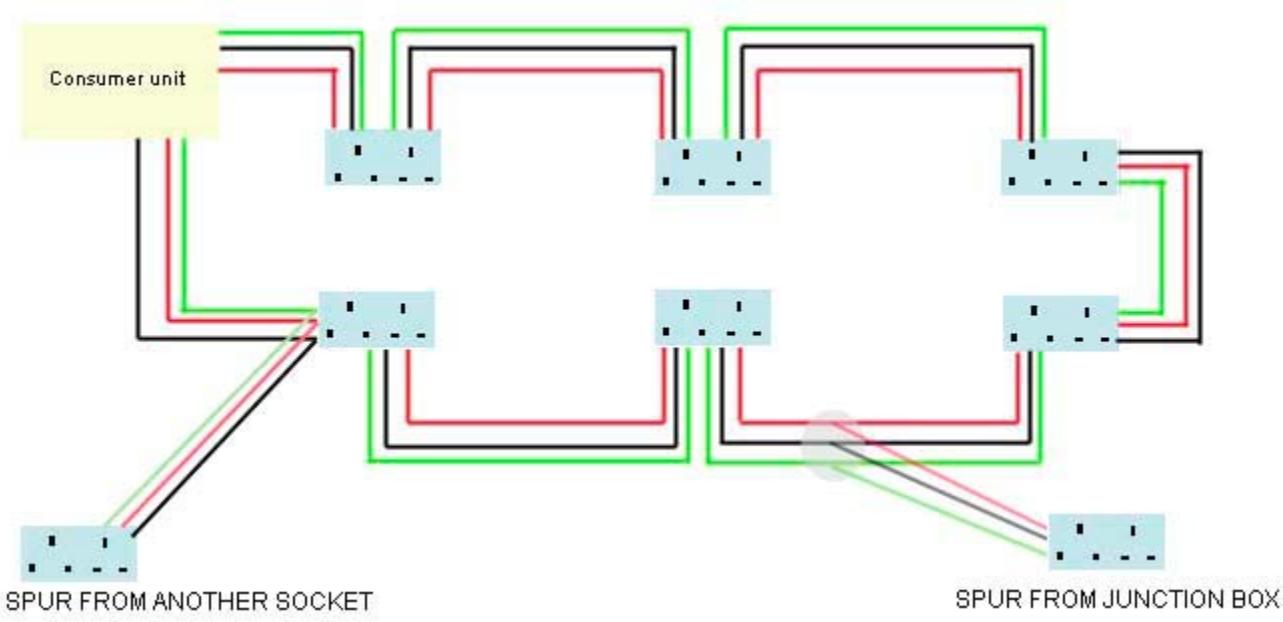


BACK OF DOUBLE SOCKET IN A RING MAIN. PLEASE NOTE THIS IS ALSO THE SAME IN A RADIAL CIRCUIT EXCEPT FOR THE LAST SOCKET

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



A spur can be added to any part of the circuit providing the rules above are followed. If there is not an existing socket near enough, you can connect into the cable by means of a junction box for your new spur.



Junction boxes come rated for different uses by the amps they are allowed to carry. A 30amp junction box should be used on a ring or radial circuit feeding sockets only. The junction box must be fixed solidly to a suitable surface and must not just "float around suspended by the cables it joins.

The cables to and from any spurs you connect must be protected by a conduit of some kind; be it on the surface or buried in the wall. If you bury cables in the wall they must only run vertically, not horizontally. Cables may be placed in floor or ceiling voids but not amidst, or wrapped in, insulation where they may become too hot.

Please also check the rules very carefully for ring mains and radial circuits. You are limited in the length of cable you are allowed to use in both circuits and long spurs could make you exceed the limit. If this is the case you are asking the circuit to use much more energy than the circuit is designed for. More energy = more heat and cables can catch fire. Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be

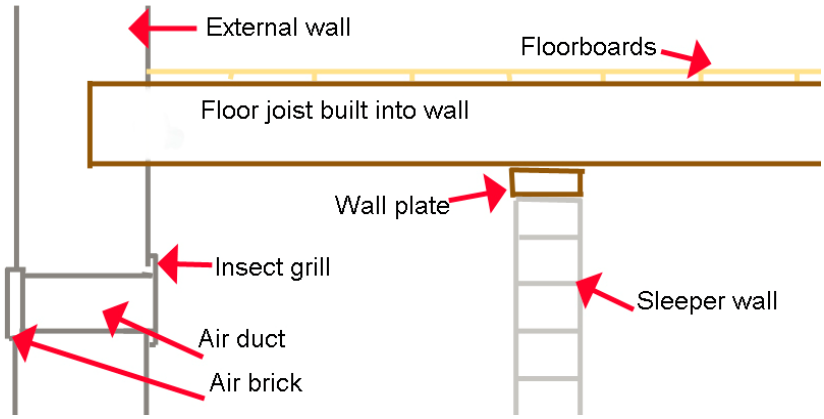
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

AIR BRICKS & AIR VENTS

Including a creaking ground floor



Most properties with wooden floors on the ground floor will have a void underneath. Air in this void can get stale and humid. Humid air carries a great deal of moisture which, at night when the heating is off indoors, can condense on the cooler surface of the floor joists or boards. This condensation (**See our project**) can cause the boards and joists to rot from the underside.

As with all condensation related problems the only treatment is ventilation and all properties with hollow floors have air bricks built into the wall to allow a free flowing passage of air.

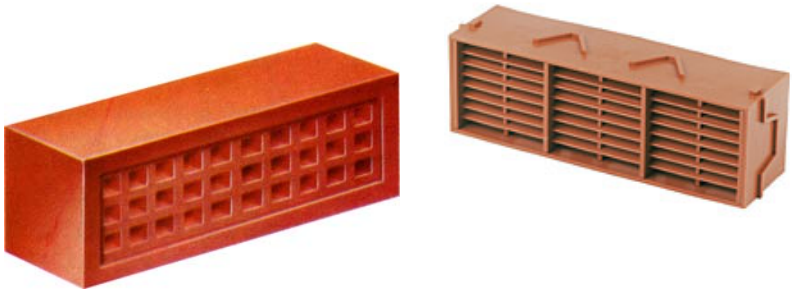
The down side of these air bricks is that the air under the floor can produce a bit of a draught up through the gaps in the floor boards. Many properties, because the owners new no better, have had the air bricks blocked up or even removed. Some have had some blocked up on oe side of the house and the other sie has been left open and lastly, because these days a conservatory is a relatively cheap and easy way of getting an extension, the floor slab of the conservatory has blocked up the air brick/s.

It is important that these air bricks are opened up again. They must be all round the house to allow the air to flow back and forth. Recommended spacing is 1800mm.

If your floor is draughty see our project on filling gaps in floorboards, but do not block the air bricks. At best you will get some **damp and mould** and the worst case scenario leads to **dry rot.**

Air bricks can be inserted easily enough. The first stage is to remove a section of wall large enough to insert one. No lintel is necessary over an air brick. Use our **replacing a damaged brick** project as a guide to getting a hole made. Choose your air brick. In most situations for hollow floors a 9 inch x 3 inch air brick will be adequate providing there are enough of them at suitable spacings. Air bricks can be bought in clay or plastic. Click on the images to buy the plastic (less easily broken) variety.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

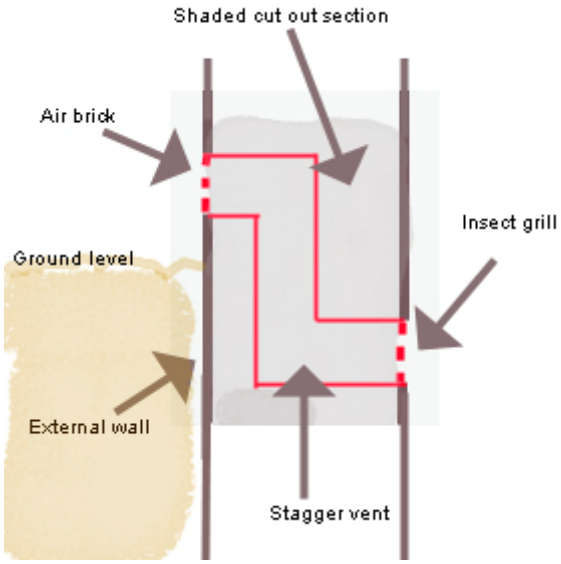


Having cut a hole through the wall. (If you have a cavity wall you may need to hire some extra long masonry drill bits from your local tool hire shop. These can be bought in varying diameters and up to 600mm long. We suggest you hire a 300mm long, 10mm bit for this project.) you need to provide a duct to stop debris blocking the hole in the future. This is done by the use of a special venting duct called a sleeve. Click on the sleeve to buy.

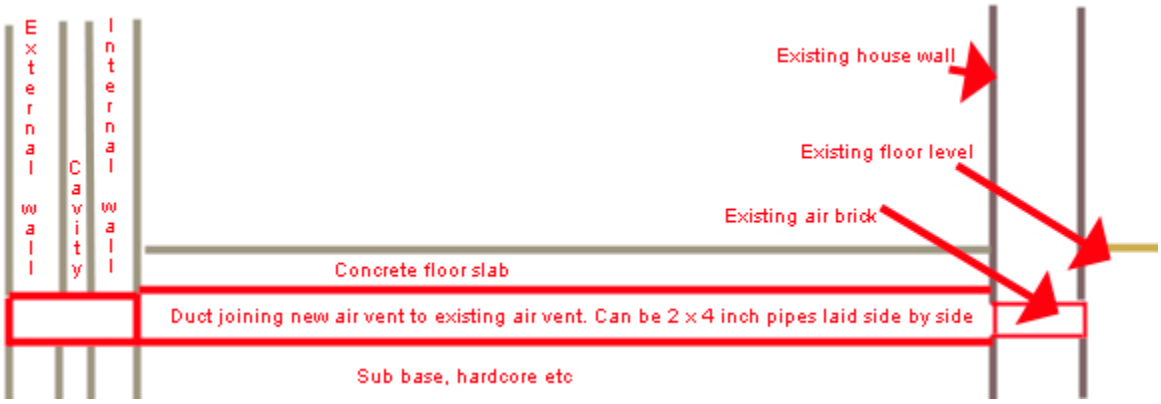
Simply push the sleeve through the wall and then lay your air brick in the hole and **repoint.**

In some situations, for example where the external ground level has been raised over the years, the required height for an air brick is below this level. A special sleeve can be used in these cases. This involves digging a hole to the correct level which should be at least 2 inches below the underside of the floor and ideally an inch or so below the level of the underside of the floor joists, and cutting through the wall at that level. The hole this time must be much larger as you need to get the staggered sleeve into the inside of the wall and build in the stagger so the top section is flush with the external face. Click on the vent below to buy. The upright section is designed to fit into a cavity if your wall has one.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



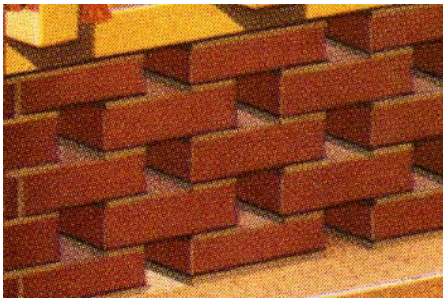
Similarly, if you are to construct anything against your house, eg a conservatory or extension, and this construction will block up any air vents, provision must be made to extend these vents beyond the new construction. This can be done very simply with 4 inch drain pipes laid side by side as extension tubes for your vents. The drain pipe must slope a very tiny bit to the outside of the property to prevent water ingress.



Creaking timber ground floor:

The joists supporting your timber floor have to be supported themselves and this is normally done with sleeper walls constructed before the floor was laid. To allow the air to flow around and through these wall, the brickwork is very often laid in honeycomb bond.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



As you can see from the first image at the top of the page, a timber wall plate is laid on top of the sleeper wall to allow a fixing from the joist to the wall to be applied. Unfortunately with the passing of time and the possible closure of some air bricks, it is very often this wall plate which deteriorates first. Either that or the mortar underneath is becomes crumbly and the plate, with the weight of the joists on it, sinks. This allows the joists to "spring" and the floor becomes like the bed of a trampoline. If this is happening in your house then there is no alternative but to replace the wall plate. See our **replacing a timber floor** project for help with this.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Decks

Decks are a common addition to Auckland houses and come in a variety of shapes and sizes and construction methods and materials. They can range from a small entry deck to a most elaborate feature deck, and with a little bit of thought and artistic flair, can be a great asset to any house. This section concentrates on timber decks.

DO I NEED A PERMIT FOR MY DECK?

All decks 1 metre or more above ground level require a permit (building consent). A deck less than 1 metre above ground level does not usually require a building consent (permit) but may require resourse consent, and a deck extending less than two metres from the face of a building does not require subfloor bracing.
Although a deck may not require building consent, it must still comply with the building code. In other words, it must be built properly. If in doubt contact your local authority

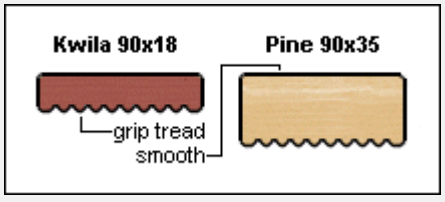
DECKING MATERIALS EXPLAINED

The three most common used decking materials are:

KWILA 90x19
Hardwood - Finished size is usually 90mm x 18mm. Kwila is a redish colour, but once weathered changes to a silvery-grey colour. It is a very dense and durable timber. Kwila can span 400mm, which means the joists (the timber the Kwila is nailed to) must not be more than 450crs or 400mm between each joist.

PINE H3 90x35
Usual finished size is 90mmx35mm. This board, because if its thickness, can span up to 550mm. This means the joists (the timber the decking is nailed to) must not be more that 600crs or 550mm between each joist. Pine decking once weathered has a tendancy to show little cracks or splits along the grain. This is a natural and accepted trait of pine. This timber usually comes in two grades. Premium and merchant. Premium is clear with only small tight knots, merchant is a mixture of grades and containes some big knots.

PINE H3 90x18
Same as above but can only span up to 350mm, which means the Joists (the timber the decking is nailed to) must not have more than 400mm Crs or 350mm space between each joist.
All of the above decking examples usually come with one face smooth, and the other face grooved (grip tread). See Picture below. Other less common profiles are obtainable but not as readily available.

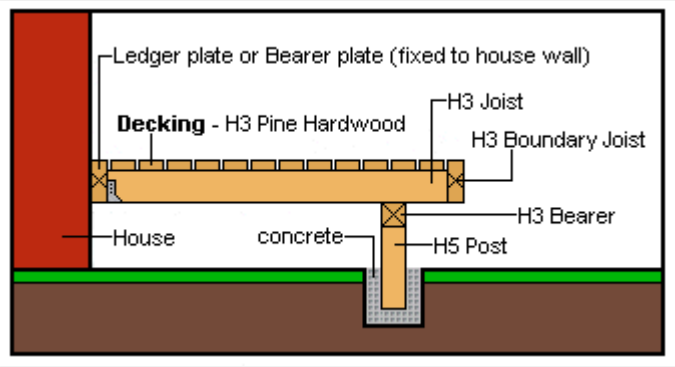


It is personal preference as to which side of the timber faces up, however if you plan to spend a lot of time lying or walking barefoot on the deck, grip tread may feel

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

uncomfortable.

DECK STRUCTURE EXPLAINED



The basic deck consists of

- Posts either embedded in concrete or bolted to appropriate metal post brackets embedded in concrete.
- Bearers, which either sit on top of, or are bolted to the side of the posts.
- Stringer, ledger plate or bearer plate, bolted or fixed to existing house.
- Joists, fixed to the ledger plate and on top of the bearers.
- Decking, as described in previous chapter.
- Boundary joist. Joist that goes around the perimeter of the deck.

POSTS
Usually 100x100 or 125x125 senton piles. Posts embedded into concrete footings must be H5 treated, where as posts bolted to appropriate metal (shoe) brackets aand off the ground need to be H4 treated.
The spacing of posts along the bearer line depends on the structure of the deck, but they can only span a max of 2000mm without requiring engineers calculations.
A standard footing hole is 300x300 square and 450mm deep. There should be 100mm of concrete between the bottom of the post and the bottom of the footing hole.

BEARERS
Must be H3 treated, unless very close to the ground in which case they will need to be H4.
The size of the bearer depends on the length of the joists and the span of the bearer, but they cannot span more than 2000mm without requiring engineers calculations.
example:

Joist span	Bearer span	Size of Bearer
1.45m	1200mm	100x75
2.40m	1800mm	2/150x50
3.40m	1800mm	2/200x50

Stringer
Also called ledger. The board bolted to the house upon which the joists are fixed to or on. The stringer must be H3 treated and fixed to the building using M12 bolts OR Dynobolts/anchor bolts if against concrete or block wall.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Pack the stringer out from the building wall to stop moisture becoming trapped.
The spacing between the bolts depends on the span of the joists which are fixed to or on the stringer.

example:
If the joists span 2m, the bolts should be 1.25m apart, where as if the joists span 6m, the bolts should be 0.5m apart.

JOISTS
Must be H3 treated unless very close to the ground, in which case they should be H4 treated. Joists are fixed to the stringer either by butting up to and fixing with joist hangers, or by sitting on top of the stringer and nailing through both faces of the joist.
The joists sit on top of the bearer and are fixed by way of nailing through each face of the joist into the bearer.
The size of the joists depend on the joist span and the joist spacing.
example:

Joist spacing	Joist span	Size of Joist
450mm	1.40m	100x50
450mm	1.80m	125x50
450mm	2.40m	150x50
450mm	3.30m	200x50
450mm	4.25m	250x50
450mm	5.00m	300x50

BOUNDARY JOIST
Must be H3 treated.
The boundary joist is fixed to the perimeter of the deck to give a neat finish.
In most cases the boundary joist is decorative rather than structural, therefore another preference might be to replace the boundary joists with decking boards.

HANDRAIL STRUCTURE EXPLAINED

All decks 1 metre or more above ground level must have a handrail.

A quick overview, a decks handrail must be at least 1000mm in height from the deck.

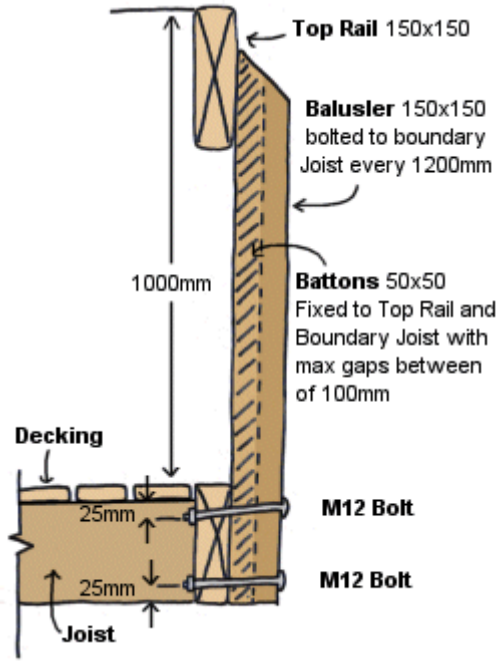
Any vertical slats cannot have a gap exceeding 100mm, and there must not be anything horizontal forming a ladder effect. However there are many alternatives, such as solid handrails lined with harditex and plastered over, solid panelling etc.

Trellis panels can be used, but most 'off the shelf' type trellis that most trellis manufacurers sell, do not meet the requirements. However, most trellis manufacturers are able to make trellis to ordered requirements. Depending on the size of the trellis panel, it's relevance to the thickness of the trellis and the size of the gaps in the hellis which are also governed.

Another alternative is glass, although a very expensive alternative. Glass suppliers will know the type and thickness of glass required for a handrail, but get ready for a shock when you find out the price.

diagram and detail of a standard handrail

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



ABOUT DECKS BUILT CLOSE TO THE GROUND

Often a deck will need to be built close to the ground. This is usually the case when building a deck on to a house which has a concrete floor. It is usually more costly and labour intense building a low deck than a deck, say, 1 metre off the ground.

Firstly air needs to be able to circulate around bearers and joists to ensure a long life for the deck.

If the bearers are near or touching the ground, upgrade them to H4, along with the joists. (In a normal deck construction, joists and bearers are H3 treated).
Ensure there is a gap between the decking.

Sometimes it will be neccessary to excavate the ground. In doing this, taper the excavation away from the house to let any water under the deck escape. If this is not possible because of the contour of the ground and a pool effect is created, then the excavation must be drained. In this case taper the excavation to a low point and run a drain to a lower point outside the deck.

The drain can be made by digging a trench, putting scoria in the bottom of the trench, laying drain coil on top of the scoria and then covering the drain coil with more scoria. The home handyman should easily be able to do this with a small deck and minimal water discharge, but a larger area may require a professional drainlay as it may require tapping the possible water discharge into a stormwater drain.

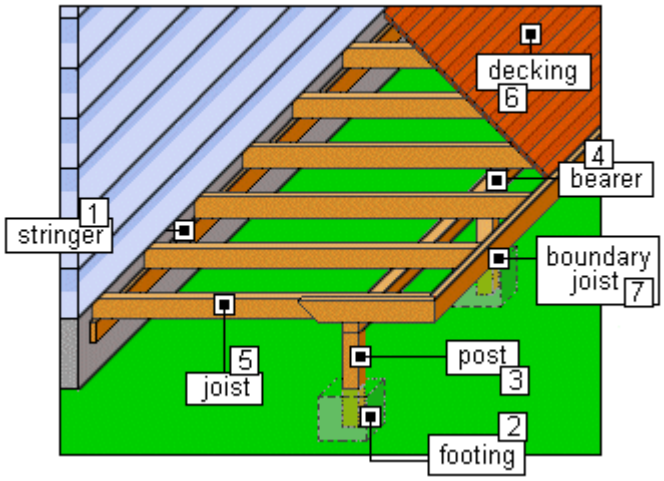
PRICE VARIATIONS BETWEEN DIFFERENT TIMBERS

At the time of writing (October 2001) decking timber prices including GST are approxamately: Kwila $4.50 per Metre; 100x40 radiata premium $3.90 per metre; 100x40 radiata merchant grade $2.90 per metre; 100x25 radiata premium $2.55 per metre;
Most standard decking when dressed is 90mm wide. Allow 12 lineal (running) metres of decking for every sguare metre of deck area.
The selection of decking boards will also have a bearing on the joist costs. For example, 100x40 radiata decking requires that the joists must be spaced at max 600mm, where as

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

thinner decking such as 100x25 radiata and kwila require the joists to be closer together therefore needing more joists hence a higher cost.
The cheapest overall deck structure would be using 100x40 radiata merchant grade decking, but be prepared to accept a lot of knots.

Deck Anatomy



1 stringers Also called a ledger plate. The stringer is the piece of timber bolted to the house upon which the joists are fixed on or to. The stringer must be H3 treated and fixed to the building using M12 bolts OR Dynobolts or similar anchor bolts if the stringer is to be fixed to concrete or block wall. The stringer needs to be packed out from the building at every bolt fixing to prevent moisture being trapped between the stringer and the building. The spacing between the bolts depends on the span of the joists which are fixed on or to the stringer.
example: If a stringer is 100x50 in size and if the joists fixed to that stringer span 2m, the bolts that attach the stringer to the building should be 1.25m apart, where as if the joists span 6m, the bolts should be 0.5m apart.

2 footings A standard footing hole size for 100x100 or 125x125 post is 300mm x 300mm square and 300mm deep in firm ground. In soft ground the holes will need to be bigger and deeper. 100mm of concrete is required as a pad beneath the post.

3 posts POSTS Usually 100x100 or 125x125 senton piles. Posts embedded into concrete footings must be H5 treated, where as posts bolted to appropriate metal (shoe) brackets need to be H4 treated. The spacing of posts along the bearer line depends on the structure of the deck, but they can only span a max of 2000mm without requiring engineers calculations.

4 bearers Must be H3 treated, unless very close to the ground in which case will need to be H4.
The size of the bearer depends on the length of the joists and the span of the bearer, but they cannot span more than 2000mm without requiring engineers calculations.
example:

Joist span	**Bearer span**	**Size of Bearer**

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

1.45m	1200mm	100x75
2.40m	1800mm	2/150x50
3.40m	1800mm	2/200x50

5 joists Must be H3 treated unless very close to the ground, in which case they must be H4 treated. The joists are fixed to the stringer either by butting up to and fixing with joist hangers, or by sitting on top of the ledger plate and nailing through both faces of the joist.
The joists sit on top of the bearer and are fixed by way of nailing through each face of the joist into the bearer.
The size of the joists depend on the joist span and the joist spacing.
example:

Joist spacing	Joist span	Size of Joist
450mm	1.40m	100x50
450mm	1.80m	125x50
450mm	2.40m	150x50
450mm	3.30m	200x50
450mm	4.25m	250x50
450mm	5.00m	300x50

6 decking Most popular decking is kwila (hardwood) or pine. Both materials usually have one smooth side and one grooved side (grip tread). It is personal prefernce as to which side faces up. The thickness and strength of the various deck materials determines how far apart the joists must be.

7 boundary joist Must be H3 treated. The boundary joist is fixed to the perimeter of the deck to give a neat finish. In most cases the boundary joist is decorative rather than structural, therefore another preference might be to replace the boundary joists with decking boards

Building a Deck

In this section we are going to show how to build a simple timber deck, two metres wide x five metres long and less than one metre above ground level. A deck less than one metre above ground level does not usually require a building consent (permit) but may require resourse consent. A deck extending two metres or less from the face of a building does not require subfloor bracing. Although a deck may not require building consent, it must still comply with the building code. In other words, it must be built correctly. If in doubt contact the **Local Authority**

If necessary use the previous page **Anatomy of a Deck** for reference throughout these instructions.

Construction Details

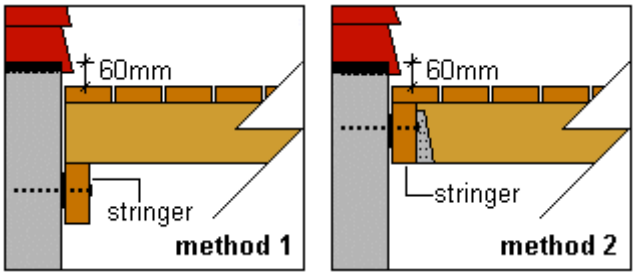
Below is a list of the materials required for the construction of this deck. All timber used in this deck (with the exception of kwila) is pine. *Gauged* means dressed (not rough) and finished size of gauged timber is slightly smaller than that stated below. *Tanalised* means the treatment of the timber.
All timbers listed below are common and readily available at any timber merchant.
Scroll down for step by step construction details.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Item	Description	Quantity
Stringers	150x50 guaged tanalised H3 (decay hazard)	1 @ 5.1m
Posts	100x100 guaged tanalised H5 (decay hazard)	5 @ 1.0m (confirm height)
Bearers	100x100 sawn tanalised H4 (decay hazard)	2 @ 2.7m
Joists	150x50 guaged tanalised H3 (decay hazard)	10 @ 2.1m using 35mm pine decking OR 12 @ 2.1m using kwila decking
Boundary joists	200x50 guaged tanalised H3 (decay hazard)	2 @ 2.1m 1 @ 5.4m
Decking	100x40 (dressed size 90x35) H3 pine OR 90x18 kwila hardwood	120m
Concrete	40kg bags concrete mix	3 of
Other	m12 bolts or anchor bolts; 90 or 100mm galvanised jolthead nails; 75mm jolthead galvanised nails; 60mm jolthead galvanised nails (if kwila is used)	As required

Step (1) Fixing the stringer

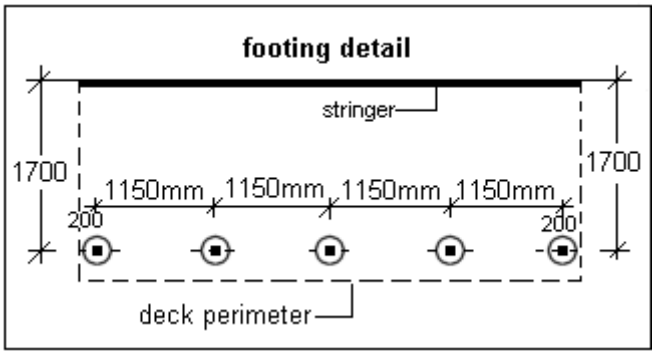
The stringer (also called ledger) is the beam that the joists sit on or are attached to and is bolted to the building. See **Anatomy of a Deck** for detail.
Cut the stringer to length (5m) and fix level to the building at the required height using m12 bolts every 1200mm apart. Pack the stringer out from the wall (5mm - 10mm) at every bolt fixing to prevent moisture being trapped between it and the building.
The finished height of the deck should be at least 60mm below the building floor, so the stringer height depends on the thickness of the decking and the method of fixing the joists to the stringer. See the two options below. Insure the stringer is level by using a level or **water level**



Step (2) The footing holes.

Dig five footing holes 300x300x300 deep to the dimensions as shown in the drawing below. If the ground is less than firm, then the holes may need to be larger and deeper.
Make a mix of **Concrete** and pour a 100mm pad in the bottom of each hole. Place the posts on top of the concrete pads and pour more concrete around the posts to hold in place. Ensure the posts are plumb (vertical), parallel, and longer than required. (The tops will be trimed off later).
Let the concrete cure.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

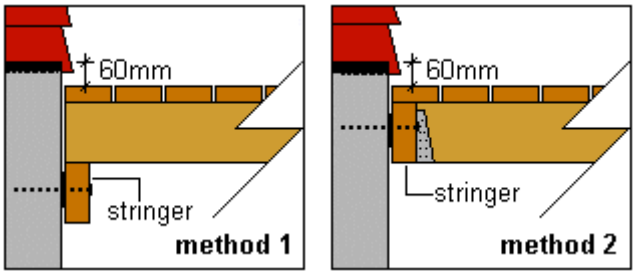


Step (3) **Fixing the bearers to the posts**

Trim the top of the posts to the required height which will be 100mm (thickness of bearer) below the underside of the joists. Mark the underside of the joist height on the building in relation to the stringer and use a straight edge and level or **water-level** to obtain the required height of the posts.
Sit the bearer on top of the posts and make sure any necessary join will be over a post.
Fix the bearer to each post with two nails angled from each face. Use 100 or 90mm galvanised jolthead nails.
Let the two ends of the bearer overhang the edge of the deckline at this stage. They will be cut later.

Step (4) **Fixing the joists**

Fix the first joist to or on one end of the stringer depending on your choice of fixing. See diagram below.



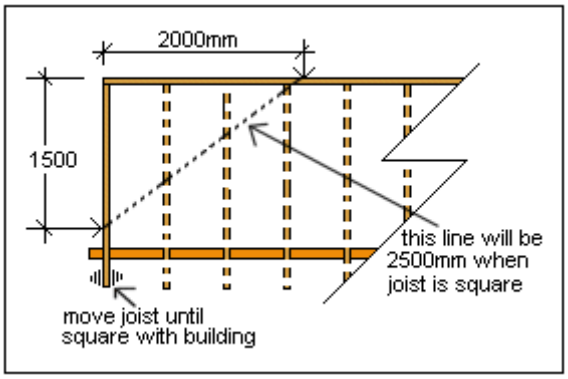
METHOD 1: Sit a joist on one end of the stringer leaving a gap between the end of the joist and the wall of the building. Fix the joist to the stringer with two nails angled from each face. Use 100 or 90mm galvanised jolthead nails. It is a good idea to drill the nail holes first to minimize the risk of splitting the end of the joist.
The other end of the joist will be sitting on the bearer, but do not nail yet until the joist is sguare (90 degrees) to the house.

METHOD 2: Butt one end of a joist to one end of stringer so the top of the joist is flush (even) with the top of the stringer. Nail in place. Attach a joist hanger (a metal bracket with nail holes in it that fits around the end of the joist and against the stringer) and nail with the appropriate nails to the joist and the stringer.
The other end of the joist will be sitting on the bearer, but do not nail yet until the joist is sguare (90 degrees) to the house.

Ensure the joist is square (90 degrees) to the building before nailing to the bearer. This can be done by using the 3,4,5,method.
Measure along the outside of the joist 1500mm (3x500) from the building, mark (A).
Measure along the building 2000mm (4x500), mark (B).
When the measurement from mark (A) to mark (B) is 2500mm (5x500), then the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

first joist is square to the building. **See diagram below.**
Make any necessary adjustment to the joist in the way of sliding the end of the joist either way along the bearer until square and then fix the joist to the bearer with two nails angled from each face. Use 100 or 90mm galvanised jolthead nails.



Fix the rest of the joists in place parallel to the first.
If 90x35 pine decking is to be used then the joist spacings should be 600mm crs, and if 90x18 kwila is to be used then the joist spacings should be 450mm crs. (crs means centres, and is the distance from the centre of one joist to the centre of the next joist.)
All joists should be slightly longer than required at this stage and will be trimmed off later.

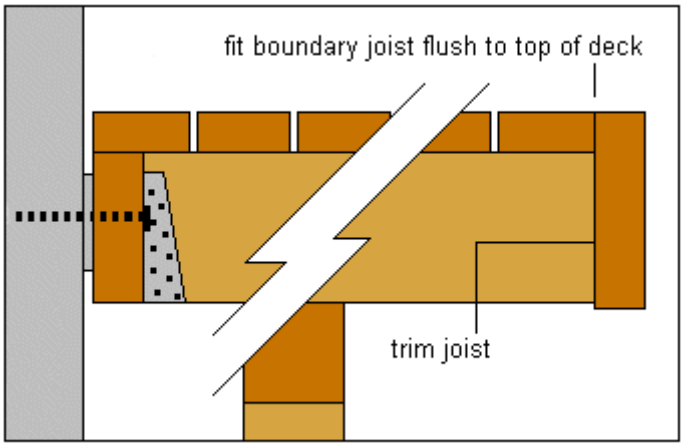
Step (5) Laying the deck

Start laying the deck from the building side out, making sure there is a gap between the first deck board and the building so moisture does not become entrapped. Any necessary joins should be made on joists and staggered between rows (no two joins should be next to each other). Continue laying and fixing the deck boards using a 5mm spacer to obtain an even gap between them. Check deck boards are straight and parallel to the building.
Let the decking overhang both end joists while laying, and then trim them flush with the outside of the end joists.

Step (6) Fixing the boundary joists

Cut the joist ends vertical and flush with the outside edge of the last decking board. Nail the boundary joist around the perimeter of the deck making sure the top of the boundary joist is is flush with the top of the decking. See diagram below.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

ARTEX AND PLASTER

SKILL LEVEL

Proper plastering is not easy. But DIY plasters are designed with ease of use in mind, and Artex™ is no more difficult to apply than thick paint.

SAFETY FIRST

It is best to wear gloves when mixing up dry plaster-based products - disposable plastic gloves are fine. Wear a face mask when mixing up fine powder.

INTRODUCTION

Being able to use Artex and plaster can help keep the walls and ceilings in your home looking good.

A professional plasterer will normally use gypsum-based Carlite plaster applied in two layers, undercoat and finish. The skill to do this properly takes years to acquire and the amateur should start with DIY plasters.

"Artex™" is the best known make of textured coating, used on internal walls and ceilings to cover up cracks and uneven surfaces or fashioned into patterns. Some people may want to remove the patterned effect.

2 - Choosing the right product

Consider what you want the plaster and/or textured coating to do. If a wall or ceiling is basically in good condition, but has a few holes or hairline cracks, there are many different wall fillers that you can use to make the surface smooth for decorating.

Where an area of plaster is seriously damaged or has come away from the wall ('blown'), you can use a 'repair' plaster (a DIY plaster undercoat) once all the old loose plaster has been removed. This has a good enough finish for papering or tiling, but if you want to paint it, apply a DIY plaster finish (also known as plaster skim) first.

DIY plasters are ideal for repairing the damage to walls created by holes made for electric wiring and plumbing waste pipes.

If you have rough or uneven walls, and using a wall filler will not be good enough, the whole wall can be given a coat of DIY plaster finish (it can be applied up to 3mm or 1/8in thick). Alternatively, you could apply a textured coating, with or without a patterned finish.

A new masonry wall can either be covered with plasterboard (often the best choice for a DIYer) or can be plastered using

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

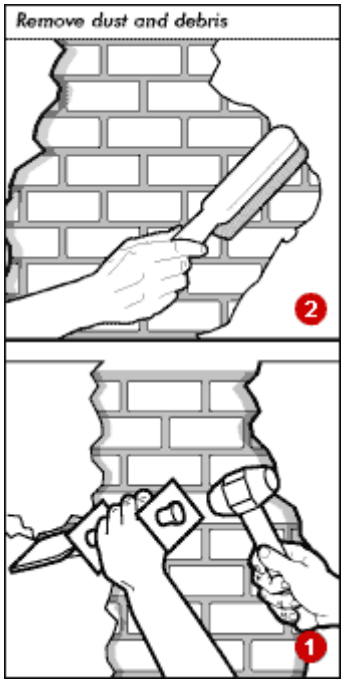
DIY plaster undercoat followed by DIY plaster finish. Only when you have had success with the DIY products should you attempt to use the professional products, though the technique is basically the same.

Any wall can be covered with textured coating to provide a patterned decorative finish. It has the advantage that it covers up damaged and unsightly walls, but can equally well be used on a wall in good condition if you want the decorative effect. Textured coatings are available in smooth, fine-textured and coarse-textured finishes.

3 - Using DIY plaster undercoat

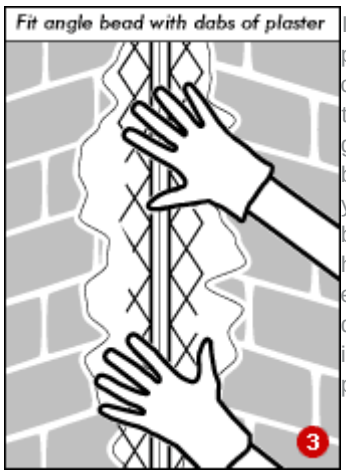
The most likely time you will use a DIY plaster undercoat (repair plaster) is to repair damage to existing plaster - either damage you have created (perhaps by installing pipes or electric cables) or damage that has happened through accident or old age. It is also ideal for finishing off where you have bricked up a fireplace or a door opening.

The first thing to do (especially with blown plaster) is to lay a dust sheet on the floor and cut back all existing loose plaster until you have a sound surface with solid edges. Use a club hammer and bolster chisel to do this (1) and remove all loose dust and debris with a stiff brush (2).



Unless the plaster undercoat comes ready mixed, use a large clean bucket to mix up the powder with water. Use a clean wooden stick to do the mixing. It is easier if you add the powder to the water rather than the other way round. The plaster should have a thick creamy consistency.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



If the repair (or new plasterwork) includes a corner, fit metal angle bead to this first. Not only will it give a neat corner, but the bead will provide a guide for your levelling board. Cut the bead to length (with a hacksaw) and prime the cut ends. Fix it to the corner with dabs of plaster (3). Check it is vertical and leave the plaster to dry.

Before you apply the plaster, dampen the wall surface, using a large paint brush - this will help adhesion and make it easy to 'work' the plaster. On very absorbent surfaces (aerated concrete blocks, for example), add one part PVA adhesive to five parts water.

Transfer an amount of plaster to a hawk - a flat board about 30cm (1ft) square. You can buy a ready-made hawk or make your own from a piece of plywood nailed to a block of wood with a short handle (a bit of broom handle, for example) attached to it.

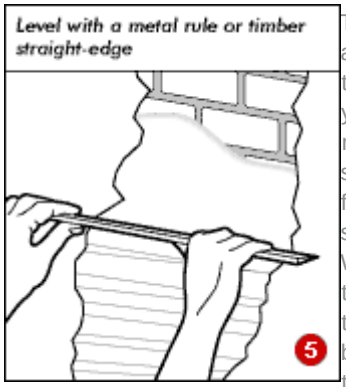
Carry the hawk to the wall and hold it in front of the area you want to plaster. In one movement, tip the hawk towards you, lift off an amount of plaster with the edge of a steel plasterer's trowel and press the plaster against the wall with an upwards sweep of the trowel (4).

The method of application is crucial - you start with the trowel at quite an angle to the wall and gradually reduce this angle as you move it up the wall. Do not allow the trowel to get flat against the wall or you will pull off the plaster you are trying to apply.

Carry on adding plaster until the whole area to be repaired is covered. Remember always to keep the trowel at an angle to the wall and leave the plaster slightly proud of the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

surrounding surface.



To get the surface level, use a piece of straight-edged timber held at an angle (or if you have one, a metal rule) moving it up the wall with a side-to-side action, holding it firmly against the existing sound plaster as a guide (5). When plastering a whole wall, timber screeds are attached to the wall (and levelled) before plastering to act as the guides for this straight-edge.

Take care removing the straight-edge or rule from the surface together with the plaster you have scraped off. You should now be able to see any hollows which can be filled with more plaster before ruling off again.

Keep a bucket of cold water handy at all times, so that you can keep tools clean - especially the plasterer's trowel.

Allow the plaster surface to harden (but not completely dry) before dampening it and smoothing it flat with the trowel (still held at a slight angle) (6). If you are applying a finishing coat, scratch the surface of the undercoat with the edge of the trowel to provide a 'key'.

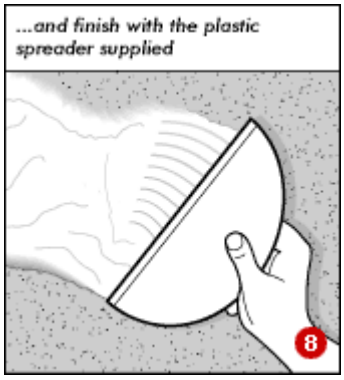
4 - Using DIY plaster finish

A DIY finishing plaster should be applied to the undercoat before the latter is completely dry. It can also be applied directly to plasterboard and to an existing plaster surface, provided this is roughened slightly (all paint and paper should be removed). Mix up the plaster finish if necessary with clean water as for undercoat.

Application methods vary for DIY finishing plasters. Some are applied in the same way as DIY plaster undercoat (with a plasterer's trowel) in two layers (1mm followed by 2mm), whilst others are applied with a paint brush (7) and then

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

smoothed with the plastic spreader supplied (8). Check the instructions for your plaster.



If you have used a plasterer's trowel to apply the plaster, give it a final smoothing with the trowel after it has started to harden. Dampen the surface with water as you do this - a simple spray bottle will help to apply this.

5 - Applying a textured coating

A textured coating will level up uneven surfaces and cover cracks up to around 3mm (1/8in) wide - the coating is flexible, unlike normal paint, and reduces the possibility of cracks reopening. Textured coatings can be used to provide a number of different finishes which, if required, can be painted in a colour of your choice.

As with all decoration, proper surface preparation is vital. Wallpaper (including painted wallpaper) must be removed and the surfaces thoroughly cleaned (in particular, getting rid of grease and nicotine stains). Sound paint can be left in place, but all loose and flaking paint (and all distemper) must be removed before you start. Remove any tiles from a ceiling along with their adhesive.

Porous surfaces should be treated with special sealer and cracks larger than 3mm (1/8in) should be filled with wall

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

filler: a special caulking tool is available to make this job easier. Filled cracks and joints between new plasterboard should be taped over with joint tape (tape should also be used on the edges of filled areas). If any parts of the wall are powdery or 'chalky', use a stabilising solution before applying the coating.

Mix up powder, following the manufacturer's instructions. To speed up this process, whisk attachments are available for both hand and powered drills. Ready-mixed products can be applied straight from the tub. Use masking tape to protect electrical fittings, timber paintwork and exposed plumbing pipes. Lay a dustsheet on the floor.

Textured coatings can be applied with a large paint brush (wall brush) or roller. The application method is different to paint as the coating is applied more or less in one go rather then being 'worked' once it is on the surface. Apply the coating to the wall or ceiling in bands around 60cm (2ft) wide; if you are applying a pattern, do this before applying the next band of coating.

A brush or roller will leave a relatively flat surface (its texture depending on the type of coating being used), but if you want to provide a decorative pattern, this is done once the coating is on the wall. There are several different texturing tools you can use to provide the pattern:

- patterned rollers for producing diamond, diagonal, bark and stipple patterns.
- brushes and stipplers for creating a wide range of textured effects.
- combs for creating artistic combed textures (including flower and rose designs as well as standard linear ones).
- lacers (triangular plastic hand-held blades) for smoothing tips of heavier random textures (broken leather, bark and swirls, for example) to reduce the sharpness of the peaks; a standard set includes medium and small sizes. The tool is kept damp with water and is used before the texture has gone firm.
- margin brush for creating borders around textured patterns and also for painting around fittings.
- You could also use a damp sponge to create a stipple effect or your own swirl design.

6 - Unwanted textured coating?

If you have moved into a different house and want to remove at least some of the patterned textured coating from the walls and ceilings, there are two choices: cover or strip. Covering is the easiest choice. You can get specific products designed for doing this and all you do is to apply them on top of the existing patterned coating (with a plasterer's

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

float) so that the surface is restored to a smooth flat surface which you can then paper or paint. Remember, though, that you will now have quite a thick coating. Stripping is the alternative. There are specific products made for stripping textured coatings, though they may not work on all types. If the chemical stripper does not work, you can try a steam wallpaper stripper to soften the coating so that you can strip it off by hand. A large hired type will work better than a DIY wallpaper stripper, but the job is messy and jolly hard work! Some old textured finishes may contain a small proportion of asbestos. For further details, consult the appropriate supplier or manufacturer.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A Backyard Pond is Alive!

Being around the water offers allure and beauty, which is why waterfront homes are admired by many. Your own backyard can be alive with the visual appeal and sounds of water in motion. These soothing sounds and the beauty of colorful fish swimming among your plants, brings your landscaping alive. It's fun to create this attractive feature and it will become the centerpiece of your backyard.

Before we get started I would like to answer some frequently asked questions about backyard ponds.

- **Will the winter cold kill my fish?** Most fish will naturally stop eating and hibernate at the bottom of the pond when the temperature of the water goes below 45 degrees. If you live in a climate where the pond will **completely freeze over** (even at the edges) you will need to create a hole in the ice for the fish to remain alive.
- **Will the winter cold kill my plants?** Yes, if it goes below freezing in your area. Bring plants inside for the winter months.
- **Do I need to filter the water?** That will depend on your climate and the design of your system. Ask a local dealer his recommendations for your geographical area concerning filtration. (look up in the Yellow Pages under ponds or water gardening) The action of water moving provides some natural filtration, so sometimes you can get away with only a fountain or waterfall. There are biological filters and cartridge filters available from pond supply outlets. We have provided links below to 3 sites that offer products, services and advice for building backyard water gardens.

Water Gardening and Pond Supply :

- B&Q
- WICKES
- FOCUS

Step 1. Educate yourself so you can make intelligent decisions. Learn about water gardening in your part of the country. Visit retail stores, shop out of a catalog click on the website links above. Determine the answer to such questions as, will I use a flexible liner or pre-formed shell...The location of my pond should take into account such things as availability of electricity...will I have a waterfall...etc.

We will describe how to install a **flexible vinyl liner pond** in this article. Flexible liners give you complete variety in the shape of your pond, and are extremely durable.

Step 2. Locate the area in your yard for the pond. Determine how deep you want your pond to be. The depth of a back yard pond will usually be between 18-24", but you determine that after study and deciding the particulars about your pond. Mark the outline of the pond shape with string or garden hose on the lawn. Remove sod and start diggin ! The

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

outside wall of the pond will have a step in it to hold potted plants just under the water. **Figure 2** below shows a profile view of the step in the side wall. You create this step by leaving the original dirt in place as you dig. This will make the step as solid as possible. The depth of this step is approximately half of the depth of your pond. This depth is also determined by the potted plants you plan on placing in the pond. **Figure 1** represents digging out the pond using a 2x4 board with level on top to make sure the outside edge is level all around the perimeter. You need to raise low areas so the entire perimeter is the same height. Check the depth as you dig to make sure the bottom is level as well.

Figure 1

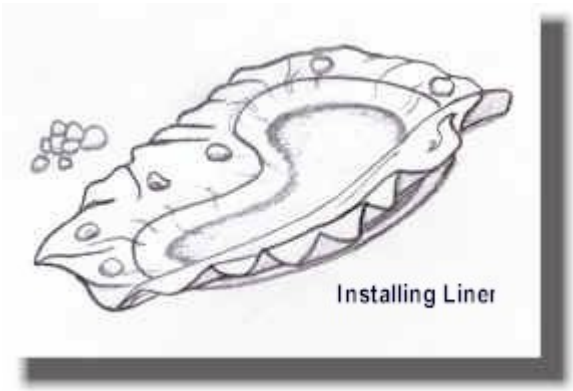


Figure 2

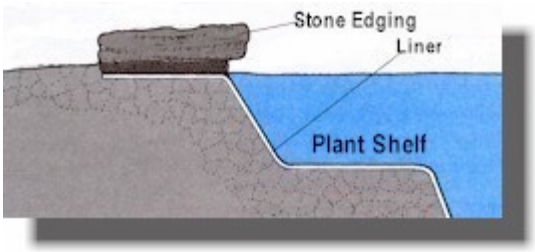
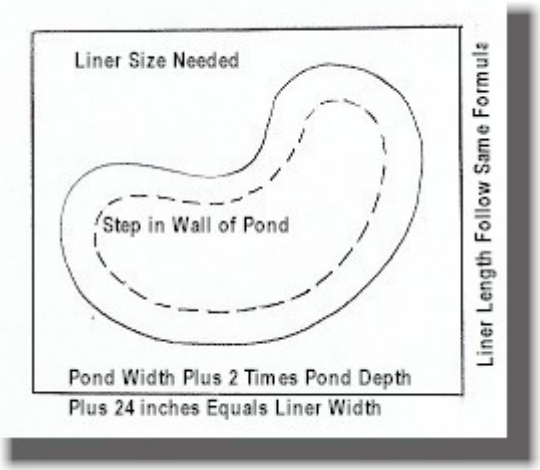


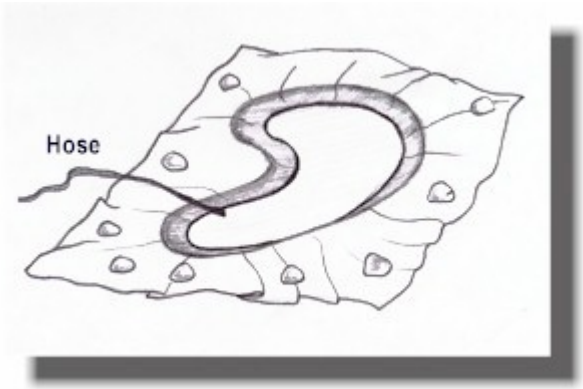
Figure 3



Step 3. Figure 3 shows how to measure your pond to get the right sized liner. The big square on Figure 3 represents the liner size needed for the pond in the drawing. To determine the right liner size, take the width of the pond and add twice the depth of the pond, plus 24 more inches. The length measurement will be done using the same formula.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Step 4. When hole is completed, drape liner over pond, centering it and placing stones around the edge. Start filling with water. As it fills, remove wrinkles and fold large creases into neat folds to be less noticeable.



Step 5. After pond is filled, trim excess liner to within 12 inches of edge of pond, and place your coping material around edge to give it a natural finished look. We recommend large flat stones because they can overhang the pond edge slightly, and they look very natural. See Figure 2 above.

Now your ready to add the finishing touches. This article covers the basics of how to install your own backyard pond. To finish the project you will need to investigate pumps, filters, plants and fish. Check out the 3 website links above for the specifics needed to have a pond that is exactly right for your area.

I know from personal experience that the catalog from Lilypons is complete and informative. Enjoy your new water gardening hobby.

Waterfall built next to pond with dirt from pond excavation

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

BASIC PLUMBING

SKILL LEVEL

The simple skills required for basic plumbing are explained in this project.

It helps to have some metalworking experience.

SAFETY FIRST

Take care when working with a blowtorch in loft spaces. Be aware that pipes take time to cool after exposure to the blowtorch flame.

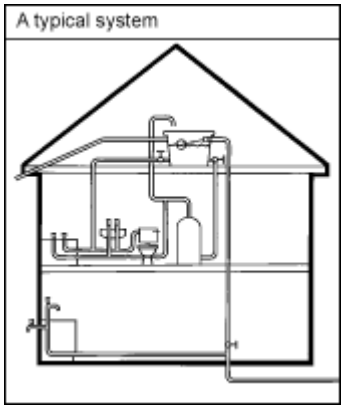
INTRODUCTION

If you can undertake the basic work yourself, you save money and the inconvenience of waiting for a plumber.

Basic plumbing repair needn't be a daunting task, all you need to get started are a few essential tools, a working knowledge of your system and an ability to identify problems.

2 - Preparation

Step 1: Familiarise yourself with the layout of your plumbing - this will enable you to identify the cause of a problem and shut off the water for servicing.



Step 2: Locate the stopcock on the rising main - the pipe that brings fresh water into your home. The stopcock controls the flow of water and is used to shut off the entire supply in an emergency. The stopcock may be found under the kitchen sink, beneath the stairs or in the cellar or basement.

Step 3: Check if there are isolating valves on the low pressure pipes to taps, toilet cisterns and household appliances - these valves enable servicing to be carried out without turning off the mains. They are usually located next to the storage cistern in the loft.

Make up a kit of basic plumbing tools and a set of spare washers to fit the taps and valves around the house.

Keep your plumber's phone number handy in case you are

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

faced with a serious problem.

3 - Draining the system

In order to repair a leak, run new pipes or service a toilet cistern, it is necessary to be able to drain various parts of the system.

Water is supplied to a house under relatively high mains pressure. In most houses it is directed via the rising main pipe to a cold water storage cistern in the loft. A pipe connected to the rising main feeds drinking water directly to the kitchen sink. All other taps and fittings, including the hot water storage cylinder, are supplied indirectly by a low pressure gravity-fed system from the storage cistern.

To drain the cold water kitchen tap and pipe:

1. Close the stopcock on the rising main
2. Open the tap to empty the short length of pipe.

To drain cold water taps in the bathroom / to drain the cistern:

1. Shut off the cold feed valve from the storage cistern in the loft.
2. Run the bathroom taps.

or:

1. If there is no isolating valve, shut off the supply of water to the cistern by tying the arm of the float valve to a batten placed across the top.
2. Run the taps to drain the cistern. Use this method if you ever need to work on the cistern itself.

To drain a toilet cistern:

1. Tie up the float-valve arm.
2. Flush the toilet.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If you need to work on the supply pipe to the cistern, shut off the water supply from the storage cistern in the loft (see above).

To drain hot water taps:

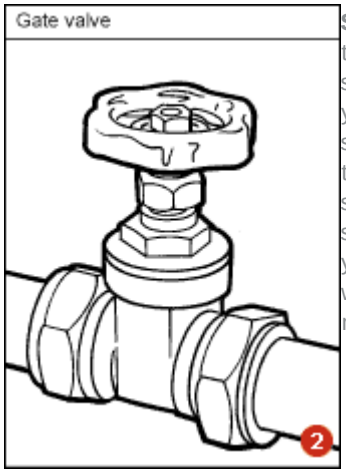
1. Turn off the immersion heater and the central heating boiler.
2. Shut off the supply of water from the storage cistern in the loft to the hot water cylinder.
3. Run off the water from the hot taps.

To drain the hot water cylinder:

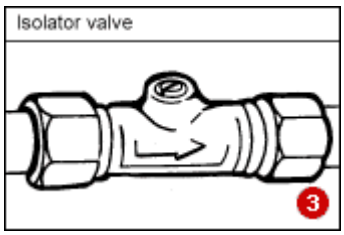
Attach a hose to the draincock at the base of the cylinder. If the cylinder contains a heat exchanger fed from the boiler, this can only be emptied through the boiler draincock.

4 - Fitting extra valves

To save time and water when draining pipes for minor repairs and servicing, install extra valves to divide the system into sections or to isolate individual fittings and appliances.



Step 1: Fit gate valves on the cold feed pipes from the storage cistern. This will save you having to drain the stored water when servicing the low pressure side of the system. If you fit a second stopcock on the in-feed pipe, you can drain the cistern without turning off the rising main.



Step 2: Fit isolator valves in the supply pipes to taps and appliances. This will enable you to isolate the individual fitting for servicing.

5 - Filling the system

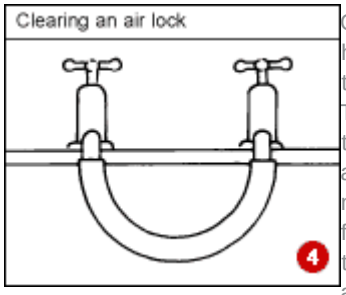
Step 1: First close all taps and drainage points, then open the main stopcock. Check that the float valves operate

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

properly as the water levels rise in the storage cisterns. If water pours from a cistern overflow, the valve may have stuck open. Work the float arm up and down a few times to free the valve.

Step 2: When the system is full, open the taps. Water is likely to splutter out at first as trapped air is released.

Step 3: If water fails to flow or only trickles out, there may be an airlock. Connect a length of garden hose to the high pressure kitchen tap at one end and the airlocked tap at the other.



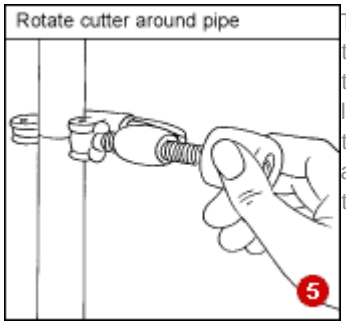
Opening both taps allows the high pressure water to push trapped air out of the pipe. Turn off the taps, disconnect the hose and test the airlocked tap again. Repeat if necessary allowing more time for the air to clear. Should the air lock not clear, try again by entering the system. If no success, call a plumber.

6 - Cutting & joining pipes

Most homes are plumbed with 15mm, 22mm and sometimes 28mm diameter copper pipe. Joining pipework is basic to all plumbing installations and many repairs.

Copper pipes can be joined with brass compression fittings or soldered capillary joints. You can cut copper pipe with a fine toothed hacksaw, but it is easier and more accurate if you use a tube cutter.

Whatever type of fitting you use, the pipe must first be cut perfectly square.



To cut a pipe, lightly clamp the cutter on the pipe, with the cutting wheel on the cut line. Rotate the cutter around the pipe, tightening it a little after each revolution, until the pipe is severed.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Remove burrs from inside the cut end, using the pointed reamer on the cutting tool or use a small half-round file.

To join copper pipes with a compression fitting:

Step 1: First remove the cap nut and slide it over the end of the pipe.

Step 2: Slip the brass ring, known as an olive, onto the pipe.

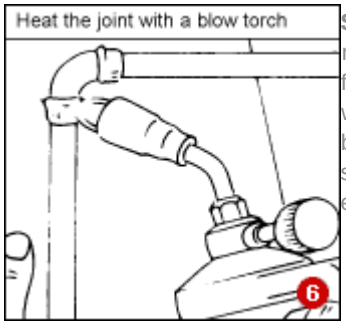
Step 3: Push the pipe into the body of the fitting, slide the olive up to the fitting and tighten the nut by hand.

Step 4: Tighten the nut fully with a pair of spanners, one to hold the body of the fitting, and the other the nut. Assemble the other half of the fitting in the same way.

For soldered joints, use pre-soldered fittings as these are easier to work with:

Step 1: Clean the cut ends of the pipes and the inside of the fitting to a bright finish, using wire wool.

Step 2: Apply a paste flux to the fitting and pipes, then push the parts together.



Step 3: Using a heatproof mat as a shield behind the fitting, evenly heat the joint with the flame of a gas blowtorch until a rim of shiny solder appears around the ends of the fitting.

Step 4: Remove the heat and leave the metal to cool.

7 - Mending damaged pipes

If you accidentally drive a nail through a copper pipe under the floor, you may not even notice for a while. The only indication is a faint hissing until, eventually, a damp patch appears on the ceiling in the room below.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If your floors are to be carpeted or covered with sheet vinyl, paint the lines of hidden plumbing across the floorboards to avoid nailing into pipes in the future.

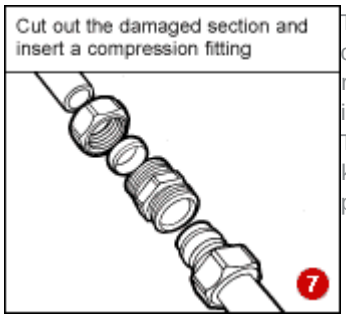
Step 1: Identify the system which is supplying the pipe.

Water is supplied to a house under relatively high mains pressure. In most houses it is directed via the rising main pipe to a cold water storage cistern in the loft. A pipe connected to the rising main feeds drinking water directly to the kitchen sink. All other taps and fittings, including the hot water storage cylinder, are supplied indirectly by a low pressure gravity-fed system from the storage cistern.

Step 2: Drain the system and uncover the pipe. See "Draining the system"

Step 3: Cut out the damaged section with either a fine toothed hacksaw or a tube cutter, if you have one to hand. See "Cutting & joining pipes "

Step 4: Fit a straight compression joint in the pipe run.

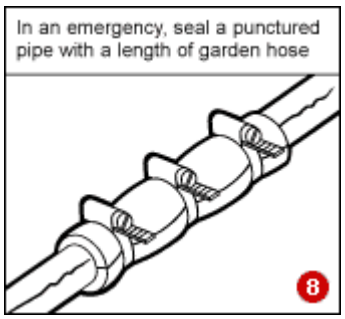


To join copper pipes with a compression fitting, first remove the cap nut and slide it over the end of the pipe. Then slip the brass ring, known as an olive, onto the pipe.

Push the pipe into the body of the fitting, slide the olive up to the fitting and hand tighten the nut. Now tighten the nut fully with a pair of spanners, one to hold the body of the fitting, and the other the nut. Assemble the other half of the fitting in the same way.

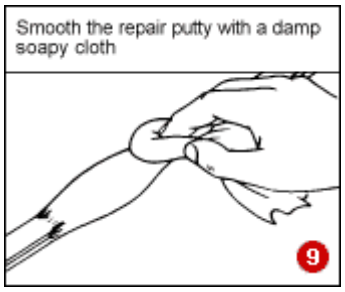
- If you cannot move the pipe sufficiently to fit a conventional fitting, use a slip coupling that can be slid along the pipe.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



- In an emergency, seal a punctured pipe temporarily with a short length of garden hose slit lengthwise and held in place with hose clips.

You can also make a serviceable repair using an epoxy putty repair kit:



1. Clean the metal locally with wire wool.
2. Mix the two-part putty, following the manufacturer's instructions, and press it into the hole.
3. Build up the putty to form a collar around the pipe, about 6mm (1/4in) thick and 50mm (2in) on either side of the hole.
4. Smooth the putty with a damp soapy cloth.

8 - Thawing frozen pipes

Uninsulated pipes exposed to freezing temperatures are likely to become blocked with ice. This commonly occurs in cold uninsulated lofts. Garden taps are also prone to freezing. You may not be aware of the problem until the water refuses to flow when you turn on a tap.

Old plumbing, especially the rising main, is invariably made from lead which, being a soft metal, has a tendency to split as the water freezes - call in a qualified plumber to deal with permanent repairs to lead pipework.

Step 1: Trace the location of the blockage by following the run of frozen pipework.

Step 2: Because copper is a good conductor of heat, you can usually thaw a pipe, using an electric hair dryer. Warm the pipe gradually, working back from the affected tap or valve. Treat old lead pipe in the same way, but warm the whole pipe evenly. If you cannot use a hairdryer, wrap the frozen pipe in hot towels.

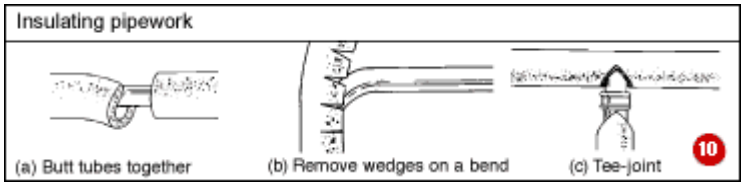
Step 3: Insulate vulnerable plumbing to prevent it freezing again. You can buy lagging bandage to wrap around the pipework, but the job is much easier using foamed plastic tubes

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

split lengthwise to fit over standard size pipes.

When insulating long straight runs, butt the ends of the tubes together and bind them with self-adhesive PVC tape. Cut a tube with a sharp knife to fill any gaps.

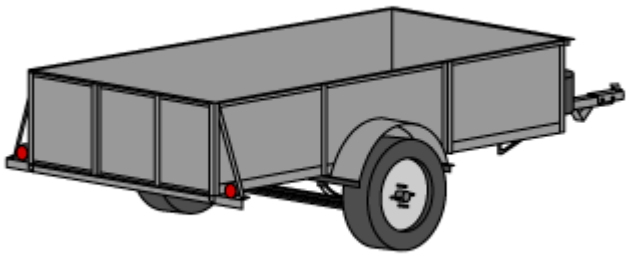
- At a bend, cut a series of wedges from the split edge to allow the tube to be formed around the curve. Use tape to bind and seal the tube in place.
- At a right angle elbow joint, mitre the ends of two adjoining foam tubes.
- When two pipes meet at a tee-junction, cut a wedge from the side of the straight tube to receive the tapered end of the tube joining it.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Utility Trailer

OVERVIEW



Introduction

You can build this handy trailer to haul lumber, topsoil, lawn equipment.just about anything within a 2,000-pound capacity. The lightweight, bolt-together design makes it easy to use and not too difficult to construct.

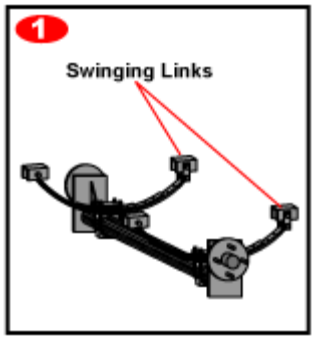
BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

- Beginner - about a week
- Intermediate - about 4 to 5 days
- Advanced - about 2 to 3 days

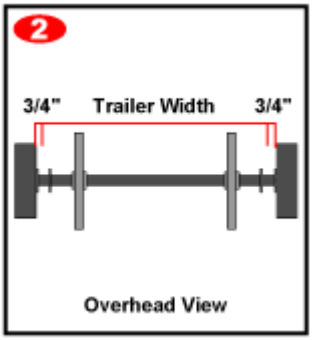
STEPS

1. If you buy a complete axle assembly, you'll have no welding. It's also important that you use a very robust drill for the metal. A heavy-duty 3/8" variable speed drill is the minimum required.
Place the springs over the mounting pads on the axle and attach using the U-bolts and square plates. Using nuts with lock washers or compression nuts, tighten snugly for now. Over the ends of the springs, install the shackles. The swinging link, which allows the spring to distort under load, should be at the rear of the trailer.

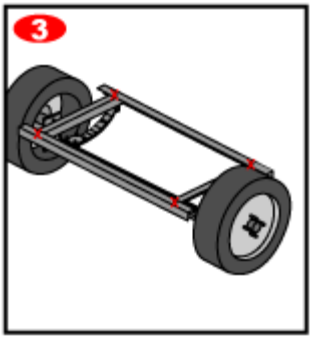


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

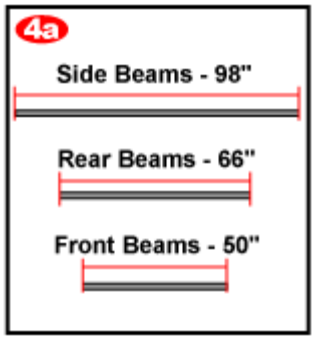
2. Install the back wheels to the wheel mounting studs, then measure the distance between the tires to determine trailer width. The space between the wheels must be large enough to allow at least 3/4" clearance between the tire and the finished side of the trailer.



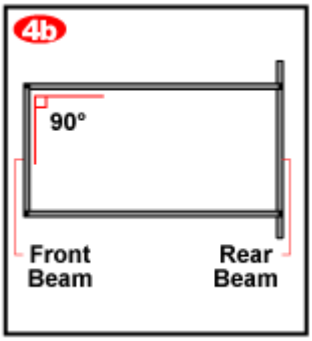
3. After cutting two crossbeams from the angle iron, center the crossbeams over the shackles and spring braces. Making sure that the springs are square to the axle, mark the location of the bolts on the crossbeams and drill 1/2" holes. With lock washers, bolt the crossbeams through the spring braces and into the shackles, pointing the bolts downward. Now tighten the U-bolt firmly.



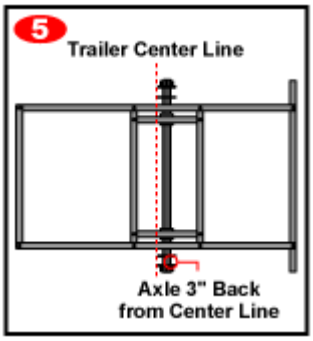
4. a From the 2" angle iron, you'll cut your two side beams, the rear beam and the front beam to these dimensions.



4. b Clamp the side beams, the rear beam and the front beam together at the corners using C-clamps or locking pliers and make sure the assembly is square.

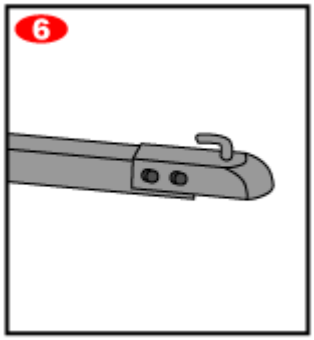


5. Now mark the center line of the trailer and place the frame over the wheel assembly with the center line of the wheels just behind the trailer center line. The width of the crossbeams should be the same as the width of the clamped-together frame. Clamp the frame to the crossbeams. Drill and bolt together the four corners of the frame with 1/2" bolts. Drill and bolt the crossbeam assembly to the side rails with the same size bolts. All must point downward and have lock washers.

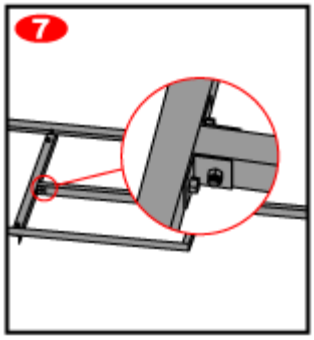


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

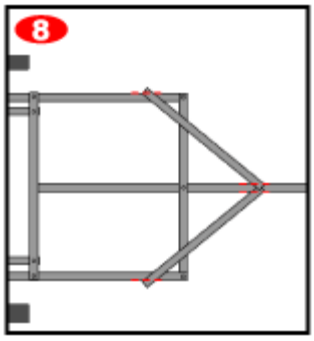
6. Clamp the coupler at the end of the tongue. Drill the tongue and bolt the coupler in place using bolts.



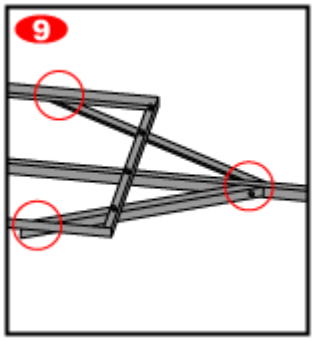
7. To install the tongue onto the front crossbeam, first cut two lengths of L-bracket and clamp the L-brackets to opposite sides of the tongue. Drill through them simultaneously, and bolt them together. Clamp the tongue into position at the front of the trailer and at the crossbeam. Then drill and bolt the tongue into the crossbeam using bolts, and onto the front beam with a 3" bolt.



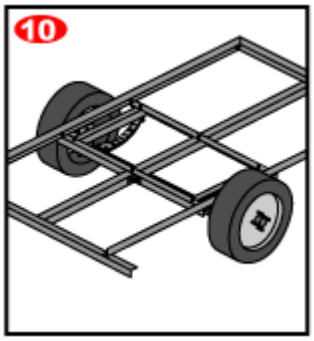
8. After cutting the two diagonals into 51" lengths of 2" angle iron, prop up the tongue of the trailer to a roughly horizontal position. Hold the diagonals into position and mark the angle on the ends. Cut the ends to the proper angle with a hacksaw or jigsaw. With a grinder, round over the protruding corners of the diagonals where they meet the side beams.



9. Clamp the diagonals into place and drill and bolt them at the tongue, and along the frame.

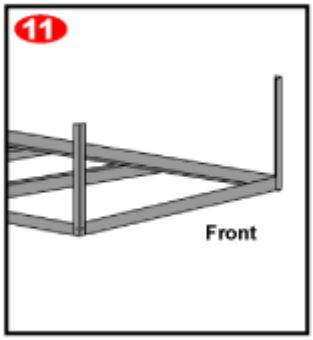


10. Cut the center deck support to length from the 2" angle iron, and cut the rear deck support from the same stock. These lengths will have to be modified if 22" springs aren't used. Cut the L-bracket from 2" angle iron. Drill and bolt the deck supports using 1/2" and 1" bolts with lock washers.

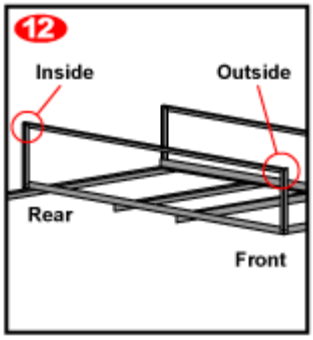


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

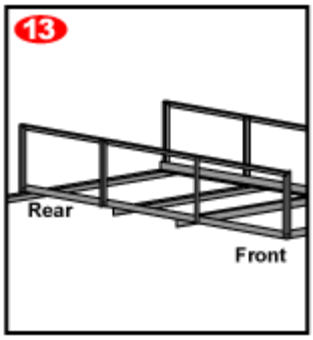
11. Cut the eight boxframe uprights to length from the 1-1/4" angle iron. Clamp the two corner uprights to the front of the trailer frame, positioned so they wrap around the corner, drill 5/16" holes and bolt each of them at both the front and the side with carriage bolts. Now install the two corner rear uprights the same way, with the angle facing outward.



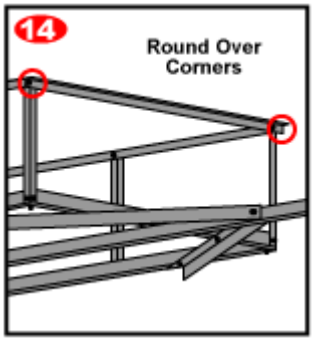
12. Cut the two box frame side rails to length from the 1 1/4" angle iron. Then install them at the top of the corner uprights. With flanges facing outward, mount the side rails on the outside of the front upright and on the inside of the rear upright. Clamp it into place and square it before attaching with your carriage bolts.



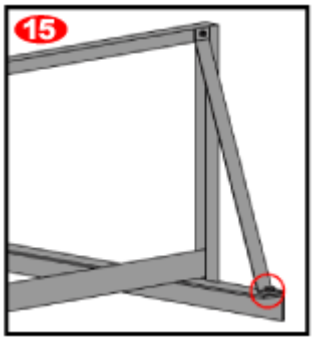
13. Now you can install the two inner uprights on the front frame and the two on the rear frame. Space and clamp them so that about 31" separates each upright. Drill and bolt the inner uprights into place with the carriage bolts.



14. Cut the box frame front rail to length from the 1-1/4" angle iron. Round over the ends with your grinder, clamp it into place against the corner uprights and drill and bolt.

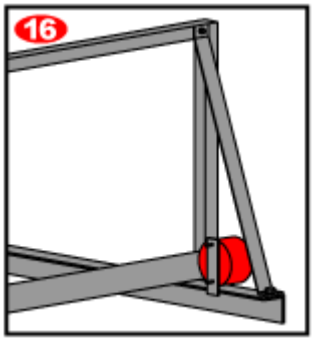


15. Cut two box frame braces to length from your 1" flat iron, and bend the ends 1" on each side so that the brace fits diagonally across the rear of the trailer sides. Drill and bolt the lower end into the frame with carriage bolts. Remove the top bolt of the box frame, drill the hole through the brace, and rebolt the three pieces of metal together with the same bolt.

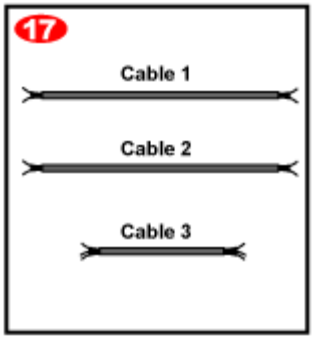


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

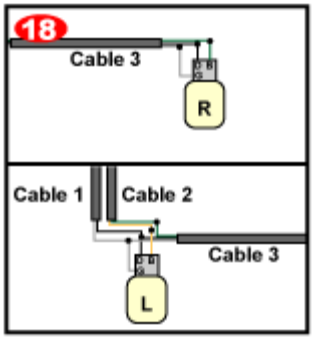
16. Install your taillights within the protective triangles formed by the braces, and with an L-bracket for mounting. Create the L-bracket out of the 1" flat iron, sizing and shaping it as required by the dimensions of the taillight.



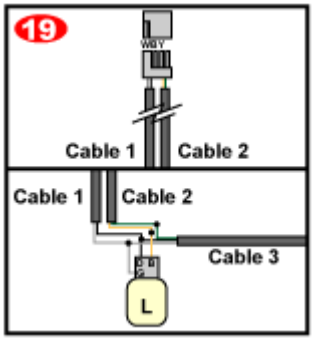
17. There are several ways to wire your utility trailer, but we'll show a standard 4-wire harness with an outdoor-rated extension cord, which is less expensive than automotive wiring. Since this cord isn't available with four wires, you must tie together two cables with two wires each. You'll also need a short piece of 3-wire cable that will cross over from one taillight to the other.



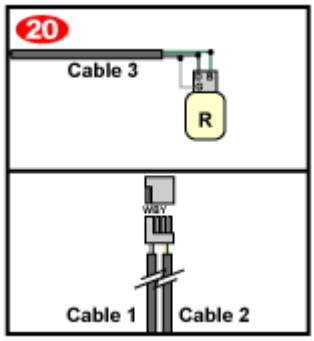
18. Start by connecting the three wires of the crossover cable to the three wires of the right taillight. The color-coding of these wires don't matter, but you'll have to know which operates the bright filament and which operates the dim one. At the left taillight, connect the ground wire from the right taillight to that of the left and to one of the wires in cable 1, which is one of your 2-wire cables. The ground wire is always the one that connects to the metal case of the light bulb.



19. At the plug end, connect the ground wire to the white wire to complete the grounding circuit. At the left taillight, connect the dim light wire from the right taillight to that of the left and to the remaining wire in cable #1. At the plug end, connect that wire to the brown wire. The running lights circuit is now complete. At the left taillight, connect the bright light wire from the left taillight to one of the wires in cable #2.

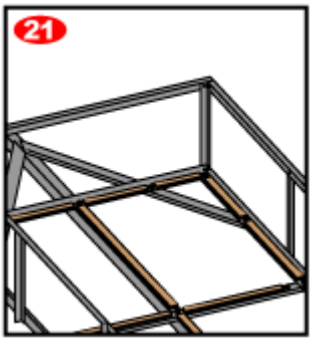


20. Connect the bright light wire from the right taillight to the other wire of cable #2. At the plug end, connect the bright light wire from the left taillight to the yellow wire of the plug. Connect the bright light wire from the right taillight to the green wire of the plug. Test the lights, then solder and tape all exposed joints.

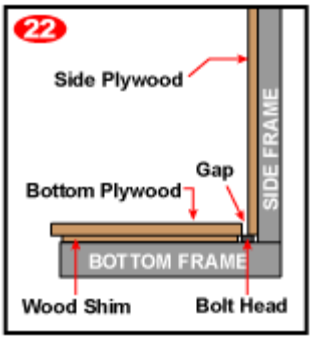


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

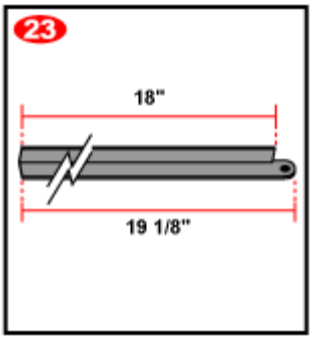
21. The bolt heads at the bottom of the trailer will prevent the bottom sheet of the trailer from seating properly against the frame, so for shims, cut some strips of rot-resistant wood from a 2x4 or 2X6 to form strips 3/8" thick and 1 1/2" wide. Cut the shims to lengths that fit between the bolts, and cement them in place with silicone sealant.



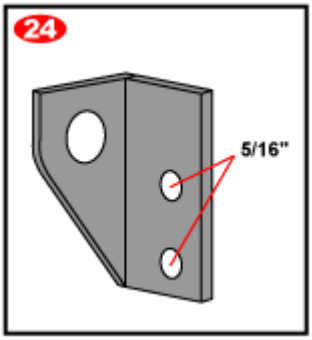
22. To make a plywood box liner, start by cutting your two side liners to shape from 3/4" plywood. Remove the bolts holding the box frame together and drill the holes through the plywood, facing out. Then squeeze a bead of silicone sealant along the wood shims and drop the plywood bottom into place. Drill 5/16" holes through the plywood and the frame in about ten places along the perimeter and two places in the center of the sheet. Bolt it into place using carriage bolts.



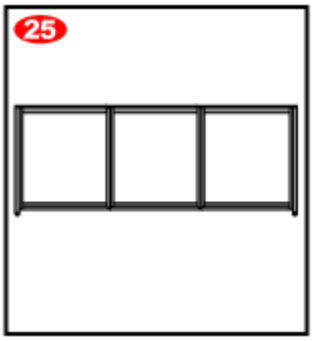
23. Cut two 19 1/8" sections of 1-1/4" angle iron for the tailgate ends, then further cut one end of each down to 18" lengths. Note that they should be mirror images of each other. In each, drill a 1/2" hole centered in the piece, 5/8" from either edge and 1/2" from the end. Then grind the ends round.



24. Cut the two hinges from 2" angle iron as shown. Make sure the hinges are mirror images of one another, and grind the sharp edges round. The 1/2" hole position should be centered, 1/2" from the edge. Drill the two 5/16" mounting holes below center.

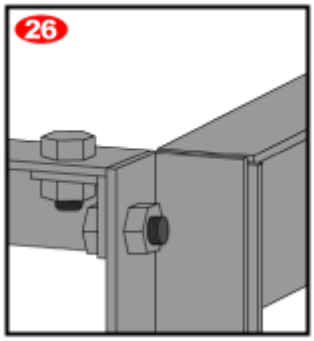


25. From the 1-1/4" angle iron, cut two lengths for the tailgate ends.two lengths for tailgate rails.and two lengths for tailgate braces. Arrange the parts in a horizontal frame with the rails on top and bottom, the braces in the middle, and the tailgate ends on either end. Form three roughly equal-sized boxes.

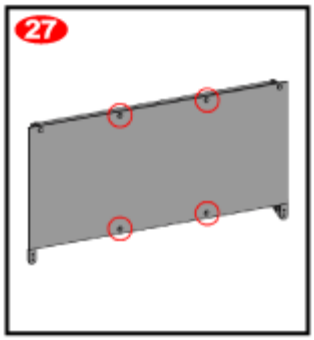


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

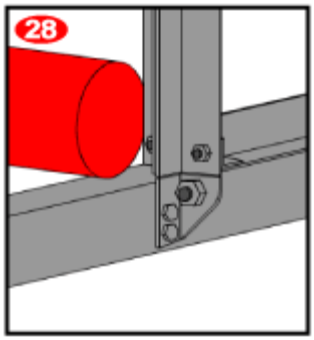
26. Next, cut four 1" long L-brackets from the 1-1/4" angle iron. Clamp the corners together and drill through both layers of metal together. Bolt them together with 5/16" bolts.



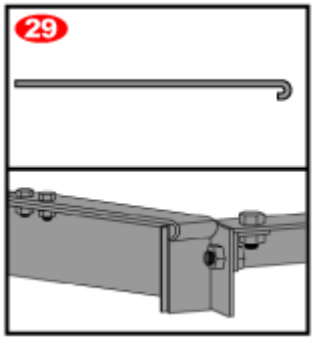
27. Cut your tailgate sheet to size to fit the tailgate. You may use either 18-gauge sheet metal or plywood of 3/8" to 3/4" thickness. Whichever you use, drill through at the locations of the four center bolts and bolt it through the framework using the existing bolts. The corner bolts are intended to also hold the drop chains, so they should be sized appropriately.



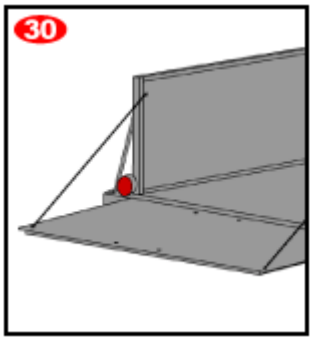
28. Clamp the tailgate hinges into place. The tailgate should be centered and the aligned with the top edges of the trailer sides.



29. Using lengths of 1" flat iron, mount each of the two latches into a vice with about 3/4" protruding. With a torch, heat the bend line red hot and hammer the end to shape. Grind away all sharp edges, and clamp each latch into place on the side of the trailer at the location of the bolts. Test latches to ensure that the tailgate snaps shut with little effort. Drill through the two layers of metal at the same time and bolt them together with 5/16" x 1" bolts.

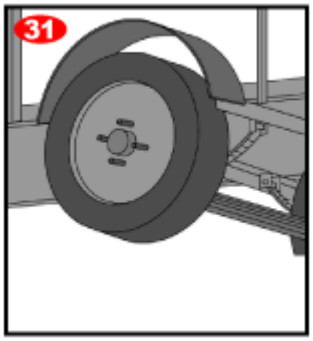


30. Using light chain rated at 200 to 300 pounds, bolt the ends of the tailgate with 1 1/4" x 1/4" bolts.

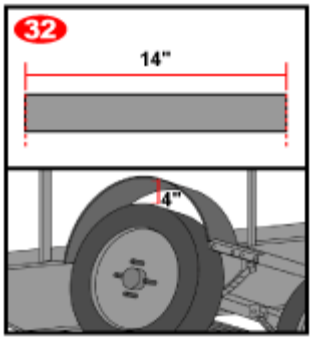


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

31. Make your fenders by cutting an 8" wide ring from an empty plastic barrel with a wood-cutting jig saw. Cut the ring in two and trim the length to fit your wheel. The barrel diameter is smaller than the wheel, so it will have to be flexed into position and bolted to the fender brackets.



32. For the fender brackets, cut two 14" lengths of 1-1/4" angle iron. Clamp them to the desired location and drill and bolt them into place using 5/16" bolts. Note that there should be a 4" gap between the top of the wheel and the fender.
Congratulations, you now have a utility trailer that will be one of the most useful pieces of equipment you own.



SHOP LIST

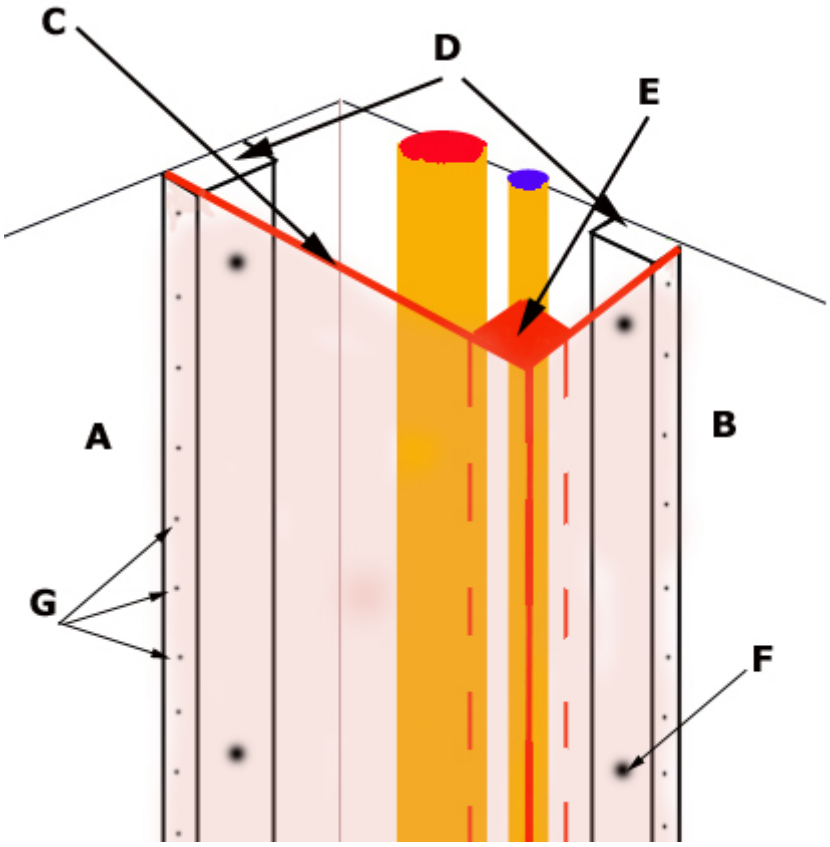
Materials List
Axle assembly (abut 62-1/2" between wheel flanges)
U-bolt kit (sized to fit the axle)
Shackle kit (sized to fit the springs)
(3) Wheels (12", 13" or 14", sized to fit axle hubs)
Coupler (sized to fit over 2" square tubing)
(2) Tail lights (sized to fit within triangle formed by boxframe brace)
(2) Tailgate chains (500 lbs. or greater capacity, trimmed to fit)
(2) Ramp hinges (6" gate hinges or 36" x 1" wide piano hinge)
(2) Fenders (cut from plastic barrel or buy to fit wheels)
(2) Spare tire mounting rods (10" x 3/8" dia. Threaded rod)
(2) Springs (22" measured between mounting bolt centers)
(2) Safety chains (18", 1,000-lb. rating, minimum)
Tailgate sheet (53" x 18" 18-gauge sheet metal or plywood)
Bottom liner (49" x 97" 18-gauge sheet metal or 4X8 3/4" plywood)
(2) Side liners (18" x 49" x 3/4" plywood
Front wall liner (18" x 49" x 3/4" plywood)
(25) Bolts (1/2" x 1" long)
(4) Bolts (1/2" x 3" long)
Bolt (1/2" x 4" long)
(64) Bolts (5/16" x 3/4" long)
(200) Pop rivets (1/8" x 1/2" long)
Tongue (78" x 2" x 3/16" square tubing)
Tongue support (12" x 2" x 1/8" flat iron)
Mild Steel:
- (52 ft.) 2" Angle iron (3/16" or 1/4" thick)
- (51 ft.) 1 1/4" Angle iron (1/8" thick)
- (6 ft.) 1" Flat iron (1/8" thick)

Tools List
Jigsaw
Hacksaw
Heavy duty drill
Wrenches
Angle grinder or bench grinder
Locking pliers
Basic hand tools

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

BOXING IN PIPES



In the picture above you can see we have shown a simple pipe boxing. A & B represent, in this case, two walls, with the pipes fixed or running up wall B. This could just as easily be a box fixed between the wall and the floor if your pipes are running horizontally. With A representing the floor and B, the wall or skirting. The principle is the same in both cases. The materials you will use will vary depending on the size of your box but for most applications either ¼ inch plywood or plasterboard is good.

Remember as with all carpentry related projects. Measure twice-Cut once.

Read all of this project before starting work. When the two sides of your boxing meet, there will be a join. Ideally you would like this joint as discreet as possible. If you use the diagram above and the instructions below, the joint will always be seen on the same face as the board you have fixed the batten to.

D represents two battens, usually 50 x 25mm is a good size although in most applications 38 x 19mm is fine. Fix these battens to the surface, as close to the pipes as possible. For masonry walls you will need a 5.5 or 6mm masonry drill bit, red wall plugs, 2 inch number 8 screws and a hammer action power drill, for plasterboard walls see our fixing to plasterboard project. For lathe and plaster walls see our fixing to lathe and plaster project.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The screws, shown as F above, should be about 400mm apart. Next you need to measure along the line of C, I.E. from wall A, to the face of the batten you have fixed on wall B. Then measure the length of the piece of board you need from floor to ceiling or whatever two surfaces this box is between.

Having cut the board C you now need to fix batten E to it. The size of this batten again depends on the size of your boxing but normally 38 x 38mm is fine. Batten E is cut to the same length as your boxing and maybe just a mm or so longer. This will give it enough length to fit tightly between the two surfaces and give the boxing greater strength. Be careful not to cut it too long and damage the ceiling or walls as you push it into position. The batten can be fixed with either screws or panel pins, but whatever you use for any of the surface fixings, remember you may need to decorate so get the heads of the fixings slightly below the surface of your box. The holes can be filled later. We always use a little wood glue on these joints as well.

Having fixed board C to batten E place them in position against the batten on wall A. A little glue and some panel pins or screws (as shown by G) will hold the board in position together with the tightness of batten E "wedged" into position.

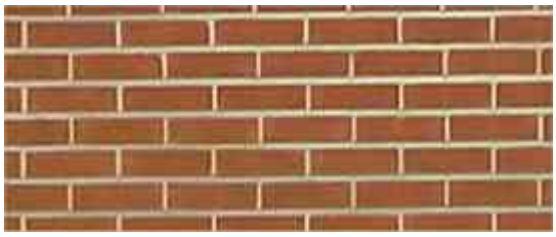
Next cut the other side of the board and glue, pin or screw into position. If you are using plasterboard for your boxing then its best to use drywall screws as they are guaranteed not to rust and bleed through either your plaster or paint. Fill all the screw holes and pin holes and you can then run around the edges with some decorators caulk (Flexible filler in a tube applied using a sealant gun) to hide the joints between box and walls/ceiling. If this box is in a bathroom and you intend to tile it, use an undiluted coat of PVA adhesive to paint the boxing before you tile. This allows the tile adhesive to stick properly on the surface you have used.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Brick Bonds

stretcher - flemish - english - american

Stretcher Bond



Stretcher bond is the commonest bond used today and the least interesting in appearance. It can be made more interesting by laying a course of different coloured bricks or to lay such bricks to form a pattern on a wall.

- Stretcher bond wall
- Stretcher bond wall with piers
- Stretcher bond piers

Flemish Bond

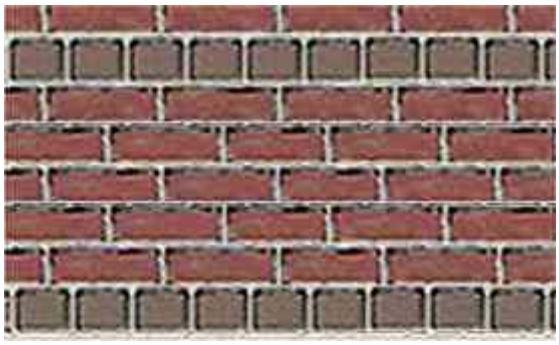
Flemish bond consists of alternating headers and stretchers along each course with the headers centred on the stretchers above and below.

English Bond

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

English bond consists of alternating courses of headers and stretchers, with the alternative headers centred over and under the vertical joints of the stretchers.

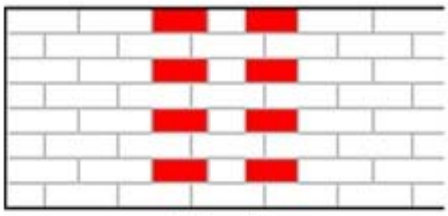
American common bond



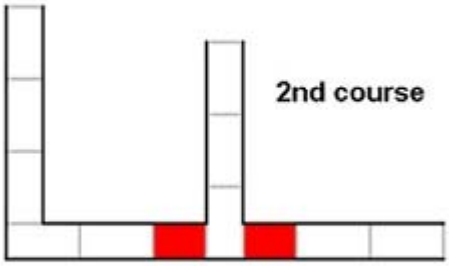
American common bond is similar to the English Bond but the courses of headers are separated by approximately five courses of stretchers.

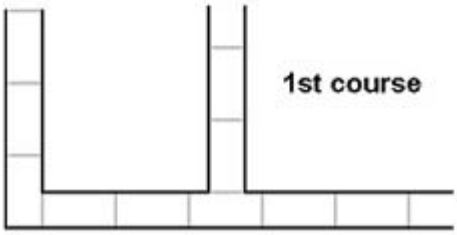
Stretcher Bond Brick Walls

English bond - *Flemish bond*



Elevation





Walls built using the traditional Stretcher bond are just a half brick wide. As with any wall built of brick, no two adjacent vertical joints should be in line.

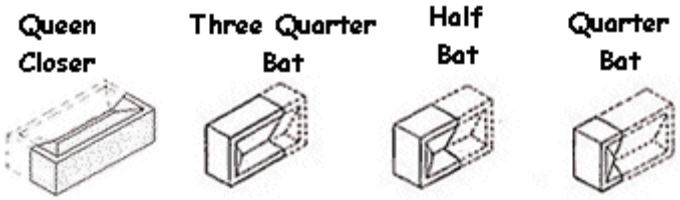
With a straight wall this is not a problem, just offset each course by half a brick.

When turning a corner at the end of a straight run again causes no problems, just interlock the two runs of bricks on every other course.

When joining into a wall part way along the wall, it's necessary to use two 3/4 bats (coloured red - one on either side) on the main face of the wall on every other course.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

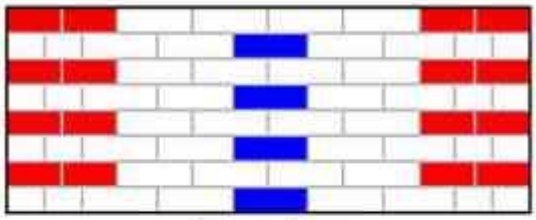
Bricks and Bats



Stretcher Bond Walls with Piers

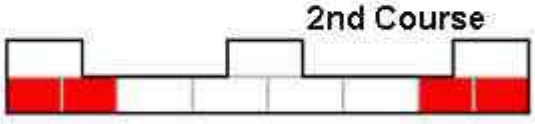
Walls build using the traditional stretcher bond are just a half brick wide and as such are relatively unstable and generally if they are higher than about 40 cm (5 courses), piers are required to strengthen them.

As with any wall built of brick, no two adjacent vertical joints should be in line.



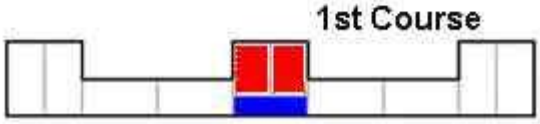
Elevation

For piers at the ends of a wall, the first (and alternate) course should have two full bricks placed at right-angles to the run of the wall. The second (and alternate) course should use two 3/4 bats (coloured red) in the face of the wall and a full brick behind.



2nd Course

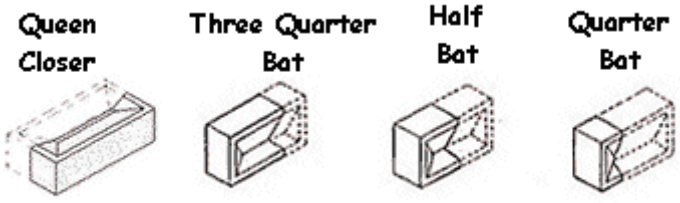
For piers in the run of the wall, the first (and alternate) course needs a 'Queen Closer' (coloured blue) in the face of the all with two 3/4 bats behind. The second (and alternate) course uses full bricks in the face and a full brick behind.



1st Course

The piers can be strengthened by embedding a piece of mat reinforcement into the mortar of alternate courses.

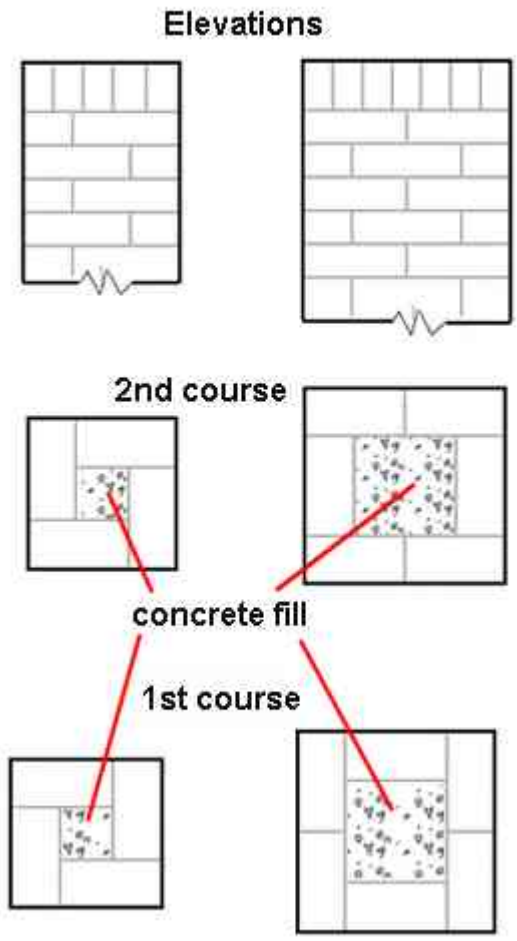
Bricks and Bats



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Stretcher Bond for free standing Brick Piers

A free standing brick pier (or isolated pier as it is sometimes called) is a pillar of brickwork not connected to a wall. It can be used to carry the ends of beams to form a pergola, the base of a sundial or bird bath, or for hanging garden gates.



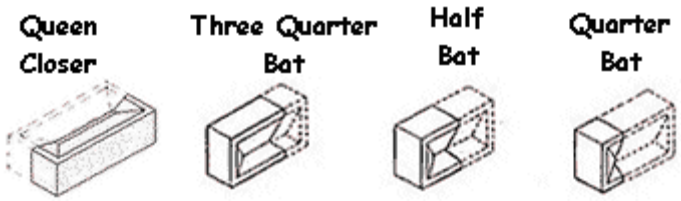
Piers vary in size (both in width and height) and types of bond used.

On this page we show a couple of simple stretcher bond piers, Both designs only use full bricks so there is no need for the bricklayer to cut any bricks.

The bricks will leave a hollow centre which should be filled with concrete once the mortar has been allowed to harden (wet concrete will exert an internal pressure which could cause the brick mortar to fail if the concrete is inserted too soon).

The centre concrete should be inserted in one go so that it can form one block of from the base of the pier to the top without any weak joints within the concrete. If considered necessary, steel reinforcing rods can be inserted into the centre concrete fill.

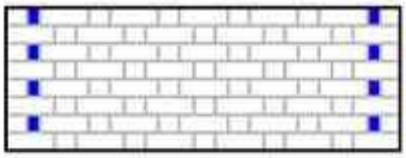
Bricks and Bats



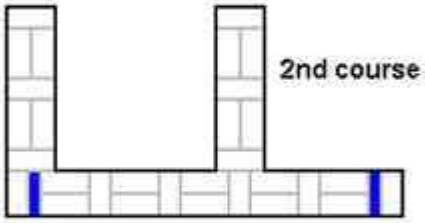
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

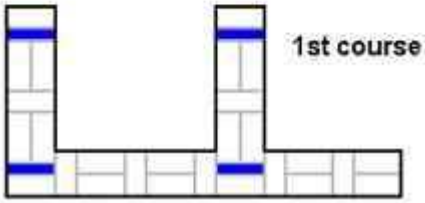
Flemish Bond Brick Walls

english bond - *stretcher bond*



Elevation





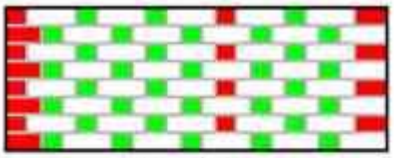
Garden walls built using Flemish bond are one bricks wide. As with any wall built of brick, no two adjacent vertical joints should be in line.

With a straight wall this is not a problem, just offset each course so that the header bricks are centred on the stretcher bricks on the course below.

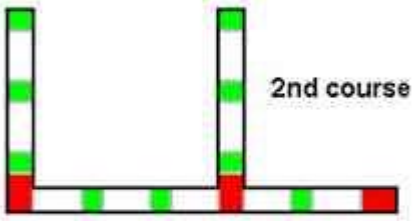
When turning a corner at the end of a straight run, a Queen Closer (coloured blue) is required on each course.

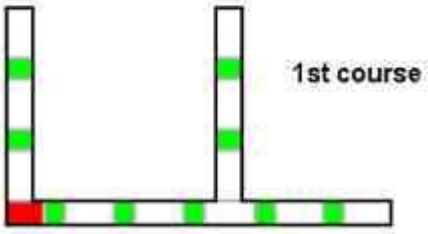
Joining into a wall part way along the wall, is the same as for the end turn except that a Queen Closer is only needed on every other course.

Use Flemish bond for a half brick width wall can give a decorative finish but does require the use of quite a few half bats (coloured green) and three quarter bats (coloured red).



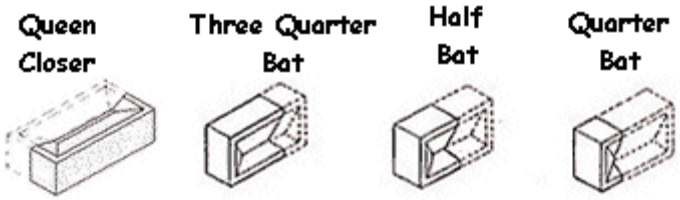
Elevation





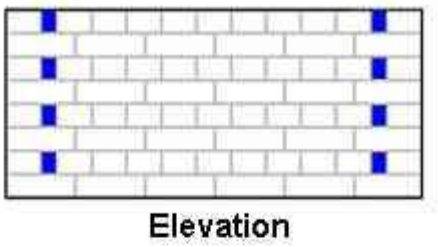
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

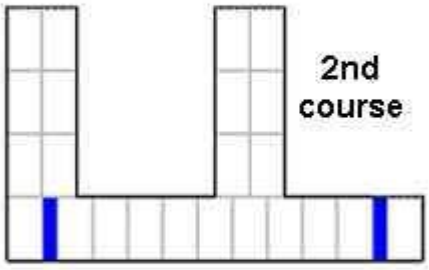
Bricks and Bats

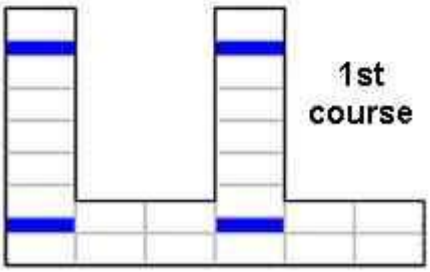


English Bond Brick Walls

stretcher bond - *flemish bond*







Garden walls built using English bond are one brick wide. As with any wall built of brick, no two adjacent vertical joints should be in line.

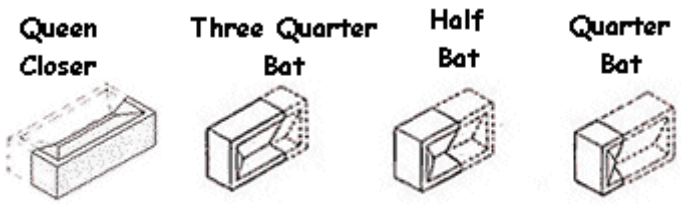
With a straight wall this is not a problem, it's just alternate courses of headers and stretchers with each joint on the stretcher course centred on a header brick on the course below.

When turning a corner at the end of a straight run needs the use of a Queen Closer (coloured blue) on each course.

Joining into a wall part way along the wall, is the same as for the end turn except that a Queen Closer is only needed on every other course.

Bricks and Bats

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

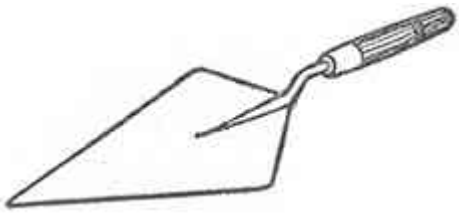
Bricklayers Tool Kit

The bricklayer's tool kit must be used with great care and properly maintained, firstly, because of the safety aspect arid secondly, because the tools can be of great expense.

When purchasing tools, consideration must be taken on how often the tools will be used. With every day use, the tools have to be made to be able to withstand the work. Often this is not the case with less expensive tools.

Below is a list of the tools, how they should be used and properly maintained:

Brick Trowel



These came various sizes and shape ranging between ten and fourteen inches. One side of the trowel has a more rounded edge, this being for rough cutting, however, this use is not advised for the beginner. The measurements are the actual blade size, the width of trowel also varies and beginners will find a narrower trowel easier to use. The rounded side on the trowel makes it suitable for both left and right handed operators. When the trowel is not in use for a period of time, clean it off dry and apply a light coat of oil to avoid rusting.

Pointing Trowel

A smaller version of the brick trowel but with both edges being straight, these are used for certain types of pointing or to add a finish to the brick work and should be maintained as the Brick trowel.

Spirit Level

This will be the most expensive part of the tool kit, thus keeping the bricklayers work level (horizontal) and plumb (vertical). These also come in various sizes. The main size for everyday work is nine hundred millimetres or twelve hundred millimetres.

Boat Level

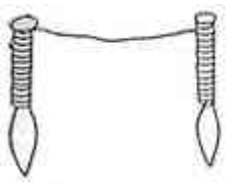
Like the Spirit Level above, it has two bubbles, (one for levelling, the other for plumbing) but is smaller. It is very

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

handy for decorative panels and soldier courses.

Line and Pins

These are used when corners of the building have to be built to run in the bricks between. The pins are tapered at the ends to allow for inserting into joints. It is important that the line is kept free of knots and clean of mortar.



Corner Blocks

These are used in pairs as an easy method of holding the line up. These are inexpensive as you can make your own.

Tingle Plate

Another less expansive tool but of great use. II is used for holding the line up over long lengths of walling to remove any sagging.

Club (or lump) Hammer

Used with either a bolster or chisel. It is essential that the head is secure and checked regularly to ensure it never comes loose.

Always wear eye protection goggles.

Bolster

Used for cutting bricks. Eye protection must be used at all times it is used. The end should never be allowed to burr over. This is known as a mushroom and can splinter when being hit. The end should be kept free from mushrooms by a grinding wheel which also allows the culling edge to be kept sharp.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Cold Chisel

Similar to a bolster but with a smaller blade, used more for cutting into brickwork after it has been laid e.g. for letting in services. Again maintenance and safely procedures should be followed the same as for the bolster.

Hawk

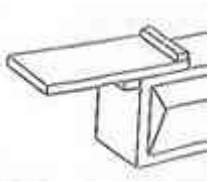
A small hawk is used when pointing a lot, and makes it easier to hold the mortar.

Gauge Rod

Inexpensive as you make it yourself. A length of timber with the vertical spacing of the bricks marked along one edge. Used when working from both ends of a wall to ensure that the courses are equal.

Brick Bat Gauge

Another inexpensive tool which is able to be made. Easy to use when a lot of cutting is required and maintains a regular size to the cuts. The one illustrated is made for the three most basic cuts used. Half bat, three quarter bat and closer.



Brick Hammer and Comb Hammer

Two similar types of hammer, one with a fixed head, the other with detachable blades. When the teeth have worn down, the blades can be renewed. They can be used for a number of jobs:

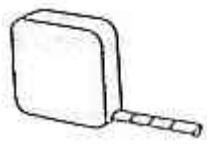
i. tidying the edges of cuts to leave a clean edge
ii. for what is known as chasing, i.e. letting cables into walls before plastering

Again, safety is of the utmost importance. Goggles must be worn at all limes and hands and fingers must be kept clear.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Steel Tape

The types most commonly used by bricklayers these days. Very convenient size and is easily transported via the belt or pocket. When used in wet conditions it must be wiped after use to prevent rusting.



Jointing Tools

Used for putting a finish to the joints in brick work. A half-round joint which is also known as a bucket handle finish. Two types are shown, these can now be bought from shops but an old pail or bucket handle can be bent to a suitable shape.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Brickwork - a simple garden wall

The following notes are intended to be sufficient to enable you to tackle simple garden-wall type projects. For your first attempt at laying bricks, it is a good idea either to build your wall dry, or make up a mix of soft sand and water so that you can practise spreading mortar.

The mortar and bricks.

Real mortar should never turn out too hard when set, in fact never harder than the bricks it bonds. One part cement to five of clean soft sand, plus a plasticiser is a good average mix. The plasticiser makes the mortar 'buttery' and easier to handle and adds extra adhesion. Never make the mix too sloppy or you'll have problems handling it and it will be squeezed out by the weight of the bricks and mark your brickwork.

Mortar has a limited life; one and a half to two hours is about the limit, and once it stiffens should never be 'knocked up' again with water. When it starts to stiffen throw it away. There are all kinds of brick, but for most projects medium density facing bricks will do. Avoid really soft bricks which soon break down if exposed to the elements. Bricks for foundation work which is to be hidden away could be common bricks, but choose sound ones.

Choose your bond.

If you look at any brickwork you will see that the vertical joints are staggered so that no two line up. The simplest bond is the stretcher bond, and using standard bricks 22.5 cm x 11.25 cm x 7.5 cm (allowing 1 cm joints) to produce a wall, you produce a wall 11.25 cm thick. The size given includes a thickness of mortar, so the brick is in fact slightly smaller than quoted. A wall produced in this bond would not be very strong, so if it is more than about 38 cm high, pillars need to be built into the wall to add support. These will be 22.50 cm by 22.50 cm and the addition of pillars will involve the cutting of half-bricks (referred to as 'queen closers').

If you turn a corner in this bond, rather than build a pillar it is probably better to just interlocks as illustrated.

Where a stronger wall is required you can build a double thickness wall (22.50 cm), and this needs no strengthening. You can also use more decorative bonds (i.e. English or Flemish bonds) than for a half brick wall. These involve the stretcher bond already mentioned plus headers (bricks laid across the width of the wall). English garden wall bond is really a modification of another bond and it consists of one course of headers to three of stretchers. It produces an interesting and fairly economical wall. With this bond you will note that a piece about 5.6 cm wide (called a queen closer) has to be placed next to the corner header bricks.

Bricks are cut using a wide blade chisel called a bolster, and the bolster is tapped firmly with a club hammer. Grooves are nicked in both sides of the brick, then a good sharp tap will split the brick along the cuts. Having said that, practise for a while with old bricks until you get the knack.

Foundations.

The most important part of any wall is its foundation, and if this is out of true, you will have a hard job producing a wall. Always cut your foundations horizontal, on sloping ground this may involve stepping them to accommodate the slope, make each step equivalent to a whole number of bricks plus mortar. And the foundation must be strong enough to bear the weight of the wall. For a light garden wall, 30 cm deep should be sufficient if the soil is firm and well drained. But on unstable or weak ground, make the depth 46 cm. Make the trench twice the width of the brickwork. Lay a concrete footing of, say, 1 cement, 6 ballest to a depth of about

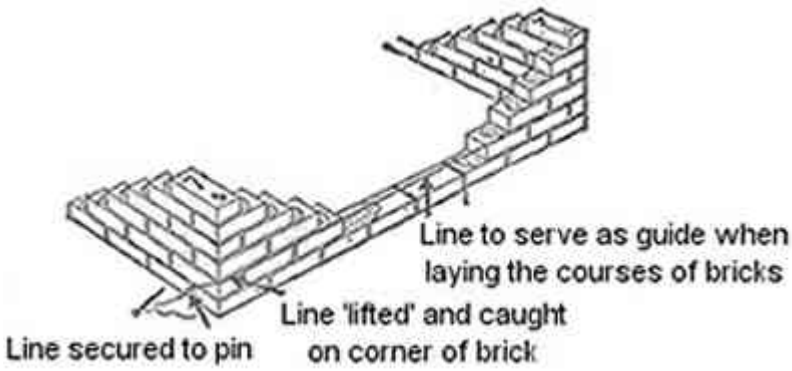
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

15cm (6 inch) in the bottom of the trench. (See our page giving details for foundations for more details.)

Laying the bricks.

When you come to actual laying, you will note that your bricks have an indent on one face, called a 'frog'. The brick should be laid with the frog up, this will ensure that the frog is then filled with mortar as work progresses and no voids are left within the wall.

With your foundations laid, mix enough mortar for an hour and stack bricks near the job. Place some mortar on your mortar board and you are ready to start. Lay a course of bricks dry first to see the work fits in the given space. Open or close joints slightly if necessary rather than have to cut bricks. Start with a corner brick and bed it in mortar, run a line from the laid brick to the opposite corner of the wall. Lay a second brick a metre or so along the line then checked with the spirit level. Then fill in between bricks. Proceed in this way until the far corner or end is reached. The first course must be straight and true!



When you've laid a number of bricks, you need to check and adjust them. The four checks are (in order):

- Gauge - use the gauge rod to make sure that the corner brick is the correct height.
- Level - use the spirit level to check that the row of bricks is horizontal. Don't try to level each individual brick.
- Plumb - Use the spirit level to make sure the wall is vertical.
- Straight - use a straight edge horizontally along the face of the wall and adjust so that they are all in line.

(for further details of these checks, see further pages)

When you first start bricklaying, you may want to check and adjust and then check it all again. After a little experience, you'll be quite confident to just check and adjust once.

Bricks are mass produced and are not perfectly square, so you won't get a perfect level along the top of the bricks or a straight line along the face.

Now building up the corners, checking each course (Gauge, Level, Plumb and Straight). With the corners built, you can fill in the rest of the wall using a line between the corners.

The actual joints may look a little ragged, so as the mortar stiffens, strike the joints as required.

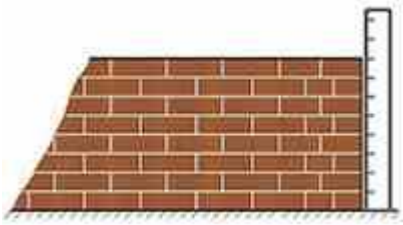
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Checking Brickwork

Four steps are required to check brickwork as it is being built:

- Gauge - check the height of the course
- Level - make sure the course is level
- Plumb - make sure that the wall is vertical
- Straight - make sure the wall is straight

These checks should be carried out as each course is laid and in this order to ensure that the previous checks are not 'disturbed'.

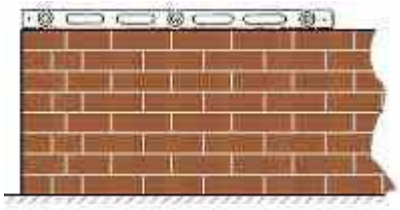


Gauge

When building any wall, it's necessary to keep the courses at the corners at the same height. A gauge board is used to to this.

Mark out a piece of timber with marks corresponding to spacing of one brick height plus the thickness of the bed joint (normally a total of 75cm).

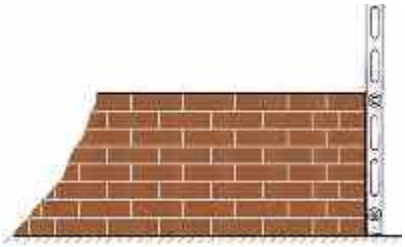
Use the rod at the corner when each course is begun and check that it is at the correct height, On uneven ground, start by putting a datum peg next to the wall so that the gauge rod can be easily positioned.



Level

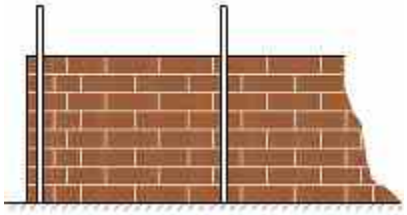
Use a spirit level to keep the courses level. Remember that the corner bricks have been set to the correct height, so any adjustment should be by bedding down the bricks in from the corner. Bricks are not made to very tight tolerances, so don't waste your time trying to get each brick exactly level, the point is to get the parts of the bricks which touch the underside of the spirit level, level.

Don't worry about trying to get the bricks level widthways.



Plumb

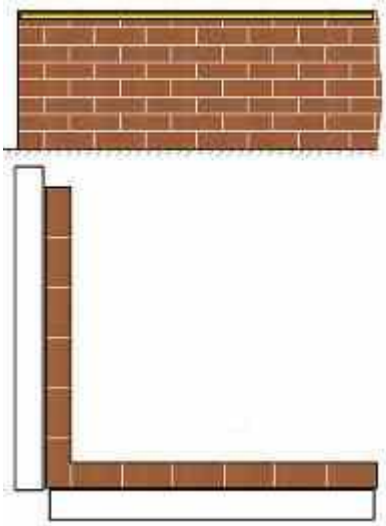
Check that the wall face is vertical by using a spirit level, tap the brick across the wall as necessary to adjust the brick as necessary. Do not try to do this to both sides of the wall, choose one side as 'the face' and just plumb that side.



Do it along the wall, spacing the points approximately just under the length of the spirit level.

Check both sides of corners.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Straight

Straighten the course by using a straight edge between the points previous plumbed. Tap the bricks as necessary.

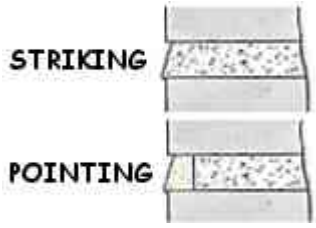
Like plumbing the wall, only check the face of the wall, don't try to straighten both sides.

Again the problem of the shape of the bricks come into play. It's unlikely that the straight edge will touch each brick across its whole face, try to get the centre of each brick to touch the straight edge and the two ends of the brick roughly equally spaced from it.

Striking and Pointing brickwork

The difference between 'striking' and 'pointing' is that:

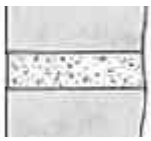
- Striking is finishing the mortar joints between newly laid bricks.
- Pointing is applying a small amount of mortar into the face joint between bricks (either newly laid or in old brickwork). In new brickwork, pointing can apply harder mortar to increase weather protection on exposed faces. In old brickwork, pointing is often used to repair mortar joints which have been eroded by exposure to the elements.



Styles of finishing

Whether striking or pointing, the basic finishes are the same:

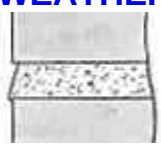
FLUSHED



Flush finishing can be difficult to achieve due to the irregularities of most mass produced bricks.

It's achieved by drawing a strip of wood about 12mm wide, 6mm thick and 100mm long along the joints.

WEATHERED

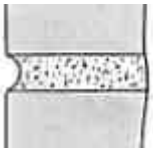


Weathered finishing throws off rain water and is considered to be fairly durable. The joint is made by drawing the blade of a small trowel, slightly inwards at the top, backwards along the joint, the top edge of the trowel being in contact with the underside of the bricks above the joint being struck.

For vertical joints, the edge of the trowel is in contact with one of the side bricks and is inclined by the same amount as the horizontal joint. Keep the direction of the vertical strikes the same all over a wall, otherwise it may look peculiar.

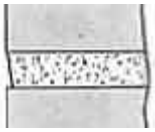
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

HOLLOW KEY



Hollow key - is formed by pulling a suitable shaped piece of metal (i.e. bucket handle) along the joints.

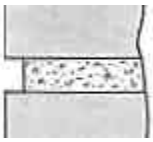
STRUCK



Struck jointing should not be used for exterior facings as it leaves the upper edge of the lower brick exposed to the weather.

The actual procedure is similar to the weathered finish above, except that the trowel is angled inwards at the bottom of each horizontal joint.

RECESSED KEY



Recessed key - the mortar needs to be racked out to a consistent depth from the face of the wall and then the face of the mortar is pressed back firmly using a metal jointer tool or a piece of wood. A tool known as a 'chariot', which is designed to recess the joint evenly, can also be used.

Striking.

Bricklaying should be stopped at a convenient point to allow enough time to strike the section of wall laid.

1. Except for the recessed finish, the first job is to fill in any parts of the mortar joints which show surface voids, use a small amount of fairly stiff bricklaying mortar and apply using a small/pointing trowel. Do the vertical joints (called 'cross-joints') first, and then the horizontal joints (the 'bed-joints').
2. Strike the mortar in the style required. Do the cross-joints first, then the bed-joints.
3. Finally, lightly use a soft sweeping brush to remove any crumbs of mortar from the wall. If there are any larger pieces of mortar on the face of the bricks, don't rub them off until the mortar has gone off for 12 hours or so.

Pointing.

On new brickwork, bricklaying should be stopped at a convenient point to allow enough time to clean out the surface mortar of the section of wall laid. The mortar in the joints should be raked out to a depth of about 12mm from the brick surface. Only point a wall when it has been completed.

On old brickwork, chip out the old mortar or pointing to the depth of about 12mm from the brick surface. Some people use angle grinders to remove the old mortar, if you choose to do so, be aware that it will cause a lot of dust, close all the windows to your house, warn your neighbours and wear a face musk and goggles. Use an angle grinder with care otherwise damage to the actual bricks could result.

When the wall is ready to be pointed, the joints should be wetted before being filled with pointing mortar and finished off as for striking above.

The mortar should be a fairly stiff mix. Put a small amount of the mix on a hawk and use a small pointing trowel to cut off a slither of mortar. Pick the mortar up on the edge of the trowel and press the mortar into the joints to be filled, drawing the blade backwards at the same

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

time, repeat this until the mortar is flush with the face of the bricks. Fill the vertical, cross-joints first, then the horizontal, bed-joints. When the joints over about 1 square metre have been filled, finish off using the required style.

The mortar used for pointing can be ordinary 5:1 sand/cement bricklaying mix or 3:1 for added weather resistance or coloured mortar for added effect.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

BUILD A BRICK BARBECUE

SKILL LEVEL

Building a barbecue is a relatively easy project, requiring a minimum amount of skill and DIY knowledge.

SAFETY FIRST

The main safety factors are the dangers of using sand and cement as this contains lime and can cause burns or irritation to the skin and eyes. It is important that you always wear goggles and gloves when handling cement and when cutting bricks.

INTRODUCTION

More of us are swapping our frying pans and ovens for a barbecue. Not only is it the healthy option, but it's also a fun way to cook when the sun is shining.

If you want to make the barbecue a more permanent feature in your garden the ideal solution is to build your own. A well-built barbecue will provide you with hundreds of char-grilled meals, with the obvious advantage of not having to worry where to store it every winter.

Our guide provides step-by-step instructions for building a basic brick barbecue structure. To ensure that you use your barbecue safely we've also included general safety do's and don'ts, and the seven golden rules for barbecuing.

2 - Building the base

Begin by digging a small trench, approximately 12 inches wide by 9 inches deep, make it in the shape that you want your barbecue. Compact the bottom of the trench by stamping it down before filling it in with cement; you will need to use coarse cement, this can be bought ready-mixed so all you have to do is add water.

Mix the cement on a board measuring at least 3 feet square. Pour the dry concrete mix in the centre of the board making a hole in the top like a volcano. Pour water from a watering can into the centre of the heap. Using a shovel, scoop dry mix from the base of the heap and add it to the centre until it is full.

Make another hole in the top and repeat the process until the mixture is thoroughly wet and a uniform colour. Using the shovel with the face towards you chop into the pile, as if you were slicing it, to eliminate air pockets and ensure an even mix.

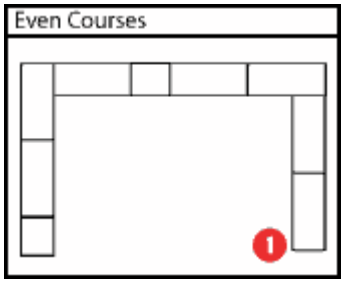
Shovel the concrete mix into the trench and tamp it down using the edge of a small board. Check it is reasonably level

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

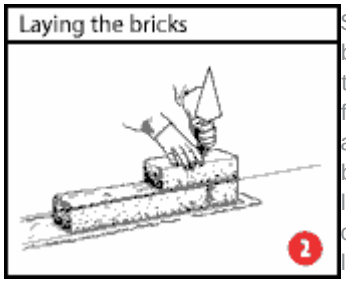
and leave for a couple of days to harden. Put some sacking or similar material over the top to protect it from frost or direct sunlight.

If you are building your barbecue on top of a patio you should not need to construct a base, simply build onto it. You must however, check that it is level.

3 - Bricklaying

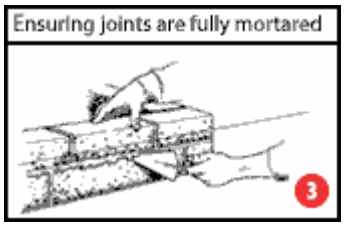


When the concrete has hardened start by mixing up the mortar for bricklaying. This can be done in a similar way as used for mixing the concrete. Adding mortar plasticiser will give a smoother mortar, making it easier to use. Use the mortar to lay a row of bricks on top of your foundation (1), buttering the bottom and edges of each brick. Constantly check, using a spirit level, that the horizontal and vertical surfaces are level.



Start with the corners of the barbecue structure, building them up at first, by three or four bricks (2) before attempting to build up between them. Use a string line stretched across the two corners to ensure that they line up with each other.

You will need to build brackets into the second and third row of bricks from the top of the barbecue. The lower set will hold the fuel tray, while the upper set will support the grill - it is important that you place the brackets ensuring the tray and grill sit comfortably on them, making sure they are level.



After you have completed every third row you should smooth the mortar (3) between the bricks to give a flush and pleasant appearance - this is called pointing. Dry lay a few rows at first to make sure you are happy with the shape and position before committing yourself to proper bricklaying.

Point the vertical joints before starting the horizontal ones, lightly brushing any mortar off the surface of the bricks.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

When you have reached the desired height you may want to cap the barbecue wall with either coping stones or hard engineering bricks in order to give a more durable finish.

You should leave the barbecue for at least 48 hours to harden before using it.

4 - Lighting a Charcoal barbecue

Lighting a barbecue looks easy, but the reality is somewhat different. However don't be disillusioned, all it takes is practice, patience and our easy to follow step-by-step guide.

Stage 1

- To help light the barbecue, arrange some firelighters in the base of it.
- Arrange the coal over the top, to a depth of 7.5cm.
- Carefully light the firelighters with long matches or a taper.
- Leave the barbecue to warm up for a while so that the heat is evenly spread.

Stage 2

- Once burning strongly spread the hot coals out evenly over the base of the barbecue using tongs.
- When the coals begin to turn into a grey/white ash, the barbecue is the right temperature to start your cooking.

Stage 3

- Place a well oiled grid over the coals ready for cooking.
- To add more coal, carefully place it around the edges of the barbecue with tongs.

5 - Golden Barbecue Rules

The Seven Golden Rules For Barbecue Bliss

1. Never light or encourage a dying fire with oil, petrol, paraffin or any flammable fluids.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

2. Make sure the barbecue is on level ground, away from over-hanging trees, bushes, fences or buildings.

3. If the wind is strong, carefully make sure the barbecue is in a more sheltered position to prevent the smoke from entering your home.

4. If you experience problems lighting the barbecue remove the coals with tongs and place in a metal container - not plastic, and try to light once more.

5. Keep children and animals away from the barbecue and any other hot surfaces, as well as any sharp utensils you may be using.

6. Ensure that the coals are cold and have stopped smoking once you have finished cooking.

7. **Never leave the barbecue unattended.**

6 - Food Safety

Barbecues are great fun, however it is important to pay attention to food safety to ensure that you and your guests avoid food poisoning. Follow the guidelines to cooking your food safely.

- Never mix raw and cooked meat - use separate plates and containers.

- Keep all meat in the refrigerator until you are ready to cook it.

- Never barbecue frozen meat, always thaw if first, especially poultry.

- Keep all utensils clean and use separate utensils for raw and cooked meat.

- Try not to over-cook the outside of meat on the barbecue as the middle may still be raw - this is how you can get food poisoning. If the food is cooking too quickly simply move the grid up a little further from the coals - this will ensure slower and better cooking.

- Enjoy your food!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

BUILD A CARPORT

SKILL LEVEL

You only need basic DIY and woodworking skills to build a carport. The most important part of the job is setting the supporting posts truly vertical - a job for which another pair of hands will be helpful.

SAFETY FIRST

There are no particular safety risks involved. Make sure that any power tools are plugged into an RCD adaptor or RCD socket outlet. Set up stepladders or other access equipment on level ground, and don't overstretch on them.

INTRODUCTION

If you have space off-road for your car, a carport is an inexpensive way of giving it some shelter from the elements. You can adapt the structure to the size you need and the space you have available for it.

A carport is more than just a protective canopy for your car. It can do double duty as a porch over a side door, and provides useful undercover space for storage. It can be used as a work area for DIY or car maintenance, a children's play area, even somewhere to dry clothes on wet days.

2 - Planning the carport

A carport is classed as an outbuilding as far as planning rules are concerned, wherever it is sited. So long as it does not project in front of the local building line (usually the front wall of your house), is not more than 3m (10ft) high, and does not result in more than half of the garden being built over, then you do not need to apply for planning consent.

If you are in any doubt about whether your proposed structure needs consent, check with your local authority planning department.

As far as the need for Building Regulations approval is concerned, a carport is exempt so long as its floor area does not exceed 30m² (325ft²) and the structure is open on at least two sides.

3 - Designing the carport

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The simplest way of building a carport alongside the house is to erect three or four stout timber posts along one side of the site to support a beam that will carry the outer edge of the roof, and to fix a horizontal timber wallplate to the house wall to support the other edge. Then joists are fixed into notches cut in the beam and wallplate, and corrugated plastic roofing sheets are secured to this timber framework (1).

Make sure that all the wood you buy for the carport is pre-treated with wood preservative. Treat all the notches you cut in the wood with extra preservative before assembling the structure.

The roof needs a slight slope in order to drain rainwater off it. This can run from front to back or from the house wall to the opposite side of the roof. It is easier to waterproof the junction between the roof and the house wall if the drainage runs from end to end, since the flashing tape will run parallel to the corrugations in the roofing sheet rather than at right angles to them.

Add a run of guttering along the downhill edge of the roof so rainwater does not simply drip off. Fit an outlet and a downpipe to discharge the water into a nearby gully if one is available. If there is no gully nearby, collect the rainwater run-off in one or more water butts, for use in the garden.

4 - Fixing the wallplate

The roof is supported on two main beams of 100 x 50mm sawn timber running the length of the carport. One, the wallplate, is fixed to the house wall with masonry bolts. The other is screwed to the posts at the outer side of the building. Both are notched at intervals to a depth of 50mm to receive the sawn timber joists; you need seven for a carport 6m (20ft) long, spaced at 1m (3ft 3in) centres.

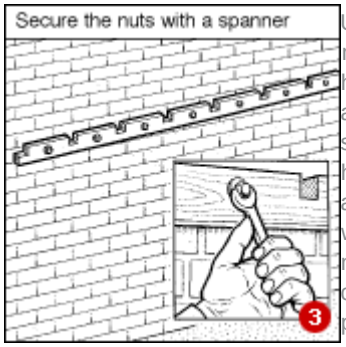
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Cut both beams to length, then mark the positions for the notches on both together to ensure that their positions coincide exactly. Saw out the open end notches, and saw down the sides of the others. Then use a wood chisel to cut out the waste wood and leave notches 50mm deep (2). Treat the newly-exposed surfaces with wood preservative.

Drill clearance holes through the wallplate midway between the notches, using a twist-drill bit sized to match the diameter of the masonry bolts you are using. Use the posts you will be fitting at the other side of the carport to support the wallplate temporarily against the house wall at the required level - at a minimum height of 2m (6ft 6in) to allow adequate headroom.

Create the necessary fall along the length of the carport by lowering one end of the wallplate by about 1mm for every 100mm of wallplate length - for example, a drop of 60mm for a carport 6m long.

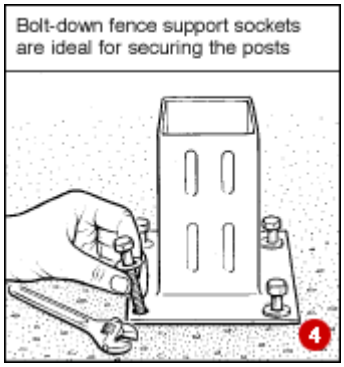
Mark the positions of the fixings on the wall through the clearance holes in the wallplate, then set it aside.



Use a large-diameter masonry drill bit to drill the holes for the masonry stud anchors. Insert them so their sleeves are fully inside the holes and take off the nuts and washers. Lift up the wallplate (with help if you need it) and locate the clearance holes over the projecting bolts. Fit a washer on each one and hand-tighten the nuts. Then tighten them fully with a spanner to expand the sleeve within the wall and make a secure fixing (3).

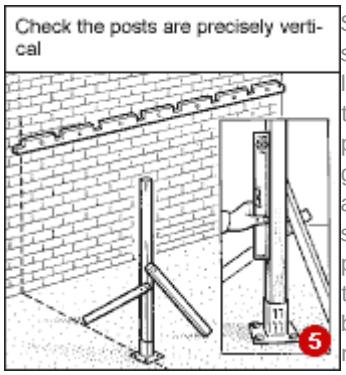
5 - Position the posts

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



The simplest way of securing the posts on an existing concrete base is to use bolt-down fence support sockets (4). These are fixed at the post positions with four small masonry bolts set in holes drilled in the concrete.

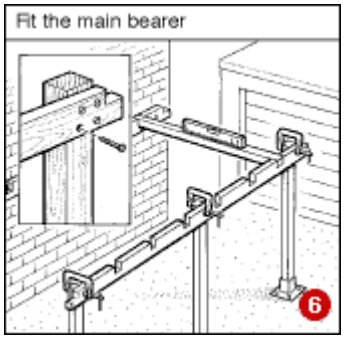
Measure the carport width out from the house wall at 90° at each end and at the centre of the wallplate, and mark the socket positions. Place a socket at each position and mark the bolt positions through the fixing holes onto the concrete. Drill the holes, insert the sleeves, set the sockets in place and tighten the bolts down to fix each one in place.



Stand the first post in its socket and temporarily nail lengths of scrap timber to two adjacent faces of the post to brace it upright. Then get it precisely vertical using a spirit level (5). Screw the socket to the base of the post. Repeat the process for the other posts. Leave the braces in position until the roof structure is complete.

6 - Fit the main bearer

Drill screw clearance holes through the face of the outer side beam at positions to match the post spacing.



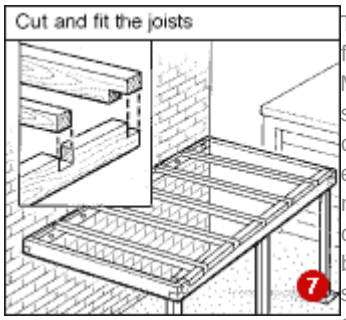
With help, hold the beam up and use G-clamps to secure it to the outer faces of the posts at roughly the right level. Place a joist across the high end of the roof (6). Use your spirit level to get this truly horizontal, loosening the clamps slightly so you can move the end of the outer beam up or down as necessary. When the joist is level, tighten the clamp and screw the end of the beam to the first post. Use four 75mm screws to make a strong and secure fixing.

Repeat the process at the low end of the roof, again resting your spirit level on a joist fitted in its notches to get the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

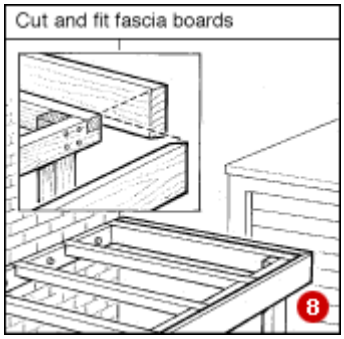
other end of the outer beam at the correct level. Clamp it in place and screw it to its post. Finally, screw the beam to the centre post and remove all the clamps.

7 - Fit the joists



The two end joists are cut from 100 x 50mm timber. Mark and cut out a 50mm square notch in the underside of each joist end. Then lift each one into place so the notches fit in the end notches of the wallplate and outer beam (7). Drive a 75mm screw down through the joist end into the wallplate and beam. Repeat this to fit the other end joist.

Cut the remaining joists to length from 50mm sq timber. Simply drop each one into its notches and screw it in place.



Complete the roof structure by cutting fascia boards to length to fit along the sides and ends of the carport. Mitre the outer corners using your jigsaw with its soleplate set at a 45° angle, then screw each board on so its top edge is flush with the top of the roof framework (8).

8 - Add the roofing sheets

Start placing the corrugated roofing sheets at the downhill end of the roof. Lay the first one so it overhangs the end fascia board by about 50mm, with one long edge butted against the house wall. Drill 3mm clearance holes in the first ridge (above the wallplate) and in every fourth ridge above each of the joists. Slip a sealing ring over each screw, insert it in its clearance hole and drive it into the wood below. Snap on a plastic cover to conceal the screw head (9).

Lay the next sheet against the house wall, with its downhill end lapping over the sheet you have just fixed by about 300mm, and repeat the fixing process.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Add further sheets as necessary until you reach the uphill end of the roof, where you may need to fit a cut-down length. Let it overlap the fascia board by about 50mm.

To cut across a roofing sheet without cracking it, sandwich it between two long timber offcuts and secure them next to the cutting line with clamps. Then cut the sheet with the saw blade running against the edges of the offcuts.

After fixing the first row of sheets, seal the junction between the house wall and the roof surface with a strip of self-adhesive flashing tape (10). Apply flashing primer to the wall and allow it to become tacky. Then peel back the release paper from the tape, bed one end against the house wall and let the other lap onto the roof surface.

Unroll the tape, peel off more paper and work your way along the edge of the roof to the other end. Cut the tape to length, then go back and bed the tape down firmly onto the roof surface all the way along.

Don't think you can leave fitting the flashing strip until all the roof sheets are in place and then climb up on to the roof and apply it. This type of roofing cannot support a person's weight.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

BUILD A SHED

SKILL LEVEL

Provide a sound, level base and anyone will be able to erect a garden shed - though an extra pair of hands is essential for lifting the panels into place.

SAFETY FIRST

Have a steady pair of stepladders for working on the roof - and get someone to help you lift the heavy wall and roof components into place.

INTRODUCTION

In the long run, it pays to buy a quality shed which, with routine maintenance, will provide a dry, sound facility for storing tools, materials, garden furniture and other equipment.

Never skimp on the size of shed you buy. Get the largest that will suit your garden - extra space is invaluable as not only can you store more, but the shed will be easier to organise and items will be more accessible

2 - Planning

You can buy a shed to suit whatever amount of storage space you need, from a mini-store for a few sun-loungers to 12ft long (3.7m) buildings that can double as workshops. Some sheds have to be ordered as they are not kept in stock.

Planning permission is not normally needed for a prefabricated shed to be built in your back garden.

Think about access for getting the panels from the delivery lorry into the back garden. If you have side access to the rear garden there should be no problem, but taking them through the house could be difficult.

If you intend to use the shed as a workshop, a bright spot in the garden with a pleasant view from the window would be advantageous. Also if you intend running an electrical supply it would be sensible to have the shed as near to the house as possible.

3 - Looking for quality

Don't select a shed from a brochure - go and see it for yourself so you can judge its construction and quality of fittings.

Check the thickness of timber used for wall panels and look for solid construction such as shiplap and overlap cladding.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

With shiplap the tongues and grooves of the planks slip into one another. With overlap each plank overlaps the one below it.

Most sheds are made from pine or deal. Some are factory-treated with a preservative. If not it is well worth applying a coat of preservative and repeating the treatment each year to prevent decay.

Check the quality of the floor, a poor-quality floor will flex with your movement and will not be suitable for a workshop.

Garden sheds comprise a number of pre-fabricated wall panels and roof sections that are simply joined together to form the structure.

4 - Roof styles

The traditional garden shed has a pitched roof with the two panels rising from the side wall panels up to a central ridge. Here you have plenty of headroom in the middle of the shed but less at the sides.

A single-pitch roof, also called a pent roof, has virtually the same headroom inside all round. There is a slight slope on the roof to ensure rainwater flows away.

If you plan to work in the shed you may find a pent roof more suitable with the highest part by the windows where the workbench is normally sited.

Usually the roof is supplied with roofing felt already attached - all you have to do is fix the panel in place. Sometimes the roofing felt is supplied separately for you to attach.

The only way to judge whether the proportions are going to be adequate for your needs is to visit the supplier and stand inside the shed.

5 - Doors and windows

The door comes ready fixed to the door frame and assembled within the panel.

Window frames are fixed similarly to doors.

The glazing is usually secured using strips of timber pinned

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

to the frame. To ensure a window is weatherproof run a bead of frame-sealing mastic around the glass.

6 - Base

It is essential to have a level and dry foundation. It is impossible to erect a shed on an uneven site as screw holes connecting the wall panels will not line up. For a lightweight shed it may be sufficient to use some paving slabs laid on heavy-duty polythene sheeting to act as a damp-resisting barrier. For larger buildings especially where the shed is to be used as a workshop a concrete slab is best. The slab needs to be just smaller than the floor area of the building so that rainwater running off the wall panels does not drip onto the concrete.

A concrete base needs to have a 75mm (3in) base of compacted hardcore. The base can be level with the ground or raised above it. If it is to be level you will need to excavate 150mm (6in) to allow for the hardcore layer and 75mm (3in) thickness of concrete.

Set up levelled formwork to contain the concrete and check diagonals (1). Then lay thoroughly compacted hardcore and cover with sand.

You can mix your own concrete using one part cement to five parts ballast (which is most economical) or use bags of dry-mixed concrete to which you add water.

The concrete should be kept on the dry side - not too much water or it will be sloppy.

Spread the concrete slightly proud of the formwork (2), then level it off with a long plank resting on the formwork using a sawing motion (3).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Shovel concrete into the formwork and spread roughly level

Finally level off with a board used with a sawing movement

If rain is expected cover the concrete with polythene for 24 hours. In warm weather cover it with wet sacks and sprinkle them with water over the 24 hour period. The base is then ready for the shed.

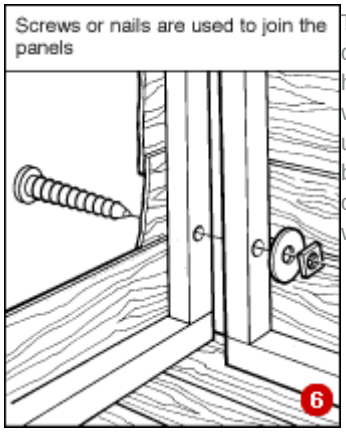
7 - Erecting the shed

The base is laid and checked for level

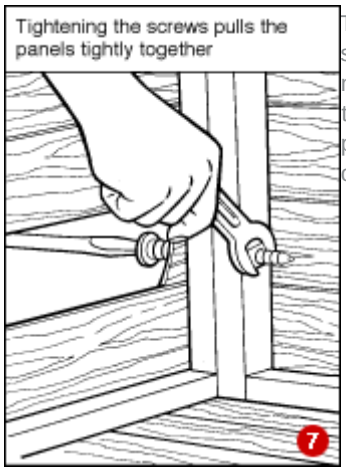
The floor will comprise boards fixed to bearers. It is simply laid in place and will be held there by the weight of the shed. Check with a spirit level that the base is horizontal (4).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

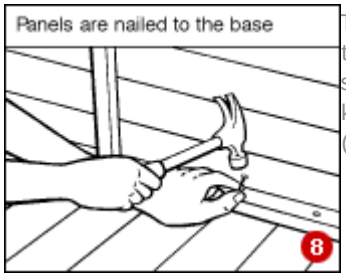
Check each panel to ensure you will be fixing them in their correct positions - doors and windows in the right place (5).



The panels are joined to each other through pre-drilled holes, using screws and washers or nails (6). It is usual to start with a side and back panel, then to add the other side panel, and finish with the door section.



The action of tightening the screws or banging home the nails draws the wall panels together (7). Subsequent panels are secured to each other.



The wall panels are secured to the floor joists using screws or nails (8). If nails, knock them in at an angle (skew nailing).

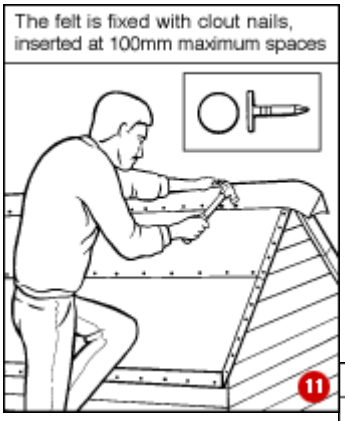
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The roof is lifted into place and fixed to the bearers

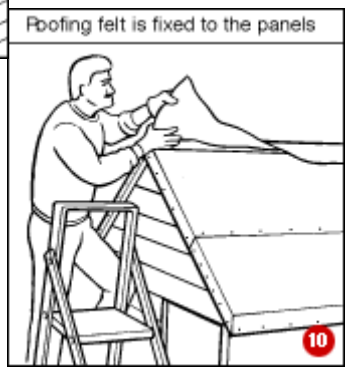
Once the walls are erected, fit the roof (9). The panel or panels are usually fixed to the walls with nails.

If not already fitted, cover the roofing panels with strips of felt, overlapping 50mm minimum. These are always fixed from the lowest part of the roof, working upwards (10). This ensures that rainwater running down the roof does not seep under overlapping edges. Clout nails are used to secure the felt (11).

The felt is fixed with clout nails, inserted at 100mm maximum spaces



Roofing felt is fixed to the panels



Some shed kits come with corner strips and fascia boards for finishing edges.

8 - Insulation and power

Some shed wall panels come lined with building paper to keep out draughts. For better insulation to protect equipment and tools from rusting line the walls with glass-fibre loft insulation or expanded-polystyrene slabs covered with sheets of wallboard or hardboard.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If power and lighting is to be added to the shed cables will need to be buried in the ground or run overhead supported by a wire cable at a safe height. Cables must never be trailed along the ground or run along a wall or fence. Employ a qualified electrician to do the work.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

BUILD A SHOWER CUBICLE

SKILL LEVEL

Building a shower cubicle requires some experience in carpentry and tiling. You also need a degree of expertise in wiring and plumbing in order to install a shower unit.

SAFETY FIRST

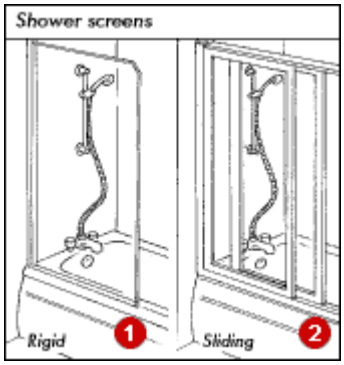
By all means construct the shower cubicle yourself, but it is safer to hire professionals if you are not competent to install electrical wiring and plumbing.

INTRODUCTION

A second shower is almost a necessity in a busy household.

It is rare to find a home these days that does not boast at least one shower, but if you have a large family or frequently entertain house guests, a second shower will take the pressure off the bathroom. You could build a shower cubicle into the corner of a bedroom, in a downstairs toilet or utility room, or even under the stairs. And if space is limited, there's no need to install a purpose-built cubicle - just screen off the bath and fit a shower unit to the wall above.

2 - Fitting a shower screen



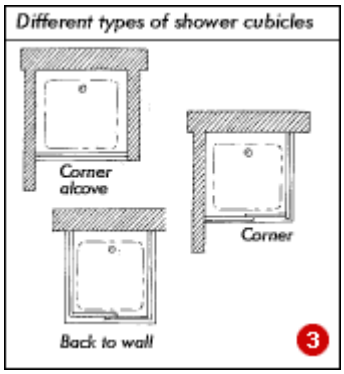
The simplest way to screen off a bath shower is to hang a simple waterproof curtain that is long enough to drape inside the bath rim. However, unless you remember to tuck the curtain against the wall each time you take a shower, you always seem to end up spraying the bathroom with water. A rigid shower screen overcomes the problem. There are various screen kits to choose from. Some are designed to shield just the end of the bath where the shower is located (1). Others enclose the entire bath. To provide access, complete screens have hinged or sliding doors (2). Hinged screens take up space when open and need good flexible seals.

To erect a fixed screen, fasten the channel to the wall with screws. Apply sealant behind the channel before tightening up the screws, or run a bead of sealant down the joint after fixing. Fit the glazed panel and seal between it and the bath rim.

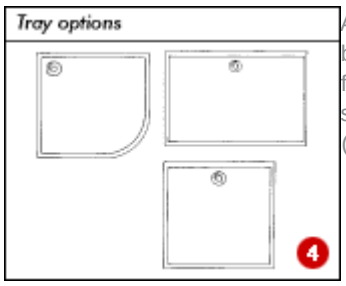
Fit a hinged or sliding screen following the manufacturer's instructions, making sure you correctly install the seals provided with the screen.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

3 - Shower cubicles



Shower-cubicle components come in practically every combination imaginable, from self-contained cabinets to screen panels for enclosing alcoves, building into a corner or against a flat wall (3).



A range of sliding, hinged and bi-fold doors are available to fit all the various shaped shower trays on the market (4).

A shower cubicle, fitted in a bedroom or some other part of the house, must be at least 2.5m (8ft) from the nearest electrical socket - move the socket if necessary.

Decide on the most convenient position for your shower, taking into consideration the pipe runs for supply and waste. Check also on the electrical-wiring requirements for instantaneous electric showers and pumped power showers.

4 - Building a stud partition

You can incorporate any existing wall into your shower cubicle, provided it is sound enough to be lined with ceramic tiles.

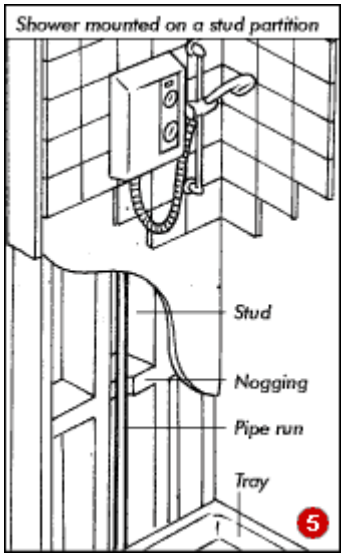
It is easy to construct an alcove in the corner of your room by building a stud partition to enclose the third side. Measure your shower tray carefully to ensure you can make a good fit all round. It is usually best to remove the skirtings and, if necessary, hack off some of the plaster from the existing walls. This will enable you to set the rim of the tray into the walls to make a waterproof seal after tiling.

A stud partition provides a convenient wall on which to mount the shower unit, because all the services can be run within the frame.

Construct the partition from 100 x 50mm (4 x 2in) softwood

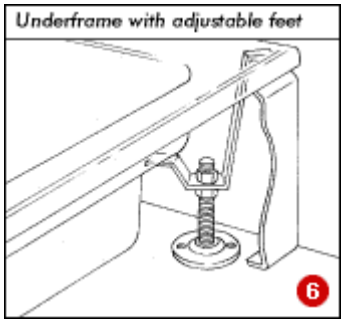
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

treated with preservative. Erect four uprights nailed to a similar-size piece of wood, known as a sole plate, screwed to the floor. Nail them at the top to a head plate screwed to the ceiling. Screw into the joists whenever possible. If need be, fit timber bearers between the joists to provide fixing points.



Fix noggings between the uprights to stiffen the frame, but leave a clear path for the plumbing (and wiring) down the centre (5).

5 - Fitting the shower tray



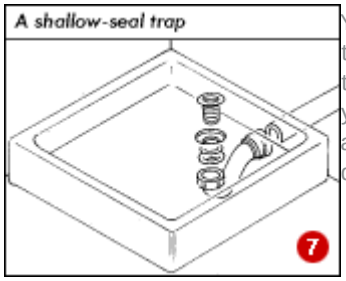
Shower trays are usually made from moulded plastic or are cast with a gel coat. Most trays have an integral side skirt that is made to stand on the floor. Others have a wooden or metal underframe fitted with adjustable feet (6). A separate plinth panel is fitted to this type of shower tray to conceal the underframe and provide access to the waste system.

The most important aspect when fitting a tray is to ensure that the tray is level and that it is correctly bedded down. Manufacturers generally suggest a sand/cement mix of 5:1. This is to ensure that the tray is fully supported and also helps with levelling.

The next issue to address is whether or not the tray will need raising off the floor. This will depend on whether installation is onto a timber or solid/restricted access floor. If it is a timber floor, there should be sufficient room to allow for the waste, trap and pipework. If the floor is solid or there is restricted access, a plinth will need to be constructed which is capable of accommodating the trap which is to be used.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The wastepipe must have sufficient fall (slope) for the water to drain properly. Access must be provided in order to clean out the shower trap.



You can fit a shallow-seal trap (7) when draining into a two-pipe waste system, but if you are connecting directly to a soil pipe you must use a deep-seal trap.

If this gives you problems with clearance under the shower tray, fit a deep-seal running trap in the pipe run. Cut an access hatch in the floor.

Some traps have a twist-out grille that provides access to a detachable chamber for removing blockages.

6 - The waste system

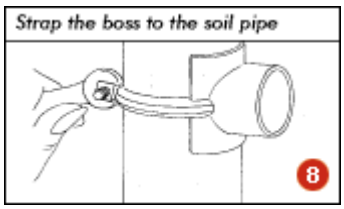
Attach a 40mm (1.5in) plastic wastepipe to the trap. The wastepipe can be run through the wall and discharged into the hopper head of a two-pipe waste system, or you can connect the pipe directly to the soil pipe of a single-stack drainage system.

Try to run the wastepipe between the floor joists, providing sufficient fall - 6mm (1/4in) for every 300mm (1ft) run - otherwise you may have to build a support frame to raise the shower tray to a higher level. If this results in the rim of the shower tray being more than 225mm (9in) above the floor, you should construct a step to provide safe access to the cubicle.

Having established the exit point for the wastepipe, use a power drill fitted with a core bit to bore a hole through the wall of the house.

Connect an elbow to the end of the pipe to discharge water into a hopper. Use a pipe boss to join the wastepipe to a plastic soil pipe. Mark where the shower waste meets the soil pipe and cut a hole of the appropriate size, using a hole saw. Smooth the edge of the hole with abrasive paper.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Following the manufacturer's instructions, apply solvent cement to the joint and strap the boss in place (8).

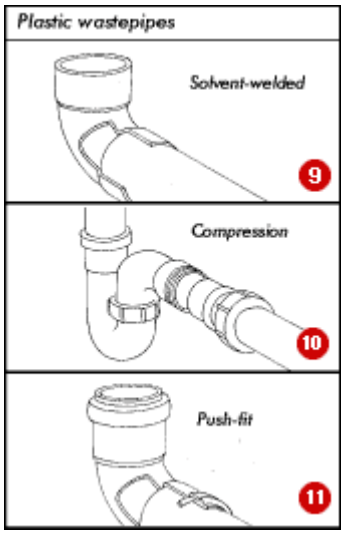
When the cement has set, push the rubber seal into the boss and insert the wastepipe.

7 - Joining plastic wastepipes

Domestic wastepipe systems are lightweight and easy to assemble. The pipes come in standard lengths and in three sizes - 32mm (1.25in) diameter for washbasins, and 40mm (1.5in) for sink, bath and shower wastes. A 21mm (3/4in) pipe is also made for cistern overflows. The metric sizes refer to outside diameters, the imperial sizes to inside.

When buying plastic pipes and fittings make sure they are compatible - there may be slight variations in size between the ranges. For even the simplest run of wastepipe, you will have to fit joints that enable the pipe to change direction. A range of straight connectors, bends or elbows, T-joints and adapters are available for joining straight lengths of wastepipe and for connecting pipe to appliances.

Joints are connected to the pipe using various methods:



A welded joint (9) is made by applying a solvent cement to the mating parts just before the joint is assembled. The solvent softens the plastic, causing it to fuse together and create a waterproof seal. Welded joints are best for inaccessible pipe runs.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Compression joints (10) are often used to connect the wastepipe to the shower trap. A large threaded cap compresses a rubber washer into the neck of the joint, forming a seal. The joint can be dismantled by unscrewing the cap. This type of joint can be used to join pipes of slightly different diameters.

Push-fit joints (11) are quick and easy to assemble. When the wastepipe, which must be cut square, is pushed into the joint, a rubber O-ring inside the socket grips the end of the pipe, forming an instant watertight seal.

Smear petroleum jelly on the cut ends of the wastepipe to act as a lubricant when assembling push-fit joints.

8 - The final stages

Having installed the tray and run the wastepipe, you can now line the inside face of the partition with 9mm (3/8in) exterior-grade plywood. Seal all joints with silicone sealant and prime the panels. Cut holes for the plumbing (and electrical wiring if required), run the services and make the initial connections. Panel the outside of the partition after you have tested the plumbing for leaks. You can use plywood or plasterboard. Finish the edge of the partition with softwood mouldings, or line it with a strip of plywood as a base for tiling.

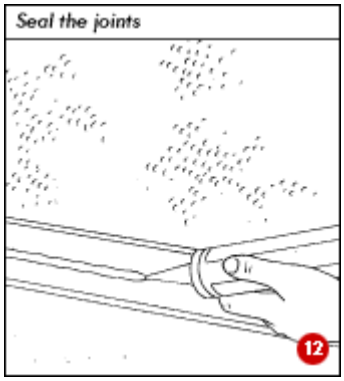
Tile the interior of the cubicle, using waterproof tile adhesive and grout. Refit skirting boards on the outside. Make the final connections to the shower unit and fit the sprayhead.

One last but important job is to seal the joints between the tiling and shower tray. Grout is too inflexible, so use a silicone sealant to waterproof the joints. Some shower trays are made with a raised lip to allow the tiles to overlap the rim in order to improve the seal.

Clear sealant and a range of colours are available in tubes that fit into a dispenser. Cut the tip off the pointed nozzle to a slight angle.

Clean the surfaces with methylated spirit, then run a bead of sealant along each joint. Smooth the sealant with your fingertip dipped in a 50/50 solution of washing-up liquid and water.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Having fitted the shower cubicle panels, following the manufacturer's instructions, seal the joints between the framework, the walls and tray with sealant (12).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

BUILDING A BASIC CUPBOARD

TIMBER FRAMEWORK FOR STORAGE UNITS

This project contains basic principles for building a frame for a basic cupboard. It can be expanded on by using different designs, the struts can be moved to accommodate shelves or simply left open plan. It will give you the idea of building storage space onto your home and can even be adapted to make a corner cupboard. The timber sizes can be changed and more struts can be put in to ensure greater strength if you feel you need it. The structure can be fixed to any wall, ceiling or floor using our guides to fixing. Check the wall, floor and ceiling area for pipes and cables before you drill anything.

Tape measure, pencil, cross cut saw, tenon saw, carpenters square, bevel edge, adhesive, power drill, wall plugs, electric screwdriver, countersink bit, masonry drill bits and hss drill bits, spirit level, hammer, filler and applicator gun, screws, chisels, mortice gauge,

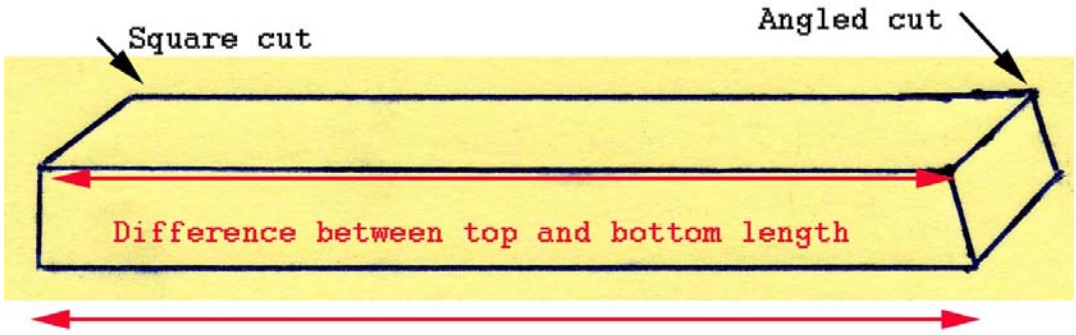
We suggest for this simple cupboard you use 50 x 50mm PSE timber. This stands for Planed, Squared Edge and simply means prepared for joinery, as opposed to the "sawn" state timber is in when it leaves the timber mill. It is also called, in its prepared state, PAR which is Planed All Round.

With the number of different door designs available from kitchen and DIY stores these days we suggest it may be a good idea for you to find the doors (if you intend to have them) first. The frame can easily be built around the door size and you will have guaranteed matching your existing decor.

We have deliberately not given any dimensions in the project. Even when planed timber can vary by a mm or so and ceiling heights can vary considerably. Measure your own timber and other dimensions carefully and remember. **Measure twice-Cut once**.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Use a carpenters square to make all cuts. Neat joints are impossible without a completely square face to begin with. Also if the timber is not square at the end, a measurement to the other end will vary, depending on which side you measure from. This can make it impossible to get a decent finish.

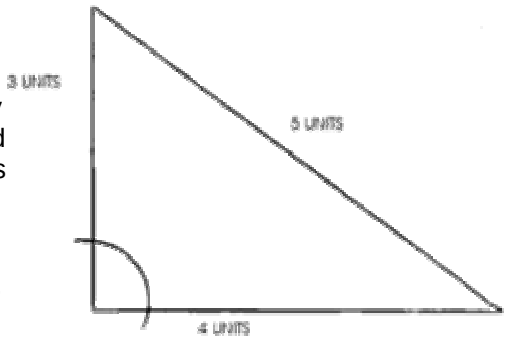


A variety of joints can be seen in our timber joints projects and some special joints are shown here. The principle of cutting them is exactly the same as shown in the timber joints projects. Please remember it takes many years to become a carpenter or joiner. If this is your first project, or you have not done much carpentry, buy an additional length of timber and practice your joints before embarking on a project which will become a feature in your home. An 8 foot length of sawn timber to practice on will cost pennies compared to the waste of materials if you mess up with the real thing.

Check your walls are square to each other using our 3, 4 5 method shown below.

HOW DO I CHECK MY ROOM IS SQUARE

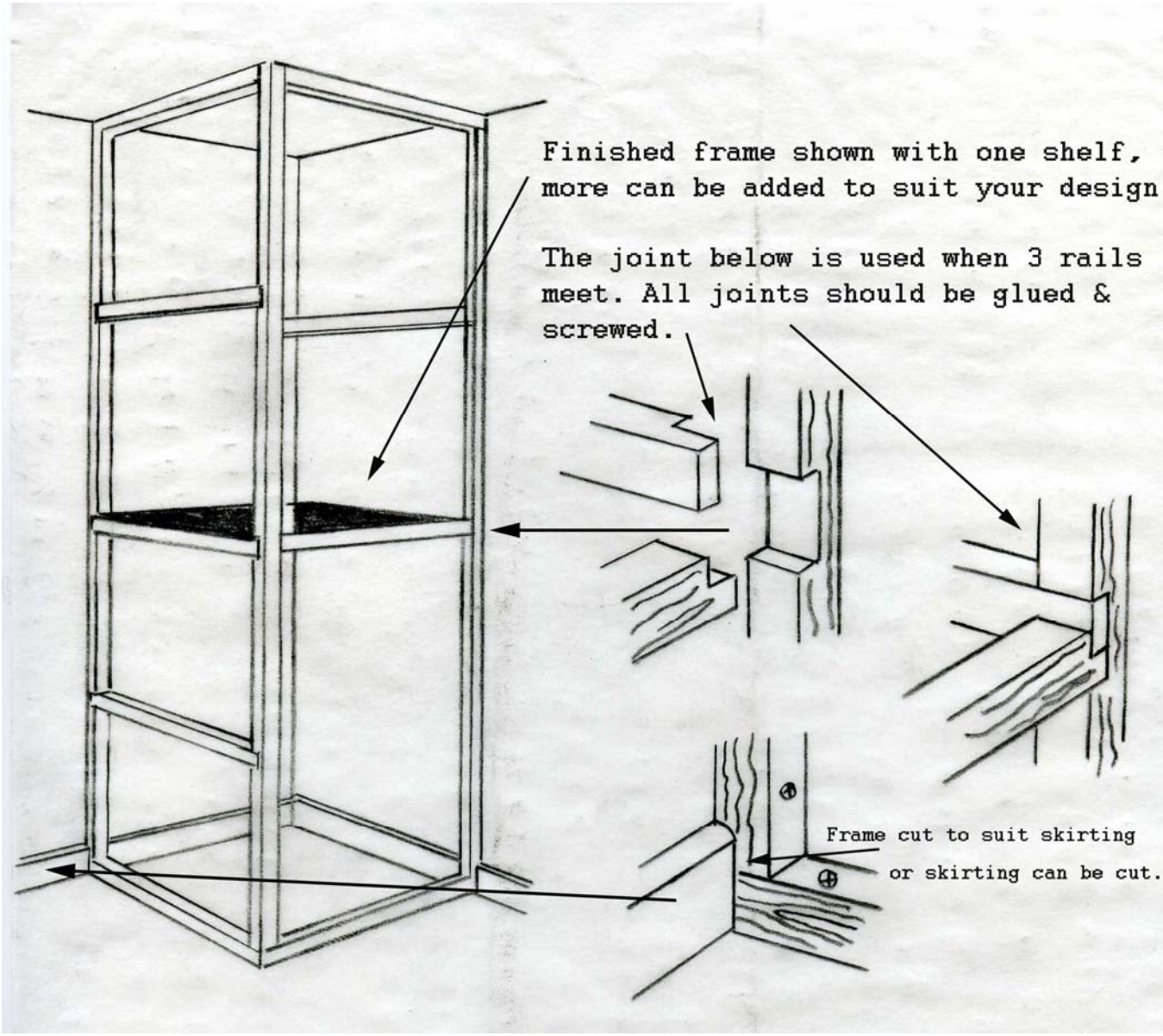
Floor tiling, carpets, any number of things around the home require a degree of setting out. Remember a quarter of an inch out at one end of a 12 foot room, means about 2 inches out at the other end. It is important to start any appropriate projects with straight and square lines and it is very easy to accomplish. The method is called 3,4,5 and for the technically minded is based on Pythagoras's theorem which we won't go into now ! Suffice to say that if you measure along one wall 3 feet (or metres or any other unit), and along the other wall 4 of the same unit, the diagonal line in between the points should measure 5 units. If it does your walls are square, if it doesn't, you need to mark some points that are square to start your work.



Draw your plan before you start.

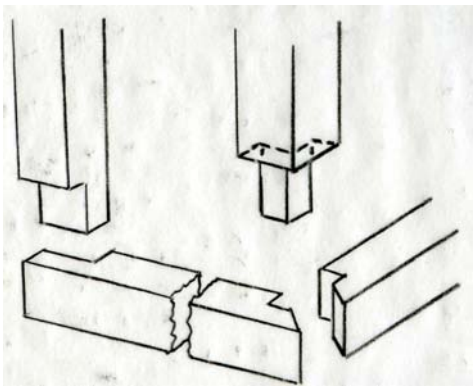
Error!

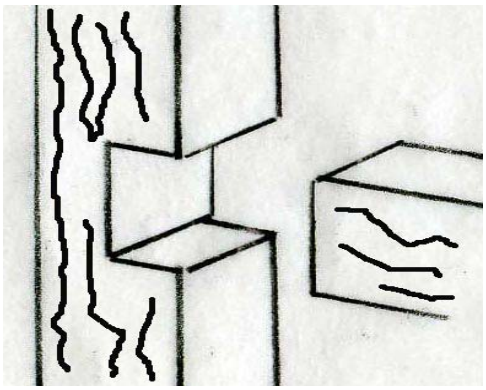
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



All joints need to be "made" before any of the frame is fixed to the wall, floor or ceiling. Once cut, fix the two uprights absolutely vertically on the walls using the struts as spacers to get them in the right position. Fix the struts and the centre upright together using glue and screws. Make sure the screw heads are counter sunk into the timber or they will push the cladding out. Use a tenon saw to cut the skirting back if your prefer that to cutting the frame around the skirting. Frame can be fixed to the wall using a 7mm masonry bit with red wall plugs and (for 50mm timber) 3 inch, number 8 screws. For fixings to plasterboard use our guide. Also fixing to lathe and plaster.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





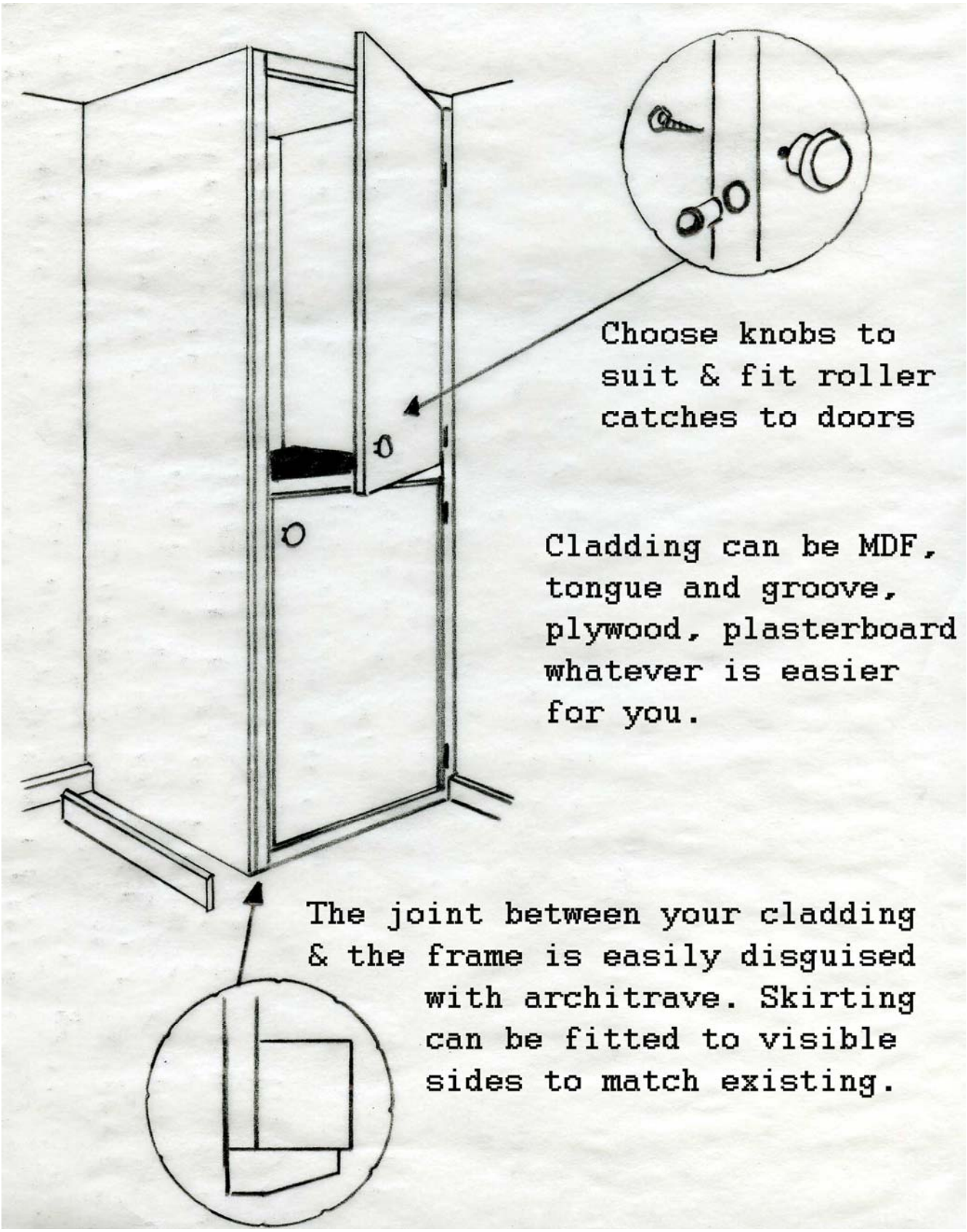
Floor/ceiling + cross rail joints Cross rail to post joints

Mark the position of the struts ***lightly*** on the walls when your frame is in place. You will not be able to see them when you are attaching the cladding, making fixing to them a bit of a lottery. The pencil marks can be rubbed out later.

Next, cut and fix the shelf or shelves. This can be done more easily when you can get to all sides. The side rails which support the cladding should be fixed at no less than 600mm centres for 12.5mm cladding and if your cladding is thinner than that, they should be spaced at 450mm centres.

The shelves and cladding material we have left up to you.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



We always prefer to use screws to fix the cladding to the frame even if we are using plasterboard. Sink screw heads into the cladding and fill over them to get a flush face on which to decorate.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

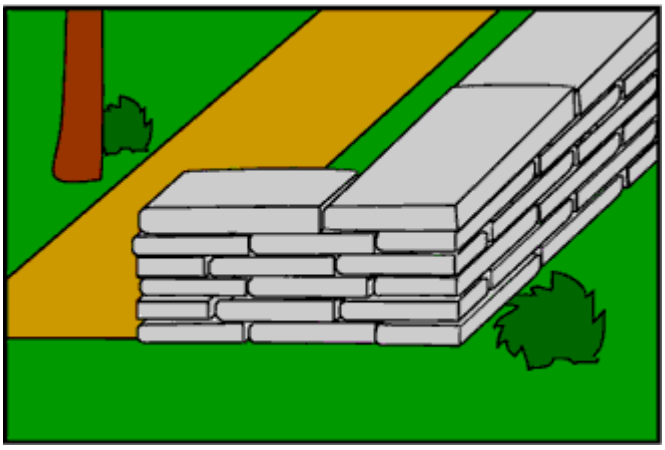
The joints between the cupboard and the wall/ceiling can easily be filled with flexible filler or decorators caulk using an sealant or "applicator" gun as shown below. Alternatively you may like to fix some coving or a shaped timber moulding.

Use butt, flush or butterfly ***hinges*** to hang the doors and either a roller catch or magnetic catch to close it.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Building a Dry Stone Wall

OVERVIEW



Introduction

Building with stone is not only beautiful, but also durable. Unlike railroad ties or wooden fences, which may rot and must be replaced every 10-15 years, stone does not deteriorate. Stone walls also offer a charm that no other material can equal, and are especially beautiful as part of flowerbeds and perennial gardens.

A "dry" stonewall means one without mortar holding the stones together. Because the individual stones are able to shift slightly in response to frost heave, there's no need to have a foundation below the frost line. Even so, building with stone requires a substantial commitment of time and effort. Yet the results are so satisfying it's easy for the project to become a minor "obsession." The following steps will help you create a freestanding wall or a retaining wall that will beautify your property for as long as you own it.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

For a 20 foot wall section

- Beginner - 8 to 10 hours
- Intermediate - 7 to 9 hours
- Advanced - 5 to 8 hours

CAUTION Since building a stonewall involves repetitive lifting, you should wear a back-support belt.

COMMON MISTAKE Do not use all the largest stones in lower courses and smaller stones on top. Mix the sizes of stone throughout the wall. Always save a layer of larger stones to use as a "cap stone" or topmost course.

HELPFUL TIP Take extra care to level the foundation for the wall from side-to-side. This will help stabilize the wall for the long term.

HELPFUL TIP Limit the height of a freestanding wall to less than three feet. Higher freestanding walls will lean and fall apart more easily over time.

HELPFUL TIP When building a retaining wall, set each higher course of stone back about 1/2-in., creating a continuous back-leaning slope or face. If you make the wall perfectly vertical, the pressure of the earth behind it will eventually push it forward and cause it to fall apart.

HELPFUL TIP Use handfuls of crushed screenings to help level and stabilize "tipsy" or uneven stones as you build the wall.

HELPFUL TIP To size and shape pieces of flat stone, use a 3-lb. hammer and stone chisel to create a line where you want the stone to break. Hammering too hard will cause the stone to break unpredictably; it's better to hit the chisel with moderate force and go over the line of breakage several times until it parts

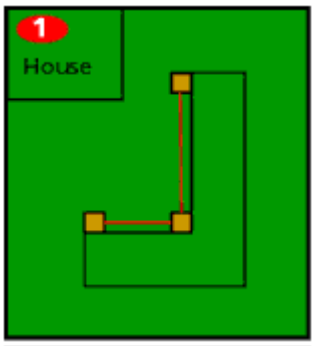
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

evenly. Dressed stone can also be cut with a circular saw and carbide blade. To break large fieldstones, use a sledgehammer.

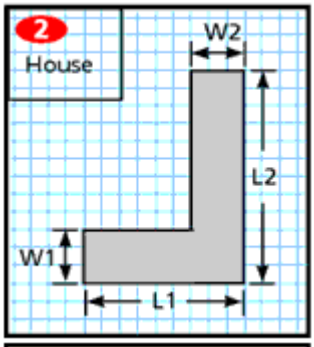
HELPFUL TIP Plan openings for walkways and gates in your wall before you begin work.

STEPS

1. Stake out the inside line for the wall to follow with wooden stakes and string. Your eye may suggest changes in position or proportion once you see the staked-out area.

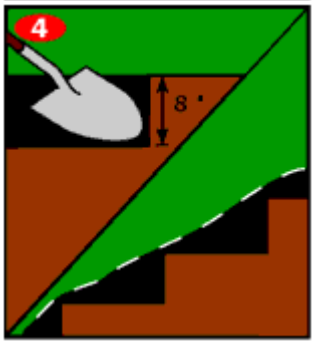


2. To calculate how much stone you'll need, make a drawing of the project and measure the total length of the proposed wall; plus the width if it's a freestanding wall. Stone is purchased by the ton, and each type of stone will provide a different running length of wall per ton. With measurements in hand, your stoneyard can tell you how many tons you'll need for your project.



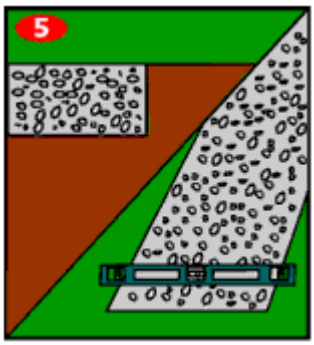
3. There are literally hundreds of different colors and varieties of stone, including sandstone, limestone, granite, mica schist, quartz, slate and so on. But there are three basic shapes: a). Field stone is roundish"bowling-ball" stones b) "Stacking" stone is irregularly shaped but relatively flat c) Dressed stone is carefully cut to be uniform and completely flat You'll choose the particular variety and shape based on the look you want, and the price. Dressed stone is more expensive than the other two, and gives your wall a more formal appearance. The stoneyard will deliver your choice on wooden pallets a few days after you order it.

4. Dig a shallow foundation trench, about 8 inches deep. The trench should be 2-3 inches wider than the base of your proposed wall. If you have access to a rear-tine tiller, it will be easier to loosen the soil. Build a stair-step on any steep slope if the slope is more than 10 degrees. Dig a "stair-step" trench for the wall so each section rests on a flat, level foundation. The ground under the wall can slide away on a slope, especially in spring when the surface thaws while it is still frozen underground.

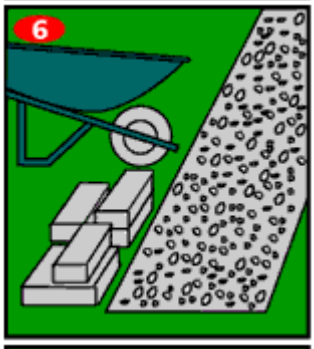


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

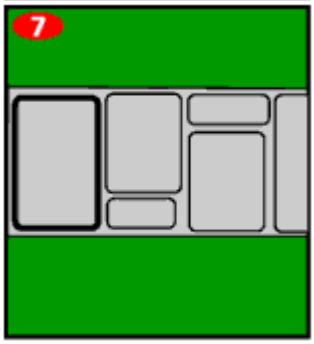
5. Fill the trench with crushed screenings to the original ground level to create a stable foundation for the wall. Carefully level the screenings with the carpenter's level; a length of board the width of your trench is helpful to spread the screenings. The screenings will compress and harden over time.



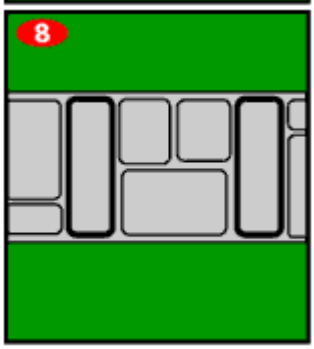
6. Transport a good selection of stones to where you want to build, using a wheelbarrow or garden cart. This is heavy work, but it's important to have a variety of sizes and shapes to work with if you're not using dressed stone.



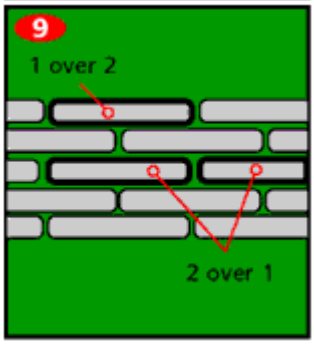
7. Begin to place stones to form your wall. Fit the stones closely together, something like a large jigsaw puzzle. A little shaping with the chisel and hammer can help. It's best to lay one course at a time. Vary the size of stones as you progress; follow a large stone with several smaller ones. Use larger pieces at an end of the wall for increased stability. Use crushed screenings to level and support uneven stones.



8. Two things help make a stonewall strong. The first is the number of stones that run the full width of the wall. Place stones of the right size across the width periodically as you stack each course. (Dressed stone walls are usually only one stone wide; so all the stones will run the full width of the wall.)

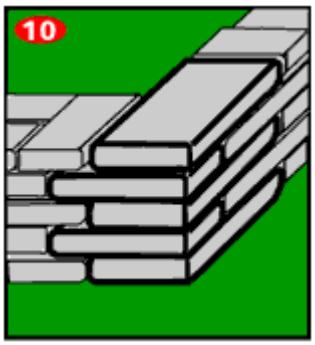


9. The second rule for strength is "One over two, two over one." In other words, when you have two stones butted together in a course, place one stone over the seam in the next course. Likewise, where you have a long stone in one course, in the next course place a seam between two stones over that length.

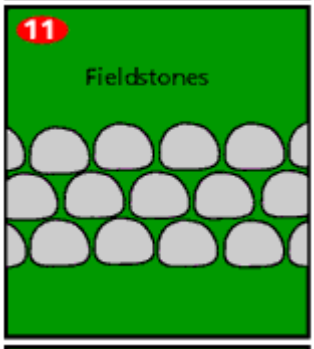


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

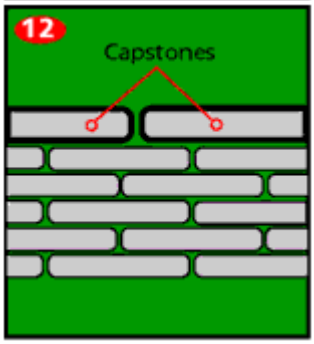
10. Take special care at corners and ends to see that seams never line up from one course to the next. Use larger stones for a corner, since this is an "end" in two directions, and alternate which direction of the wall contains the end-most stone as you stack courses.



11. With fieldstones, place each course in the spaces between stones from the course below. Place fieldstones with the flat side down. As an experienced Vermonter once observed, "Even a round stone has a flat side if you look at it long enough."



12. Hold aside a selection of larger stones to use as the top course, or "cap stone" of the wall. The extra weight helps stabilize the wall.



SHOP LIST

Materials List
Crushed limestone screenings (sometimes called "stone dust" or "fines")
Stone for building

Tools List
Paper and pencil
Wooden stakes
String
Long-handled shovel
Garden spade
Rear-tine tiller (optional)
Wheelbarrow or garden cart
Carpenter's level
Length of board
Stone chisel
3-lb. hammer
Sledgehammer
Leather work gloves

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Office of the
Deputy Prime Minister

Creating sustainable communities

The Building Regulations 2000

Electrical safety

P

APPROVED DOCUMENT

P1 **Design, installation, inspection and testing**
P2 **Provision of information**

Coming into effect 1 January 2005

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Contents

PAGE

USE OF GUIDANCE 3
THE REQUIREMENTS 5
SECTION 0: GENERAL GUIDANCE 7
Performance 7
General 7
Definitions 7
Other regulations 7
Notification of work 7
SECTION 1: DESIGN, INSTALLATION, INSPECTION AND TESTING 10
General 10
Accessibility 10
Inspection and testing before taking into service 10
Model certificates 11
SECTION 2: EXTENSIONS, MATERIAL ALTERATIONS AND MATERIAL CHANGES OF USE 12
SECTION 3: INFORMATION ABOUT OTHER LEGISLATION 13
Electricity at Work Regulations 1989 13
Electricity Safety, Quality and Continuity Regulations 2002 13
Functionality requirements 13
APPENDIX A: EXAMPLES OF ELECTRICAL INSTALLATION DIAGRAMS 14
APPENDIX B: COPIES OF BS AND IEE MODEL FORMS 19
APPENDIX C: OLDER PRACTICE THAT CAN BE ENCOUNTERED IN ALTERATION WORK 34
APPENDIX D: NEW HARMONISED CABLE IDENTIFICATION COLOURS 39
STANDARDS REFERRED TO 40
OTHER PUBLICATIONS REFERRED TO 40

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Use of guidance

THE APPROVED DOCUMENTS

This document is one of a series that has been approved and issued by the Secretary of State for the purpose of providing practical guidance with respect to the requirements of Schedule 1 to and regulation 7 of the Building Regulations 2000 (SI 2000/2531) for England and Wales. SI 2000/2531 has been amended by the Building (Amendment) Regulations 2001 (SI 2001/3335), the Building (Amendment) Regulations 2002 (SI 2002/440), the Building (Amendment) (No 2) Regulations 2002 (SI 2002/2871), the Building (Amendment) Regulations 2003 (SI 2003/2692), the Building (Amendment) Regulations 2004 (SI 2004/1465) and the Building (Amendment) (No 3) Regulations (SI 2004/3210).

At the back of this document is a list of all the documents that have been approved and issued by the Secretary of State for this purpose.

Approved Documents are intended to provide guidance for some of the more common building situations. However, there may well be alternative ways of achieving compliance with the requirements. **Thus there is no obligation to adopt any particular solution contained in an Approved Document if you prefer to meet the relevant requirement in some other way.**

Supplementary guidance

The Office of the Deputy Prime Minister occasionally issues additional material to aid interpretation of the guidance contained in Approved Documents. This material may be conveyed in official letters to Chief Executives of Local Authorities and Approved Inspectors and/or posted on the web sites accessed through: http://www.odpm.gov.uk/building-regulations.

Other requirements

The guidance contained in an Approved Document relates only to the particular requirements of the Regulations which the document addresses. The building work will also have to comply with the requirements of any other relevant paragraphs in Schedule 1 to the Regulations.

There are Approved Documents which give guidance on each of the Parts of Schedule 1 and on Regulation 7.

LIMITATION ON REQUIREMENTS

In accordance with regulation 8, the requirements in Parts A to D, F to K, N and P (except for paragraphs H2 and J6) of Schedule 1 to the Building Regulations do not require anything to be done except for the purpose of securing reasonable standards of health and safety for persons in or about buildings (and any others who may be affected by buildings or matters connected with buildings). This is one of the categories of purpose for which Building Regulations may be made.

Paragraphs H2 and J6 are excluded from regulation 8 because they deal directly with prevention of the contamination of water. Parts E and M (which deal, respectively, with resistance to the passage of sound, and access to and use of buildings) are excluded from regulation 8 because they address the welfare and convenience of building users. Part L is excluded from regulation 8 because it addresses the conservation of fuel and power. All these matters are amongst the purposes, other than health and safety, that may be addressed by Building Regulations.

MATERIALS AND WORKMANSHIP

Any building work which is subject to the requirements imposed by Schedule 1 to the Building Regulations should, in accordance with regulation 7, be carried out with proper materials and in a workmanlike manner.

You may show that you have complied with regulation 7 in a number of ways. These include the appropriate use of a product bearing CE marking in accordance with the Construction Products Directive (89/106/EEC)[1], the Low Voltage Directive (73/23/EEC and amendment 93/68/EEC)[2] and the EMC Directive (89/336/EEC)[3], as amended by the CE marking Directive (93/68/EEC)[4], or a product complying with an appropriate technical specification (as defined in those Directives), a British Standard, or an alternative national technical specification of any state which is a contracting party to the European Economic Area which, in use, is equivalent, or a product covered by a national or European certificate issued by a European Technical Approval issuing body, and the conditions of use are in accordance with the terms of the certificate. You will find further guidance in the Approved Document supporting regulation 7 on materials and workmanship.

---

1 As implemented by the Construction Products Regulations 1991 (SI 1991 No 1620)

2 As implemented by the Electrical Equipment (Safety) Regulations 1994 (SI 1994 No 3260)

3 As implemented by the Electromagnetic Compatibility Regulations 1992 (SI 1992 No 2372)

4 As implemented by the Construction Products (Amendment) Regulations 1994 (SI 1994 No 3051) and the Electromagnetic Compatibility (Amendment) Regulations 1994 (SI 1994 No 3080)

Click Here for more general construction tips: Electrical safety
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/ 3

Independent certification schemes

There are many UK product certification schemes. Such schemes certify compliance with the requirements of a recognised document which is appropriate to the purpose for which the material is to be used. Materials which are not so certified may still conform to a relevant standard.

Many certification bodies which approve such schemes are accredited by UKAS.

Technical specifications

Under section 1(1)(a) of the Building Act 1984, Building Regulations may be made for various purposes including health, safety, welfare, convenience, conservation of fuel and power and prevention of contamination of water. Standards and technical approvals are relevant guidance to the extent that they relate to these considerations. However, they may also address other aspects of performance such as serviceability, or aspects which, although they relate to the purposes listed above, are not covered by the current Regulations.

When an Approved Document makes reference to a named standard, the relevant version of the standard is the one listed at the end of the publication. However, if this version has been revised or updated by the issuing standards body, the new version may be used as a source of guidance provided it continues to address the relevant requirements of the Regulations.

The appropriate use of a product which complies with a European Technical Approval as defined in the Construction Products Directive will meet the relevant requirements.

The Office intends to issue periodic amendments to its Approved Documents to reflect emerging harmonised European Standards. Where a national standard is to be replaced by a European harmonised standard, there will be a co-existence period during which either standard may be referred to. At the end of the co-existence period the national standard will be withdrawn.

MIXED USE DEVELOPMENT

In mixed use developments part of a building may be used as a dwelling while another part has a non-domestic use. In such cases, if the requirements of the Regulations for dwellings and non-domestic use differ, the requirements for non-domestic use should apply in any shared parts of the building.

THE WORKPLACE (HEALTH, SAFETY AND WELFARE) REGULATIONS 1992

The Workplace (Health, Safety and Welfare) Regulations 1992 as amended by The Health and Safety (Miscellaneous Amendments) Regulations 2002 (SI 2002/2174) contain some requirements which affect building design. The main requirements are now covered by the Building Regulations, but for further information see: 'Workplace health, safety and welfare. Workplace (Health, Safety and Welfare) Regulations 1992, Approved Code of Practice' L24. Published by HSE Books 1992 (ISBN 0 7176 0413 6).

The Workplace (Health, Safety and Welfare) Regulations 1992 apply to the common parts of flats and similar buildings if people such as cleaners and caretakers are employed to work in these common parts. Where the requirements of the Building Regulations that are covered by this Part do not apply to buildings other than dwellings, the provisions may still be required in the situations described above in order to satisfy the Workplace Regulations.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The Requirements

This Approved Document, which takes effect on 1 January 2005, deals with the requirements of Part P of Schedule 1 to the Building Regulations 2000 (as amended by SI 2004/3210).

Requirement	*Limits on application*
PART P ELECTRICAL SAFETY	
Design, installation, inspection and testing **P1.** Reasonable provision shall be made in the design, installation, inspection and testing of electrical installations in order to protect persons from fire or injury.	The requirements of this Part apply only to electrical installations that are intended to operate at low or extra-low voltage and are— (a) in a dwelling; (b) in the common parts of a building serving one or more dwellings, but excluding power supplies to lifts; (c) in a building that receives its electricity from a source located within or shared with a dwelling; and (d) in a garden or in or on land associated with a building where the electricity is from a source located within or shared with a dwelling.
Provision of information **P2.** Sufficient information shall be provided so that persons wishing to operate, maintain or alter an electrical installation can do so with reasonable safety.	

NOTES

Examples of application of Part P

Part P applies to electrical installations in buildings or parts of buildings comprising:

- dwelling houses and flats;
- dwellings and business premises that have a common supply – for example shops and public houses with a flat above;
- common access areas in blocks of flats such as corridors and staircases;
- shared amenities of blocks of flats such as laundries and gymnasiums.

Part P applies also to parts of the above electrical installations:

- in or on land associated with the buildings – for example Part P applies to fixed lighting and pond pumps in gardens;
- in outbuildings such as sheds, detached garages and greenhouses.

Changes to the Building Regulations 2000 (as amended by SI 2004/3210)

Interpretation (regulation 2)

Regulation 2 is amended to explain the Limit on Application in Schedule 1, Part P and to include fixed electrical installations in relation to which Part P imposes a requirement:

- The definition of 'Controlled service or fitting' in regulation 2 is changed to: 'Controlled service or fitting means a service or fitting in relation to which Part G, H, J, L or P of Schedule 1 imposes a requirement.'
- Definitions of 'electrical installation', 'low voltage' and 'extra-low voltage' are added.

Requirements relating to material change of use (regulation 6)

Regulation 6(1)(a) is amended to include Part P so that, when relevant, work in connection with a material change of use must comply with the technical requirements in Part P.

Limitation on requirements (regulation 8)

Regulation 8 is amended to include Part P so that work covered by Part P is only needed for the purpose of securing reasonable standards of health and safety.

Exempt buildings and work (regulation 9)

Regulation 9 is amended so that the requirements of Part P apply to electrical installations in any greenhouse, small detached building, conservatory, porch, covered yard or way, and car port open on at least two sides.

Click Here for more general construction tips: http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Giving of a building notice or deposit of plans (regulation 12)

Regulation 12 is amended so that a person intending to carry out electrical work is not required to give a building notice or deposit full plans if:

- registered with one of the Part P self-certification schemes listed in Schedule 2A; or
- carrying out electrical work of a nature described in Schedule 2B.

Provisions applicable to self-certification schemes (regulation 16A)

Regulation 16A is amended to put an obligation on a competent person registered with a Part P self-certification scheme to provide a self-certification certificate to the occupier and a notice to that effect (or a copy of the certificate) to the local authority not more than 30 days after completion of the work.

Interaction with other Parts of the Building Regulations

Other Parts of Schedule 1 to the Building Regulations contain requirements affecting electrical installations. Examples include, but are not limited to:

- Part A (Structure): depth of chases in walls, and size of holes and notches in floor and roof joists;
- Part B (Fire safety): fire safety of certain electrical installations; provision of fire alarm and fire detection systems; fire resistance of penetrations through floors and walls;
- Part C (Site preparation and resistance to moisture): moisture resistance of cable penetrations through external walls;
- Part E (Resistance to the passage of sound): penetrations through floors and walls;
- Part F (Ventilation): ventilation rates for dwellings;
- Part L (Conservation of fuel and power): energy efficient lighting; reduced current-carrying capacity of cables in insulation;
- Part M (Access to and use of buildings): heights of switches and socket outlets.

Further guidance is available from the IEE (Institution of Electrical Engineers) at www.iee.org/Publish/WireRegs/IEE_Building_Regs.pdf. The NICEIC (National Inspection Council for Electrical Installation Contracting) and the ECA (Electrical Contractors' Association) have also published the 'Electrical Installers' Guide to the Building Regulations' available from www.niceic.org.uk or www.eca.co.uk.

Regulation 4(2) states that, on completion of the work, the building should be no worse in terms of the level of compliance with the other applicable Parts of Schedule 1 to the Building Regulations. For example, one or more perforations of a ceiling lining beneath a floor - made to accommodate recessed lighting or similar fittings - may have an adverse effect on that floor's performance in terms of its resistance to fire and sound penetration. Due regard should therefore be paid to the guidance in Approved Documents B and E on the performance of compartment floors.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Section 0:

GENERAL GUIDANCE

Performance

0.1 In the Secretary of State's view, the requirements will be met by adherence to the 'Fundamental Principles' for achieving safety given in BS 7671: 2001 Chapter 13. To achieve these requirements electrical installations must be:

a. designed and installed to afford appropriate protection against mechanical and thermal damage, and so that they do not present electric shock and fire hazards to people;

b. suitably inspected and tested to verify that they meet the relevant equipment and installation standards.

General

0.2 A way of satisfying the fundamental principles would be to follow:

a. the technical rules described in the body of BS 7671: 2001, or an equivalent standard approved by a member of the EEA that includes issuing an electrical installation certificate to the person ordering the work; and

b. guidance given in installation manuals that are consistent with BS 7671: 2001, such as:

i) the IEE (Institution of Electrical Engineers) On-Site Guide;

ii) the series of IEE Publications, Guidance Notes Nos 1 to 7.

0.3 The diagrams in Appendix A give an indication of the sorts of electrical services encountered in dwellings, some of the ways they can be connected and the complexity of the wiring and protective systems necessary to supply them. **They are intended as an indication of the scope of Part P for those who are not electricians; they must not be used for installation purposes.**

Definitions

0.4 The following meanings apply throughout this document:

Electrical installation is defined in BS 7671[1] as 'an assembly of associated electrical equipment supplied from a common origin to fulfil a specific purpose and having certain co-ordinated characteristics.' For the purposes of Building Regulations an electrical installation means fixed electrical cables or fixed electrical equipment located on the consumer's side of the electricity supply meter.

Extra-low voltage is defined in BS 7671 as 'normally not exceeding 50 V ac or 120 V ripple-free dc, whether between conductors or to earth.'

Low voltage is defined in BS 7671 as 'normally exceeding extra-low voltage but not exceeding 1000 V ac or 1500 V dc between conductors, or 600 V ac or 900 V dc between conductors and earth.'

Kitchen is defined in the Building Regulations as 'a room or part of a room which contains a sink and food preparation facilities'.

As a guide only, in open plan areas the zone of a kitchen may be considered to extend from the edge of the sink to a distance of 3m or to a nearer dividing wall.

Other Regulations

0.5 Electrical work is also affected by the Electricity at Work Regulations 1989 as amended and the Electricity Safety, Quality and Continuity Regulations 2002 as amended, as described in paragraphs 3.1 to 3.13.

Notification of work

0.6 The requirements apply to all electrical installation work.

When necessary to involve building control bodies

0.7 Except in the circumstances outlined in paragraph 0.8 below, notification of proposals to carry out electrical installation work must be given to a building control body before work begins.

When not necessary to involve building control bodies

0.8 It is not necessary to give prior notification of proposals to carry out electrical installation work to building control bodies in the following circumstances:

a. The proposed installation work is undertaken by a person[2] who is a competent person registered with an electrical self-certification scheme authorised by the Secretary of State. In these cases the person is responsible for ensuring compliance with BS 7671: 2001 and all relevant Building Regulations. On completion of the work, the person ordering the work should receive a signed Building Regulations self-certification certificate, and the relevant building control body should receive a copy of the information on the certificate. The person ordering the work should also receive a duly completed Electrical

[1] BS 7671: 2001 Part 2

[2] 'Person' means a legal person, ie a firm or an individual

Click Here for more general construction tips: http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Installation Certificate as or similar to the model in BS 7671[3] (see paragraphs 1.6 to 1.12). As required by BS 7671, the certificate must be made out and signed by the competent person or persons who carried out the design, construction, inspection and testing work. Copies of relevant BS 7671: 2001 model forms are shown in Appendix B.

OR

b. The proposed electrical installation work is non-notifiable work of the type described in Table 1 and does not include the provision of a new circuit.

   i) When the non-notifiable work described in Table 1 is to be undertaken professionally, a way of showing compliance would be to follow BS 7671: 2001 and to issue to the person ordering the work a Minor Electrical Installation Works Certificate as or similar to the model in BS 7671[3] (see paragraphs 1.6 to 1.12). A copy of this form is shown in Appendix B. As required by BS 7671, the certificate must be made out and signed by a competent person in respect of the inspection and testing of an installation. The competent person need not necessarily be a person registered with an electrical self-certification scheme, and may be a third party.

   ii) When the non-notifiable work described in Table 1 is to be undertaken by a DIY worker, a way of showing compliance would be to follow the IEE guidance or guidance in other authoritative manuals that are based on this, and to have a competent person inspect and test the work and supply a Minor Electrical Installation Works Certificate. The competent person need not necessarily be registered with an electrical self-certification scheme but, as required by BS 7671, must be competent in respect of the inspection and testing of an installation.

   iii) In any event, non-notifiable works should be drawn to the attention of the person carrying out subsequent work or periodic inspections. A way of doing this would be to supply Minor Electrical Installation Works Certificates covering the additions and alterations made since the original construction of the installation or since the most recent periodic inspection.

Table 1: Work that need not be notified to building control bodies

Work consisting of:
Replacing any electrical fitting including socket-outlets, control switches and ceiling roses
Replacing the cable for a single circuit only, where damaged, for example, by fire, rodent or impact [(a)]
Re-fixing or replacing the enclosures of existing installation components [(b)]
Providing mechanical protection to existing fixed installations [(c)]
Work that is not in a kitchen or special location and does not involve a special installation [(d)] and consists of:
Adding lighting points (light fittings and switches) to an existing circuit [(e)]
Adding socket-outlets and fused spurs to an existing ring or radial circuit [(e)]
Installing or upgrading main or supplementary equipotential bonding [(f)]
Work not in a special location on:
Telephone or extra-low voltage wiring and equipment for the purposes of communications, information technology, signalling, control and similar purposes

Notes

(a) On condition that the replacement cable has the same current carrying capacity, follows the same route and does not serve more than one sub-circuit through a distribution board.
(b) If the circuit's protective measures are unaffected.
(c) If the circuit's protective measures and current-carrying capacity of conductors are unaffected by increased thermal insulation.
(d) Special locations and installations are listed in Table 2.
(e) Only if the existing circuit protective device is suitable and provides protection for the modified circuit, and other relevant safety provisions are satisfactory.
(f) Such work shall comply with other applicable legislation, such as the Gas Safety (Installation and Use) Regulations.

[3] BS 7671: 2001 Appendix 6

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Table 2: Special locations and installations [a]

Special locations:
Locations containing a bath tub or shower basin
Swimming pools or paddling pools
Hot air saunas
Special installations:
Electric floor or ceiling heating systems
Garden lighting or power installations
Solar photovoltaic (PV) power supply systems
Small scale generators such as microCHP units
Extra-low voltage lighting installations, other than pre-assembled, CE-marked lighting sets

Notes

(a) See IEE Guidance Note 7 which gives more guidance on achieving safe installations where risks to people are greater.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Section 1:

DESIGN, INSTALLATION, INSPECTION AND TESTING

General

1.1 Where electrical installation work is to be carried out professionally, compliance is necessary with the Electricity at Work Regulations 1989 as amended.

1.2 Electrical installations should be designed and installed, suitably enclosed and separated by appropriate distances to provide mechanical and thermal protection, so that they incorporate measures that afford appropriate protection for persons against the risks of electric shock, burn or fire injuries.

1.3 The Electricity Safety, Quality and Continuity Regulations 2002 require the electricity distributor to install the cut-out and meter in a safe location, where they are mechanically protected and can be safely maintained. In compliance with this requirement, the electricity distributor and installer may be required to take into account the risk of flooding[4].

1.4 In accordance with the Electricity Safety, Quality and Continuity Regulations 2002 and the contract for a mains supply, proposals for new installations or significant alterations to existing ones must be agreed with the electricity distributor.

Accessibility

1.5 Wall-mounted switches and socket-outlets should be located so that they are easily reachable where this is necessary to comply with Part M of the Building Regulations. Approved Document M shows ways of complying. Accessible consumer units should be fitted with a child-proof cover or installed in a lockable cupboard.

Inspection and testing before taking into service

1.6 Electrical installations should be inspected and tested during and at the end of installation, before they are taken into service, to verify that they are reasonably safe, that is to say that they comply with BS 7671: 2001.

1.7 A way of demonstrating this compliance would be to follow the procedures in Chapter 74 of BS 7671: 2001, and to supply:

a. to the person ordering the work copies of the forms called for, signed by a person competent to do so; and

b. in the case of a competent person registered with an electrical self-certification scheme, to the building control body a declaration that compliance with the Building Regulations has been achieved.

1.8 The forms called for in paragraph 1.7a. above should show that the electrical installation work has been:

a. Inspected (this is necessary during erection as well as on completion) to verify that the components are:

   i) made in compliance with appropriate British Standards or harmonised European Standards;

   ii) selected and installed in accordance with BS 7671 (including consideration of external influences such as the presence of moisture);

   iii) not visibly damaged or defective so as to be unsafe.

b. Tested to check satisfactory performance in relation to continuity of conductors, insulation resistance, separation of circuits, polarity, earthing and bonding arrangements, earth fault loop impedance and functionality of all protective devices including residual current devices.

1.9 Section 712 of BS 7671: 2001 provides a list of all the inspections that may be necessary although in particular cases only some elements may be relevant. A schedule of inspections is given in Appendix 6 of BS 7671, and a copy is included in this Approved Document at Appendix B.

1.10 Section 713 of BS 7671: 2001 provides a list of all the tests that may be necessary although in particular cases only some elements may be relevant. A blank schedule of test results is given in Appendix 6 of BS 7671, and a copy is included in this Approved Document at Appendix B. Tests should be carried out using appropriate and accurate instruments under the conditions given in BS 7671, and the results should be recorded on forms like the model in Appendix 6 of BS 7671. The results should be compared with the relevant performance criteria to confirm compliance.

1.11 The inspection and testing of DIY work should meet the above requirements.

[4] Some guidance is given in the ODPM publication *Preparing for Floods*, available from www.odpm.gov.uk

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Model certificates

1.12 Electrical installation certificates modelled on those in BS 7671: 2001 are available from the IEE [5] and other sources, and model forms are given at Appendix B. They cover works ranging in scope from minor works to large projects such as blocks of flats. In particular cases the most appropriate form should be used and signed by the person responsible for carrying out the works, that is to say the design, construction, inspection and testing.

[5] www.iee.org/Publish/WireRegs/forms.cfm

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Section 2:

EXTENSIONS, MATERIAL ALTERATIONS AND MATERIAL CHANGES OF USE

2.1 Where any electrical installation work is classified as an extension, a material alteration or a material change of use, the addition and alteration work must include:

a. such works on the existing fixed electrical installation in the building as are necessary to enable the additions and alterations, the circuits which feed them, the protective measures and the relevant earthing and bonding systems to meet the requirements; and

b. establishing that the mains supply equipment is suitable.

2.2 A way of complying would be to follow the guidance given above in relation to design and installation and to show that for the altered circumstances:

a. the rating and the condition of the existing equipment belonging to both the consumer and to the electricity distributor:

   i) can carry the additional loads being allowed for, or

   ii) are improved so that they can carry the additional loads being allowed for; and

b. the correct protective measures are used; and

c. the earthing and equipotential bonding arrangements are satisfactory.

2.3 Appendix C offers guidance on some of the types of older installations that might be encountered in alteration work.

2.4 Appendix D offers guidance on applying the harmonised European cable identification system when making additions and alterations to existing installations.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Section 3:

INFORMATION ABOUT OTHER LEGISLATION

Electricity at Work Regulations 1989

3.1 All electrical installations must be accommodated in ways that meet the requirements of the Building Regulations. However electrical installations carried out by persons on whom duties are imposed by the Electricity at Work Regulations 1989 must meet the requirements of those Regulations.

3.2 The advice given below reflects the present state of the Electricity at Work Regulations 1989 following amendments by Statutory Instruments 1996/192, 1997/1993 and 1999/2024.

3.3 Regulation 3 imposes duties on employers, employees and the self-employed. Regulation 3(2)(b) places duties on employees equivalent to those placed on employers and self-employed persons where there are matters within their control.

3.4 The text of the Electricity at Work Regulations and guidance on how to comply with them are contained in the Health and Safety guidance document 'Memorandum of Guidance on the Electricity at Work Regulations 1989 – HSR25'. Important elements of the Regulations include:

a. The Electricity at Work Regulations require that electrical work is only carried out by persons that are competent to prevent danger and injury while doing it, or who are appropriately supervised (Regulation 16).

b. The Electricity at Work Regulations set general requirements for the design, construction and suitability of equipment for its intended use (Regulations 4(1), 5, 6, 7, 8, 9, 10, 11, 12).

Electricity Safety, Quality and Continuity Regulations 2002

3.5 The Electricity Safety, Quality and Continuity Regulations 2002 (Statutory Instrument 2002/2665) came into force on 31 January 2003. These Regulations replaced the Electricity Supply Regulations 1988 (as amended).

3.6 The Regulations specify safety standards which are aimed at protecting the general public from danger. In addition, the Regulations specify power quality and supply continuity requirements to ensure an efficient and economic electricity supply service for consumers. The Regulations were introduced to improve standards in public safety and to align requirements to modern electricity markets.

3.7 The duty holders are generators, distributors, suppliers, meter operators, consumers and specified persons. Most of the duties apply to distributors who own or operate networks used to supply consumers' installations, street furniture or other networks.

3.8 Amongst other duties, distributors are required to provide an earthing facility for new connections (unless this would be inappropriate for safety reasons), to maintain the supply within defined tolerance limits and to provide certain technical and safety information to consumers to enable them to design their installations.

3.9 Distributors and meter operators must ensure that their equipment on consumers' premises is suitable for its purpose and safe in its particular environment and that the polarity of conductors is clearly indicated.

3.10 The Regulations allow the Secretary of State to issue safety enforcement notices to consumers in circumstances where consumers' installations outside buildings present a danger to the public.

3.11 In relation to 'embedded' generation[6] , the Regulations require persons operating 'switched alternative' sources of energy in their installations to prevent a parallel connection occurring with the distributor's network and to comply with BS 7671. Sources of energy that operate in parallel with the distributor's network must meet certain additional safety standards: for example the equipment must not be a source of danger or cause interference with the distributor's network. Persons installing domestic combined heat and power equipment must advise the local distributor of their intentions before or at the time of commissioning the source.

3.12 Distributors are prevented by the Regulations from connecting installations to their networks which do not comply with BS 7671. Other persons may connect installations to distributors' networks providing they obtain the prior consent of the distributor, who may require evidence that the installation complies with BS 7671 and that the connection itself will meet safety and operational requirements. Distributors may disconnect consumers' installations which are a source of danger or cause interference with their networks or other installations.

3.13 Detailed Guidance on the Regulations is available at www.dti.gov.uk/electricity-regulations.

Functionality requirements

3.14 Part P of the Building Regulations makes requirements covering the safety of fixed electrical installations, but does not cover system functionality. The functionality of electrically powered systems such as fire alarm systems, fans and pumps is covered in other Parts of the Building Regulations and other legislation.

---

6 'Embedded' generators are those connected to the distribution networks of public electricity suppliers rather than directly to the National Grid. Most CHP and renewable generating stations are embedded.

Click Here for more general construction tips: http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Appendix A: Examples of electrical installation diagrams

Notes

1) The diagrams do not give all the information needed to achieve compliance with BS 7671, nor do they cover all the electrical services found in dwellings, some of which (eg swimming pools and saunas) are subject to special requirements specified in Part 6 of BS 7671: 2001. **The diagrams must not be used for installation purposes.**

2) The diagrams are simplified examples of what may be encountered. They are not a substitute for the proper consideration of for instance:

a) Cross-sectional areas (csa) of the phase and neutral conductors of circuits. The minimum csa required by BS 7671 depends on a number of variables, including: type of cable, number of cores, type and nominal current of overcurrent protective device, grouping with other circuits, ambient temperature, contact with thermally insulating materials, and circuit length.

b) Cross-sectional areas of protective conductors. BS 7671 contains different rules, involving a number of variables, for determining the minimum csa for each type of protective conductor, including the earthing conductor, circuit protective conductors, main equipotential bonding conductors, and supplementary bonding conductors.

c) Types and nominal current ratings of fuses or circuit breakers. These particulars depend on the circuit design current and load characteristics, and need to be co-ordinated with the circuit conductors and with the earth fault loop impedance of the circuit.

d) Types of wiring or wiring system. While PVC insulated and sheathed cables are likely to be suitable for much of the wiring in a typical dwelling, other types of cable may also be necessary. For example, heat-resisting flexible cables are required for the final connections to certain equipment; the cable to the garage or shed, if run underground, is subject to certain requirements; and cables concealed in floors and walls in certain circumstances are required to have an earthed metal covering, be enclosed in steel conduit, or have additional mechanical protection.

e) Principles of cable routing. BS 7671 contains criteria for the routing and positioning of cables, so as to give protection against electric shock and fire as a result of mechanical damage to a cable. For example, such criteria are given for cables concealed in walls or buried in the ground.

f) Current ratings of circuits to fixed current-using equipment such as a shower or cooker.

In the above context, diagrams are given as follows:

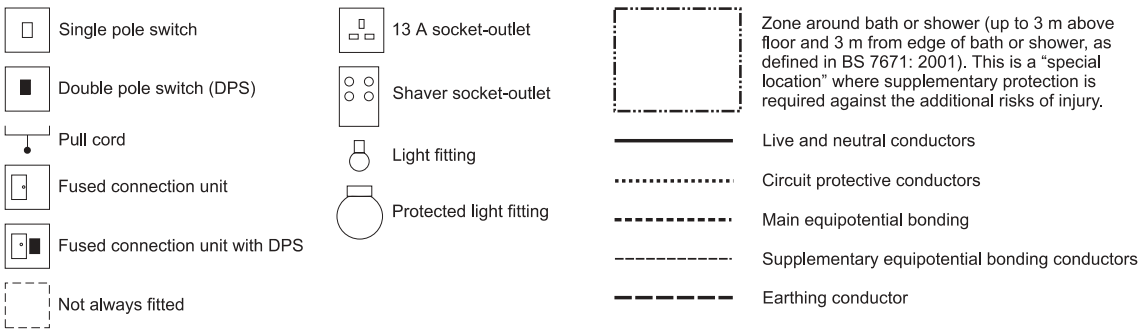
Diagram 1(a) indicates the many electrical appliances that can be found in the home and how they might be supplied.

Diagram 1(b) indicates earthing and bonding arrangements that can be necessary.

Diagram 2(a) indicates earthing arrangements as might be provided by electricity distributors.

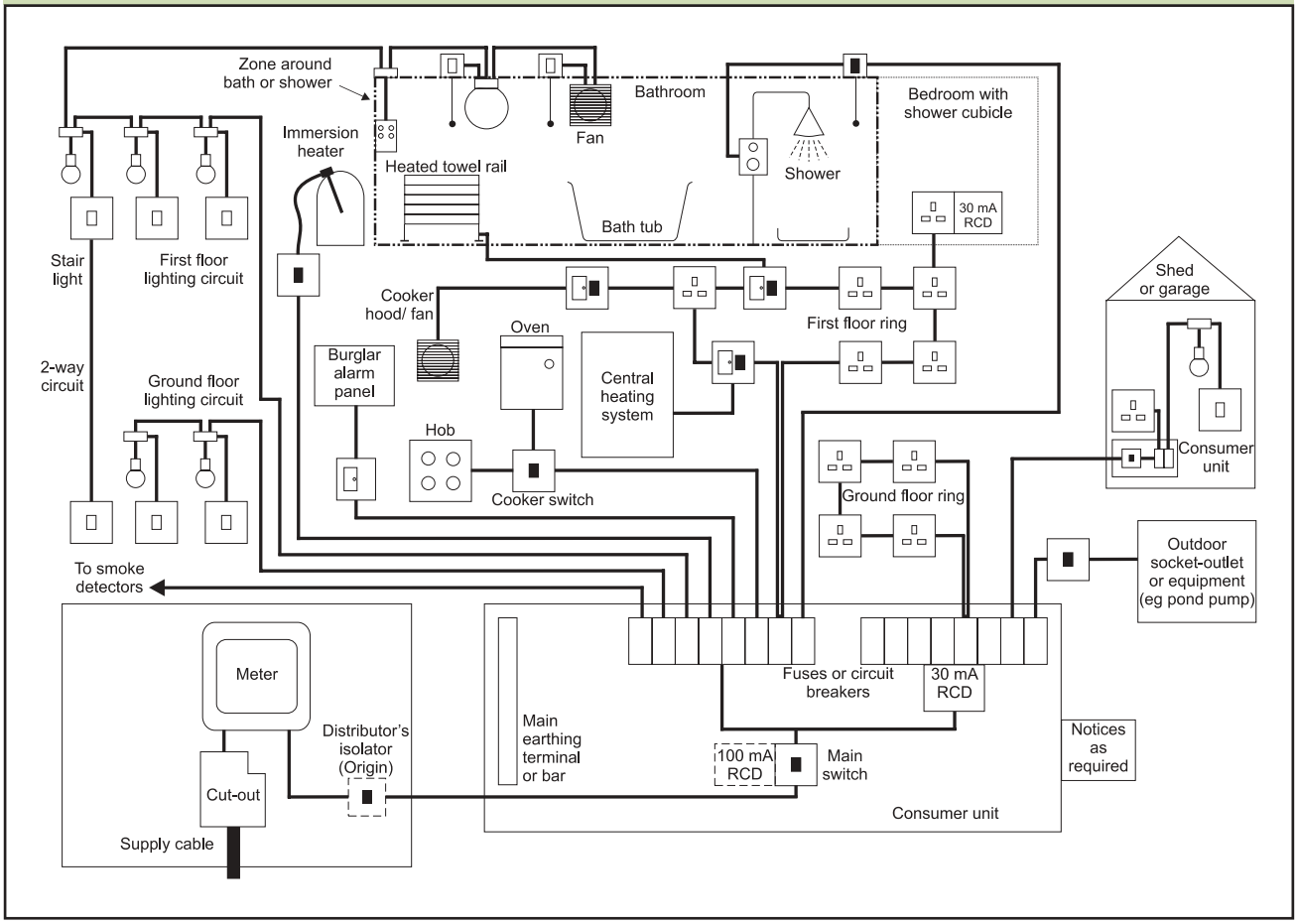
Diagram 2(b) indicates the earthing arrangement as might need to be provided by the consumer.

Key to Diagrams



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Diagram 1(a): **Illustration of the fixed electrical installation that might be commonly encountered in new or upgraded existing dwellings**

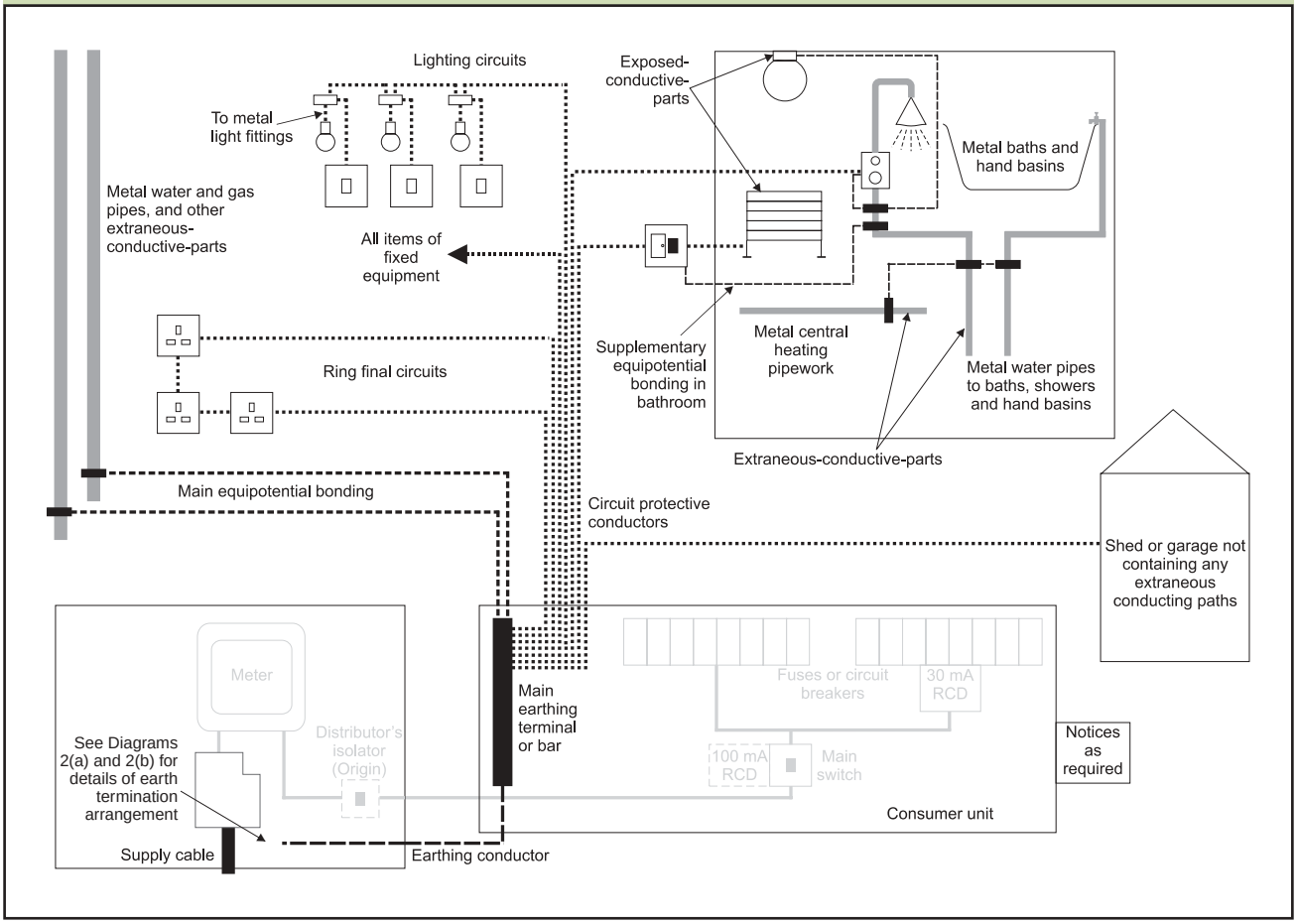


Notes:

1. See the general rules in BS 7671: 2001.
2. The RCD component in the main switch is required for TT systems (see Diagram 2(b)). Individual circuit 30 mA RCDs may be required to avoid unnecessary tripping.
3. The notices include advice on periodic testing and regular test operation of the RCDs.
4. The zone shown around the bath or shower corresponds to zone 3 in Section 601 of BS 7671: 2001.

   The socket-outlet shown in the bedroom with the shower cubicle must be outside zone 3.

Diagram 1(b): **Illustration of the earthing and bonding conductors that might be part of the electrical installation shown in Diagram 1(a)**

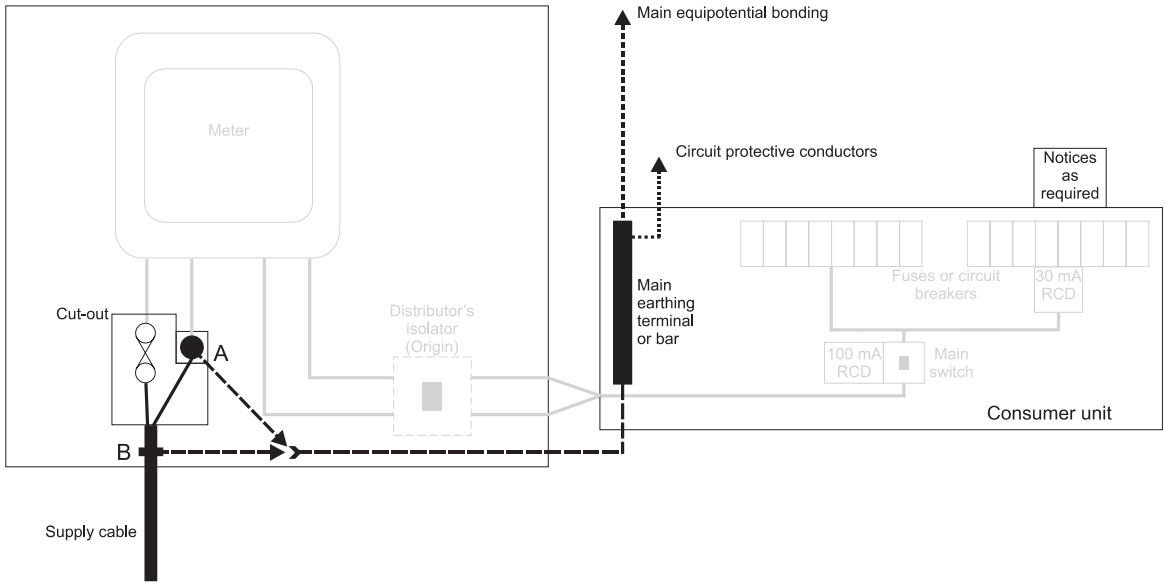


Notes:

1. See the general rules in BS 7671: 2001.
2. Circuit protective conductors are taken to all items of fixed electrical equipment and local isolation and switching devices which appear in Diagram 1(a).
3. In the case of a protective multiple earthing (PME) supply (see Diagram 2(a)), consult the electricity distributor.
4. Supplementary bonding is required in bathrooms to an extent dependent upon the presence of metallic fixtures, fittings and pipework: see Section 601 of BS 7671: 2001.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Diagram 2(a): **Example earthing arrangement where the electricity distributor provides the earth connection (referred to as TN-C-S where the connection is made to A, or TN-S where the connection is made to B – the most common systems in urban areas)**



Notes:

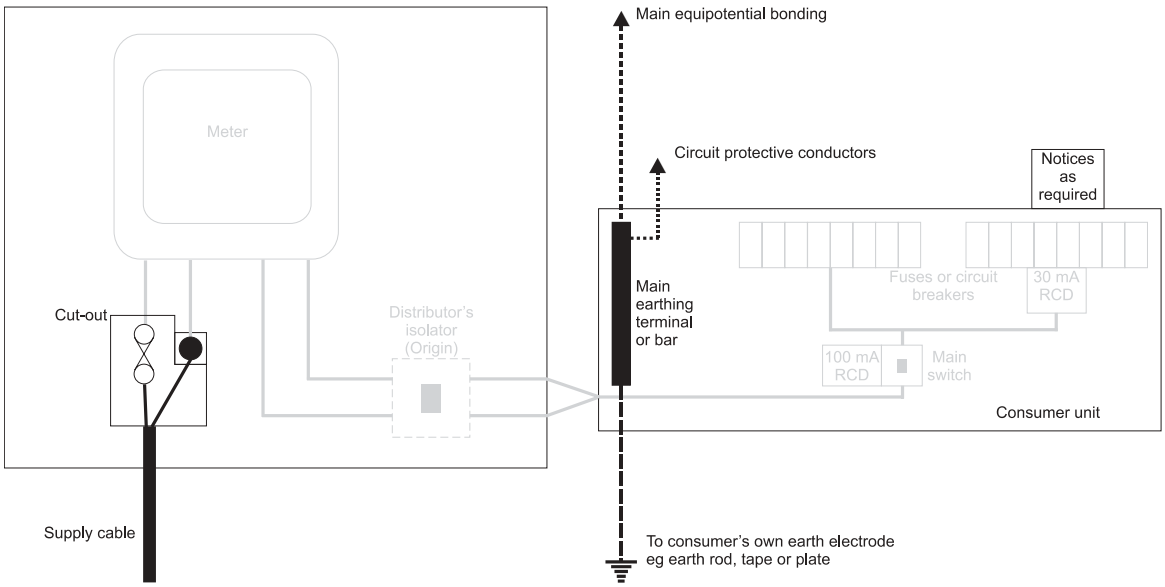
1. Connection A shows the arrangement where an electricity distributor provides a combined protective earthing and neutral conductor as part of a protective multiple earthing system (referred to as TN-C-S).

   Connection B shows the arrangement where an electricity distributor provides a protective earthing conductor (usually the metallic covering of the supply cable) that is separate from the neutral conductor (as part of a system referred to as TN-S).

2. Connections A or B can only be made by the electricity distributor or its appointed agent.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Diagram 2(b): **Example earthing arrangement where consumers provide their own earthing connection (referred to as a TT system)**



Notes:

1. BS 7671: 2001 requires that the part of the installation between the origin and the first RCD shall comply with the requirements for protection by Class II equipment or equivalent insulation. For the arrangement shown, this applies to the consumer unit and the wiring connecting it to the supplier's equipment.
2. The 100 mA RCD component of the main switch should be of the time delayed type.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Appendix B: Copies of BS 7671 and IEE model forms

The BS 7671 and IEE forms and notes on the following pages are taken from IEE Guidance Note 3, 2002 edition, and are available for downloading from the IEE website at www.iee.org/Publish/WireRegs/forms.cfm.

They appear in the order:

Introduction

1. Introduction to Appendix 6 of BS 7671: 2001 (Model forms for certification and reporting)

Initial inspection and testing

2. Notes for short form and full versions of Electrical Installation Certificate

3. Form 1 - Short form of Electrical Installation Certificate (for use when one person is responsible for the design, construction, inspection and testing of an installation), including guidance for recipients

4. Form 2 - Full Electrical Installation Certificate, including guidance for recipients (standard form from Appendix 6 of BS 7671)

5. Form 3 - Schedule of Inspections (from Appendix 6 of BS 7671) with notes

6. Form 4 - Schedule of Test Results (from Appendix 6 of BS 7671) with notes

Minor works

7. Notes on completion of Minor Electrical Installation Works Certificate

8. Form 5 - Minor Electrical Installation Works Certificate, including guidance for recipients (from Appendix 6 of BS 7671)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Electrical safety
19

CERTIFICATION AND REPORTING

INTRODUCTION

(i) The Electrical Installation Certificate required by Part 7 of BS 7671 shall be made out and signed or otherwise authenticated by a competent person or persons in respect of the design, construction, inspection and testing of the work.

(ii) The Minor Works Certificate required by Part 7 of BS 7671 shall be made out and signed or otherwise authenticated by a competent person in respect of the inspection and testing of an installation.

(iii) The Periodic Inspection Report required by Part 7 of BS 7671 shall be made out and signed or otherwise authenticated by a competent person in respect of the inspection and testing of an installation.

(iv) Competent persons will, as appropriate to their function under (i) (ii) and (iii) above, have a sound knowledge and experience relevant to the nature of the work undertaken and to the technical standards set down in this British Standard, be fully versed in the inspection and testing procedures contained in this Standard and employ adequate testing equipment.

(v) Electrical Installation Certificates will indicate the responsibility for design, construction, inspection and testing, whether in relation to new work or further work on an existing installation.

Where design, construction and inspection and testing is the responsibility of one person a Certificate with a single signature declaration in the form shown below may replace the multiple signatures section of the model form.

FOR DESIGN, CONSTRUCTION, INSPECTION & TESTING.

I being the person responsible for the Design, Construction, Inspection & Testing of the electrical installation (as indicated by my signature below), particulars of which are described above, having exercised reasonable skill and care when carrying out the Design, Construction, Inspection & Testing, hereby CERTIFY that the said work for which I have been responsible is to the best of my knowledge and belief in accordance with BS 7671 : ……., amended to ……(date) except for the departures, if any, detailed as follows.

(vi) A Minor Works Certificate will indicate the responsibility for design, construction, inspection and testing of the work described in Part 4 of the certificate.

(vii) A Periodic Inspection Report will indicate the responsibility for the inspection and testing of an installation within the extent and limitations specified on the report.

(viii) A schedule of inspections and a schedule of test results as required by Part 7 (of BS 7671) shall be issued with the associated Electrical Installation Certificate or Periodic Inspection Report.

(ix) When making out and signing a form on behalf of a company or other business entity, individuals shall state for whom they are acting.

(x) Additional forms may be required as clarification, if needed by non-technical persons, or in expansion, for larger or more complex installations.

(xi) The IEE Guidance Note 3 provides further information on inspection and testing on completion and for periodic inspections.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

ELECTRICAL INSTALLATION CERTIFICATES
NOTES FOR FORMS 1 AND 2

1. The Electrical Installation Certificate is to be used only for the initial certification of a new installation or for an alteration or addition to an existing installation where new circuits have been introduced.

   It is not to be used for a Periodic Inspection for which a Periodic Inspection Report form should be used. For an alteration or addition which does not extend to the introduction of new circuits, a Minor Electrical Installation Works Certificate may be used.

   The original Certificate is to be given to the person ordering the work (Regulation 742-01-03). A duplicate should be retained by the contractor.

2. This Certificate is only valid if accompanied by the Schedule of Inspections and the Schedule(s) of Test Results.

3. The signatures appended are those of the persons authorised by the companies executing the work of design, construction and inspection and testing respectively. A signatory authorised to certify more than one category of work should sign in each of the appropriate places.

4. The time interval recommended before the first periodic inspection must be inserted (see IEE Guidance Note 3 for guidance).

5. The page numbers for each of the Schedules of Test Results should be indicated, together with the total number of sheets involved.

6. The maximum prospective fault current recorded should be the greater of either the short-circuit current or the earth fault current.

7. The proposed date for the next inspection should take into consideration the frequency and quality of maintenance that the installation can reasonably be expected to receive during its intended life, and the period should be agreed between the designer, installer and other relevant parties.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Electrical safety
21

Form 1 Form No /1

ELECTRICAL INSTALLATION CERTIFICATE (notes 1 and 2)

(REQUIREMENTS FOR ELECTRICAL INSTALLATIONS - BS 7671 [IEE WIRING REGULATIONS])

DETAILS OF THE CLIENT (note 1)

.....

.....

.....

INSTALLATION ADDRESS

.....

.....

.....Postcode .....

DESCRIPTION AND EXTENT OF THE INSTALLATION Tick boxes as appropriate

Description of installation: .....

Extent of installation covered by this Certificate: .....

.....

.....

.....

.....

.....

New installation ☐

Addition to an existing installation ☐

Alteration to an existing installation ☐

FOR DESIGN, CONSTRUCTION, INSPECTION & TESTING

I being the person responsible for the Design, Construction, Inspection & Testing of the electrical installation (as indicated by my signature below), particulars of which are described above, having exercised reasonable skill and care when carrying out the Design, Construction, Inspection & Testing, hereby CERTIFY that the said work for which I have been responsible is to the best of my knowledge and belief in accordance with BS 7671 : ....., amended to ..... (date) except for the departures, if any, detailed as follows:

Details of departures from BS 7671 (Regulations 120-01-03, 120-02):

The extent of liability of the signatory is limited to the work described above as the subject of this Certificate.

Name (IN BLOCK LETTERS):..... Position: .....

Signature (note 3): ..... Date:.....

For and on behalf of: .....

Address: .....

.....

.....Postcode ..... Tel No: .....

NEXT INSPECTION

I recommend that this installation is further inspected and tested after an interval of not more than ..... years/months (notes 4 and 7)

SUPPLY CHARACTERISTICS AND EARTHING ARRANGEMENTS Tick boxes and enter details, as appropriate

Earthing arrangements	Number and Type of Live Conductors	Nature of Supply Parameters	Supply Protective Device Characteristics
TN-C ☐	a.c. ☐ d.c ☐	Nominal voltage, U/Uo(1) V	Type: .....
TN-S ☐	1-phase, 2-wire ☐ 2-pole ☐	Nominal frequency, f (1) .....Hz	.....
TN-C-S ☐	1-phase, 3-wire ☐ 3-pole ☐	Prospective fault current, Ipf (2) (note 6) .....kA	
TT ☐	2-phase, 3-wire ☐ other ☐	External loop impedance, Ze (2) .....Ω	Nominal current rating
IT ☐	3-phase, 3-wire ☐	(Note: (1) by enquiry, (2) by enquiry or by measurement)	.....A
Alternative source ☐ of supply (to be detailed on attached schedules)	3-phase, 4-wire ☐		

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

PARTICULARS OF INSTALLATION REFERRED TO IN THE CERTIFICATE Tick boxes and enter details, as appropriate

Means of Earthing

Distributor's facility ☐

Installation earth electrode ☐

Maximum Demand

Maximum demand (load).....Amps per phase

Details of Installation Earth Electrode (where applicable)

Type (e.g. rod(s), tape etc)	Location	Electrode resistance to earth
.....	.....	.....Ω

Main Protective Conductors

Earthing conductor:	material	csa .....mm^2	connection verified ☐
Main equipotential bonding conductors	material	csa .....mm^2	connection verified ☐

To incoming water and/or gas service ☐ To other elements .....

Main Switch or Circuit-breaker

BS, Type ..... No. of poles ..... Current rating .....A Voltage rating V

Location ..... Fuse rating or setting .....A

Rated residual operating current $I_{\Delta n}$ =..... mA, and operating time of.....ms (at $I_{\Delta n}$)

(applicable only where an RCD is suitable and is used as a main circuit-breaker)

COMMENTS ON EXISTING INSTALLATION: (In the case of an alteration or additions see Section 743)

.....

.....

.....

.....

.....

.....

.....

.....

SCHEDULES (note 2)

The attached Schedules are part of this document and this Certificate is valid only when they are attached to it.

..... Schedules of Inspections and ..... Schedules of Test Results are attached.

(Enter quantities of schedules attached)

GUIDANCE FOR RECIPIENTS

This safety Certificate has been issued to confirm that the electrical installation work to which it relates has been designed, constructed and inspected and tested in accordance with British Standard 7671 (The IEE Wiring Regulations).

You should have received an original Certificate and the contractor should have retained a duplicate Certificate. If you were the person ordering the work, but not the user of the installation, you should pass this Certificate, or a full copy of it including the schedules, immediately to the user.

The "original" Certificate should be retained in a safe place and be shown to any person inspecting or undertaking further work on the electrical installation in the future. If you later vacate the property, this Certificate will demonstrate to the new owner that the electrical installation complied with the requirements of British Standard 7671 at the time the Certificate was issued. The Construction (Design and Management) Regulations require that for a project covered by those Regulations, a copy of this Certificate, together with schedules is included in the project health and safety documentation.

For safety reasons, the electrical installation will need to be inspected at appropriate intervals by a competent person. The maximum time interval recommended before the next inspection is stated on Page 1 under "Next Inspection".

This Certificate is intended to be issued only for a new electrical installation or for new work associated with an alteration or addition to an existing installation. It should not have been issued for the inspection of an existing electrical installation. A "Periodic Inspection Report" should be issued for such a periodic inspection.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Electrical safety
23

Form 2 Form No /2

ELECTRICAL INSTALLATION CERTIFICATE (notes 1 and 2)

(REQUIREMENTS FOR ELECTRICAL INSTALLATIONS - BS 7671 [IEE WIRING REGULATIONS])

DETAILS OF THE CLIENT (note 1) .....

.....

.....

INSTALLATION ADDRESS

.....

.....

.....Postcode .....

DESCRIPTION AND EXTENT OF THE INSTALLATION Tick boxes as appropriate (note 1)

Description of installation: .....

Extent of installation covered by this Certificate: .....

.....

.....

.....

.....

New installation ☐

Addition to an existing installation ☐

Alteration to an existing installation ☐

FOR DESIGN

I/We being the person(s) responsible for the design of the electrical installation (as indicated by my/our signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the design, hereby CERTIFY that the design work for which I/we have been responsible is to the best of my/our knowledge and belief in accordance with BS 7671 : ....., amended to ..... (date) except for the departures, if any, detailed as follows:

Details of departures from BS 7671 (Regulations 120-01-03, 120-02):

The extent of liability of the signatory or the signatories is limited to the work described above as the subject of this Certificate.

For the DESIGN of the installation: **(Where there is mutual responsibility for the design)

Signature: ..... Date ..... Name (BLOCK LETTERS): .....Designer No 1

Signature: ..... Date ..... Name (BLOCK LETTERS): .....Designer No 2**

FOR CONSTRUCTION

I/We being the person(s) responsible for the construction of the electrical installation (as indicated by my/our signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the construction, hereby CERTIFY that the construction work for which I/we have been responsible is to the best of my/our knowledge and belief in accordance with BS 7671 : ....., amended to ..... (date) except for the departures, if any, detailed as follows:

Details of departures from BS 7671 (Regulations 120-01-03, 120-02):

The extent of liability of the signatory is limited to the work described above as the subject of this Certificate.

For CONSTRUCTION of the installation:

Signature: ..... Date .....

Name (BLOCK LETTERS): ..... Constructor

FOR INSPECTION & TESTING

I/We being the person(s) responsible for the inspection & testing of the electrical installation (as indicated by my/our signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the inspection & testing, hereby CERTIFY that the work for which I/we have been responsible is to the best of my knowledge and belief in accordance with BS 7671 : ....., amended to ..... (date) except for the departures, if any, detailed as follows:

Details of departures from BS 7671 (Regulations 120-01-03, 120-02):

The extent of liability of the signatory is limited to the work described above as the subject of this Certificate.

For INSPECTION & TEST of the installation: **(Where there is mutual responsibility for the design)

Signature: ..... Date .....

Name (BLOCK LETTERS): ..... Inspector

NEXT INSPECTION (notes 4 and 7)

I/We the designer(s) recommend that this installation is further inspected and tested after an interval of not more than ..... years/months

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

PARTICULARS OF THE SIGNATORIES TO THE ELECTRICAL INSTALLATION CERTIFICATE (note 3)

Designer (No 1)
Name: ..... Company: .....
Address: .....
..... Postcode: ..... Tel No: .....

Designer (No 2) (if applicable)
Name: ..... Company: .....
Address: .....
..... Postcode: ..... Tel No: .....

Constructor
Name: ..... Company: .....
Address: .....
..... Postcode: ..... Tel No: .....

Inspector
Name: ..... Company: .....
Address: .....
..... Postcode: ..... Tel No: .....

SUPPLY CHARACTERISTICS AND EARTHING ARRANGEMENTS Tick boxes and enter details, as appropriate

Earthing arrangements	Number and Type of Live Conductors	Nature of Supply Parameters	Supply Protective Device Characteristics
TN-C ☐	a.c. ☐ d.c ☐	Nominal voltage, U/Uo(1) V	
TN-S ☐	1-phase, 2-wire ☐ 2-pole ☐	Nominal frequency, f (1) .....Hz	Type: .....
TN-C-S ☐	1-phase, 3-wire ☐ 3-pole ☐	Prospective fault current, Ipf (2) (note 6) .....kA	.....
TT ☐	2-phase, 3-wire ☐ other ☐	External loop impedance, Ze (2) .....Ω	
IT ☐	3-phase, 3-wire ☐	(Note: (1) by enquiry, (2) by enquiry or by measurement)	Nominal current rating
	3-phase, 4-wire ☐		.....A
Alternative source of supply (to be detailed on attached schedules) ☐			

PARTICULARS OF INSTALLATION REFERRED TO IN THE CERTIFICATE Tick boxes and enter details, as appropriate

Means of Earthing
Distributor's facility ☐
Installation earth electrode ☐

Maximum Demand
Maximum demand (load) .....Amps per phase

Details of Installation Earth Electrode (where applicable)

Type (e.g. rod(s), tape etc)	Location	Electrode resistance to earth
.....	.....	.....Ω

Main Protective Conductors

Earthing conductor:	material	csa .....mm²	connection verified ☐
Main equipotential bonding conductors	material	csa .....mm²	connection verified ☐

To incoming water and/or gas service ☐ To other elements .....

Main Switch or Circuit-breaker

BS, Type..... No. of poles ..... Current rating .....A Voltage rating V
Location ..... Fuse rating or setting .....A
Rated residual operating current $I_{\Delta n}$ = ... mA, and operating time of .....ms (at $I_{\Delta n}$)
(applicable only where an RCD is suitable and is used as a main circuit-breaker)

COMMENTS ON EXISTING INSTALLATION: (In the case of an alteration or additions see Section 743)
.....
.....
.....
.....

SCHEDULES (note 2)
The attached Schedules are part of this document and this Certificate is valid only when they are attached to it.
..... Schedules of Inspections and ..... Schedules of Test Results are attached. (Enter quantities of schedules attached)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

ELECTRICAL INSTALLATION CERTIFICATE
GUIDANCE FOR RECIPIENTS (to be appended to the Certificate)

This safety Certificate has been issued to confirm that the electrical installation work to which it relates has been designed, constructed and inspected and tested in accordance with British Standard 7671 (The IEE Wiring Regulations).

You should have received an original Certificate and the contractor should have retained a duplicate Certificate. If you were the person ordering the work, but not the user of the installation, you should pass this Certificate, or a full copy of it including the schedules, immediately to the user.

The "original" Certificate should be retained in a safe place and be shown to any person inspecting or undertaking further work on the electrical installation in the future. If you later vacate the property, this Certificate will demonstrate to the new owner that the electrical installation complied with the requirements of British Standard 7671 at the time the Certificate was issued. The Construction (Design and Management) Regulations require that for a project covered by those Regulations, a copy of this Certificate, together with schedules is included in the project health and safety documentation.

For safety reasons, the electrical installation will need to be inspected at appropriate intervals by a competent person. The maximum time interval recommended before the next inspection is stated on Page 1 under "Next Inspection".

This Certificate is intended to be issued only for a new electrical installation or for new work associated with an alteration or addition to an existing installation. It should not have been issued for the inspection of an existing electrical installation. A "Periodic Inspection Report" should be issued for such a periodic inspection.

The Certificate is only valid if a Schedule of Inspections and Schedule of Test Result are appended.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Form 3 Form No /3

SCHEDULE OF INSPECTIONS

Methods of protection against electric shock

(a) Protection against both direct and indirect contact:

☐ (i) SELV (note 1)

☐ (ii) Limitation of discharge of energy

(b) Protection against direct contact: (note 2)

☐ (i) Insulation of live parts

☐ (ii) Barriers or enclosures

☐ (iii) Obstacles (note 3)

☐ (iv) Placing out of reach (note 4)

☐ (v) PELV

☐ (vi) Presence of RCD for supplementary protection

(c) Protection against indirect contact:

(i) EEBADS including:

☐ Presence of earthing conductor

☐ Presence of circuit protective conductors

☐ Presence of main equipotential bonding conductors

☐ Presence of supplementary equipotential bonding conductors

☐ Presence of earthing arrangements for combined protective and functional purposes

☐ Presence of adequate arrangements for alternative source(s), where applicable

☐ Presence of residual current device(s)

☐ (ii) Use of Class II equipment or equivalent insulation (note 5)

☐ (iii) Non-conducting location: (note 6)
Absence of protective conductors

☐ (iv) Earth-free equipotential bonding: (note 7)
Presence of earth-free equipotential bonding conductors

☐ (v) Electrical separation (note 8)

Prevention of mutual detrimental influence

☐ (a) Proximity of non-electrical services and other influences

☐ (b) Segregation of band I and band II circuits or band II insulation used

☐ (c) Segregation of safety circuits

Identification

☐ (a) Presence of diagrams, instructions, circuit charts and similar information

☐ (b) Presence of danger notices and other warning notices

☐ (c) Labelling of protective devices, switches and terminals

☐ (d) Identification of conductors

Cables and conductors

☐ (a) Routing of cables in prescribed zones or within mechanical protection

☐ (b) Connection of conductors

☐ (c) Erection methods

☐ (d) Selection of conductors for current-carrying capacity and voltage drop

☐ (e) Presence of fire barriers, suitable seals and protection against thermal effects

General

☐ (a) Presence and correct location of appropriate devices for isolation and switching

☐ (b) Adequacy of access to switchgear and other equipment

☐ (c) Particular protective measures for special installations and locations

☐ (d) Connection of single-pole devices for protection or switching in phase conductors only

☐ (e) Correct connection of accessories and equipment

☐ (f) Presence of undervoltage protective devices

☐ (g) Choice and setting of protective and monitoring devices for protection against indirect contact and/or overcurrent

☐ (h) Selection of equipment and protective measures appropriate to external influences

☐ (i) Selection of appropriate functional switching devices

Inspected by ..... Date .....

Notes:

T to indicate an inspection has been carried out and the result is satisfactory
C to indicate an inspection has been carried out and the result was unsatisfactory
N/A to indicate the inspection is not applicable
LIM to indicate that, exceptionally, a limitation agreed with the person ordering the work prevented the inspection or test being carried out

1. SELV An extra-low voltage system which is electrically separated from Earth and from other systems. The particular requirements of the Regulations must be checked (see Regulations 411-02 and 471-02)
2. Method of protection against direct contact - will include measurement of distances where appropriate
3. Obstacles - only adopted in special circumstances (see Regulations 412-04 and 471-06)
4. Placing out of reach - only adopted in special circumstances (see Regulations 412-05 and 471-07)
5. Use of Class II equipment - infrequently adopted and only when the installation is to be supervised (see Regulations 413-03 and 471-09)
6. Non-conducting locations - not applicable in domestic premises and requiring special precautions (see Regulations 413-04 and 471-10)
7. Earth-free local equipotential bonding - not applicable in domestic premises, only used in special circumstances (see Regulations 413-05 and 471-11)
8. Electrical separation (see Regulations 413-06 and 471-12)

Click Here for more general construction tips: http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/ Electrical safety 27

SCHEDULE OF TEST RESULTS

Contractor:..... Address/Location of distribution board:

Test Date: .... * Type of Supply: TN-S/TN-C-S/TT

..... * Ze at origin: .....ohms

Signature .... * PFC: .....kA

Instruments

loop impedance: .....

continuity: .....

insulation: .....

RCD tester: .....

Method of protection against indirect contact: .....

Equipment vulnerable to testing: .....

Description of Work: .....

Circuit Description	Overcurrent Device		Wiring Conductors		Test Results									
	*Short-circuit capacity: .....kA				Continuity			Insulation Resistance		Polarity	Earth Loop Impedance	Functional Testing		Remarks
	type	Rating I_n	live	cpc	$(R_1 + R_2)$*	R_2*	Ring	Live/ Live	Live/ Earth		Zs	RCD time	Other	
		A	mm^2	mm^2	Ω	Ω		MΩ	MΩ		Ω	ms		
1	2	3	4	5	*6	*7	*8	*9	*10	*11	*12	*13	*14	15

Deviations from Wiring Regulations and special notes:

* See notes on schedule of test results

COPIES OF BS 7671 AND IEE MODEL FORMS

Approved Document P
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

NOTES ON SCHEDULE OF TEST RESULTS

* **Type of supply** is ascertained from the supply company or by inspection.

* **Ze at origin.** When the maximum value declared by the electricity supplier is used, the effectiveness of the earth must be confirmed by a test. If measured the main bonding will need to be disconnected for the duration of the test.

* **Short-circuit capacity** of the device is noted, see Table 7.2A of the On-Site Guide or 2.7.15 of GN3

* **Prospective fault current (PFC).** The value recorded is the greater of either the short-circuit current or the earth fault current. Preferably determined by enquiry of the supplier.

The following tests, where relevant, shall be carried out in the following sequence:

Continuity of protective conductors, including main and supplementary bonding
Every protective conductor, including main and supplementary bonding conductors, should be tested to verify that it is continuous and correctly connected.

***6 Continuity**

Where Test Method 1 is used, enter the measured resistance of the phase conductor plus the circuit protective conductor (R1+ R2).

See 10.3.1 of the On-Site Guide or 2.7.5 of GN3.

During the continuity testing (Test Method 1) the following polarity checks are to be carried out:

(a) every fuse and single-pole control and protective device is connected in the phase conductor only

(b) centre-contact bayonet and Edison screw lampholders have outer contact connected to the neutral conductor

(c) wiring is correctly connected to socket-outlets and similar accessories.

Compliance is to be indicated by a tick in polarity column 11.

(R1 + R2) need not be recorded if R2 is recorded in column 7.

***7** Where Test Method 2 is used, the maximum value of R2 is recorded in column 7.

Where the alternative method of Regulation 413-02-12 is used for shock protection, the resistance of the circuit protective conductor R2 is measured and recorded in column 7.

See 10.3.1 of the On-Site Guide or 2.7.5 of GN3.

***8 Continuity of ring final circuit conductors**

A test shall be made to verify the continuity of each conductor including the protective conductor of every ring final circuit.

See 10.3.2 of the On-Site Guide or 2.7.6 of GN3.

***9, *10 Insulation Resistance**

All voltage sensitive devices to be disconnected or test between live conductors (phase and neutral) connected together and earth.

The insulation resistance between live conductors is to be inserted in column 9.

The minimum insulation resistance values are given in Table 10.1 of the On-Site Guide or Table 2.2 of GN3.

See 10.3.3(iv) of the On-Site Guide or 2.7.7 of GN3.

All the preceding tests should be carried out before the installation is energised.

***11 Polarity**

A satisfactory polarity test may be indicated by a tick in column 11.

Only in a Schedule of Test Results associated with a Periodic Inspection Report is it acceptable to record incorrect polarity.

Click Here for more general construction tips: Electrical safety
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

***12 Earth fault loop impedance Zs**

This may be determined either by direct measurement at the furthest point of a live circuit or by adding (R1 + R2) of column 6 to Ze. Ze is determined by measurement at the origin of the installation or preferably the value declared by the supply company used.

Zs = Ze + (R1 + R2). Zs should be less than the values given in Appendix 2 of the On-Site Guide or App 2 of GN3.

***13 Functional testing**

The operation of RCDs (including RCBOs) shall be tested by simulating a fault condition, independent of any test facility in the device.

Record operating time in column 13. Effectiveness of the test button must be confirmed.

See Section 11 of the On-Site Guide or 2.7.16 of GN3.

***14** All switchgear and controlgear assemblies, drives, control and interlocks, etc must be operated to ensure that they are properly mounted, adjusted and installed.

Satisfactory operation is indicated by a tick in column 14.

Earth electrode resistance

The earth electrode resistance of TT installations must be measured, and normally an RCD is required.

For reliability in service the resistance of any earth electrode should be below 200 Ω. Record the value on Form 1, 2 or 6, as appropriate.

See 10.3.5 of the On-Site Guide or 2.7.13 of GN3.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

NOTES ON COMPLETION OF MINOR ELECTRICAL INSTALLATION WORKS CERTIFICATE

Scope

The Minor Works Certificate is intended to be used for additions and alterations to an installation that do not extend to the provision of a new circuit. Examples include the addition of a socket-outlet or a lighting point to an existing circuit, the relocation of a light switch etc. This Certificate may also be used for the replacement of equipment such as accessories or luminaires, but not for the replacement of distribution boards or similar items. Appropriate inspection and testing, however, should always be carried out irrespective of the extent of the work undertaken.

Part 1 Description of minor works

1,2 The minor works must be so described that the work that is the subject of the certification can be readily identified.

4 See Regulations 120-01-03 and 120-02. No departures are to be expected except in most unusual circumstances. See also Regulation 743-01-01.

Part 2 Installation details

2 The method of protection against indirect contact shock must be clearly identified, e.g. earthed equipotential bonding and automatic disconnection of supply using fuse/circuit-breaker/RCD.

4 If the existing installation lacks either an effective means of earthing or adequate main equipotential bonding conductors, this must be clearly stated. See Regulation 743-01-02.

Recorded departures from BS 7671 may constitute non-compliance with the Electricity Supply Regulations 1988 as amended or the Electricity at Work Regulations 1989. It is important that the client is advised immediately in writing.

Part 3 Essential tests

The relevant provisions of Part 7 (Inspection and Testing) of BS 7671 must be applied in full to all minor works. For example, where a socket-outlet is added to an existing circuit it is necessary to:

1 establish that the earthing contact of the socket-outlet is connected to the main earthing terminal

2 measure the insulation resistance of the circuit that has been added to, and establish that it complies with Table 71A of BS 7671

3 measure the earth fault loop impedance to establish that the maximum permitted disconnection time is not exceeded

4 check that the polarity of the socket-outlet is correct

5 (if the work is protected by an RCD) verify the effectiveness of the RCD.

Part 4 Declaration

1,3 The Certificate shall be made out and signed by a competent person in respect of the design, construction, inspection and testing of the work.

1,3 The competent person will have a sound knowledge and experience relevant to the nature of the work undertaken and to the technical standards set down in BS 7671, be fully versed in the inspection and testing procedures contained in the Regulations and employ adequate testing equipment.

2 When making out and signing a form on behalf of a company or other business entity, individuals shall state for whom they are acting.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Electrical safety
31

Form 5

MINOR ELECTRICAL INSTALLATION WORKS CERTIFICATE

(REQUIREMENTS FOR ELECTRICAL INSTALLATIONS - BS 7671 [IEE WIRING REGULATIONS])

To be used only for minor electrical work which does not include the provision of a new circuit

PART 1 : Description of minor works

1. Description of the minor works : .....
2. Location/Address :.....
3. Date minor works completed : .....
4. Details of departures, if any, from BS 7671

.....

.....

.....

PART 2 : Installation details

1. System earthing arrangement: TN-C-S ☐ TN-S ☐ TT ☐
2. Method of protection against indirect contact: .....
3. Protective device for the modified circuit: Type BS ..... Rating .....A
4. Comments on existing installation, including adequacy of earthing and bonding arrangements: (see Regulation 130-07) .....

.....

.....

.....

PART 3 : Essential Tests

1. Earth continuity : satisfactory ☐
2. Insulation resistance:

   Phase/neutral .....MΩ

   Phase/earth .....MΩ

   Neutral/earth .....MΩ
3. Earth fault loop impedance .....Ω
4. Polarity : satisfactory ☐
5. RCD operation (if applicable): Rated residual operating current $I_{\Delta n}$ .....mA and operating time of .....ms (at $I_{\Delta n}$)

PART 4 : Declaration

1. I/We CERTIFY that the said works do not impair the safety of the existing installation, that the said works have been designed, constructed, inspected and tested in accordance with BS 7671 : ..... (IEE Wiring Regulations), amended to ..... and that the said works, to the best of my/our knowledge and belief, at the time of my/our inspection, complied with BS 7671 except as detailed in Part 1.

2. Name: .....

   For and on behalf of: .....

   Address: .....

   .....

   .....

   .....Postcode .....

3. Signature: .....

   Position: .....

   Date: .....

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

MINOR ELECTRICAL INSTALLATION WORKS CERTIFICATE GUIDANCE FOR RECIPIENTS (to be appended to the Certificate)

This Certificate has been issued to confirm that the electrical installation work to which it relates has been designed, constructed and inspected and tested in accordance with British Standard 7671 (The IEE Wiring Regulations).

You should have received an original Certificate and the contractor should have retained a duplicate. If you were the person ordering the work, but not the owner of the installation, you should pass this Certificate, or a copy of it, to the owner.

A separate Certificate should have been received for each existing circuit on which minor works have been carried out. This Certificate is not appropriate if you requested the contractor to undertake more extensive installation work, for which you should have received an Electrical Installation Certificate.

The Certificate should be retained in a safe place and be shown to any person inspecting or undertaking further work on the electrical installation in the future. If you later vacate the property, this Certificate will demonstrate to the new owner that the minor electrical installation work carried out complied with the requirements of British Standard 7671 at the time the Certificate was issued.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Electrical safety
33

Appendix C: Older practice that can be encountered in alteration work

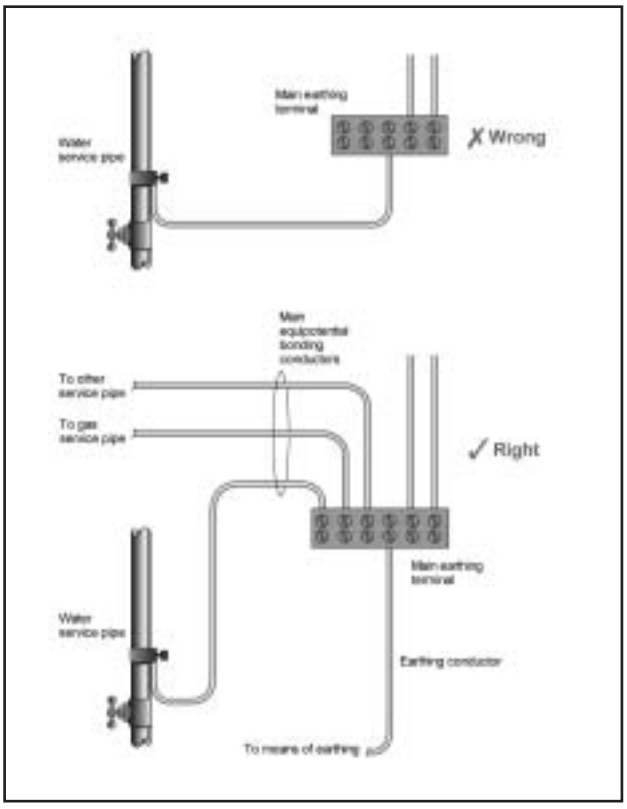
When carrying out work on existing, older installations, some features will be encountered which differ from those found in modern installations.

Electrical installations began to be commonplace in domestic dwellings as early as the 1920s, and over the years there have been considerable changes to the types of wiring materials and other equipment being installed, and in the ways that electrical installations are structured. From the electrical safety point of view, these changes have had two main causes: advances in technology, and amendments to the Wiring Regulations published by the Institution of Electrical Engineers (issued as British Standard BS 7671 since 1992).

This appendix presents examples of the types of features just mentioned, which may be unfamiliar to those who find them and may be a safety hazard. Also included, where applicable, are comments about changes in the Wiring Regulations relevant to the equipment concerned.

Use of a gas, water or other service pipe as an earth

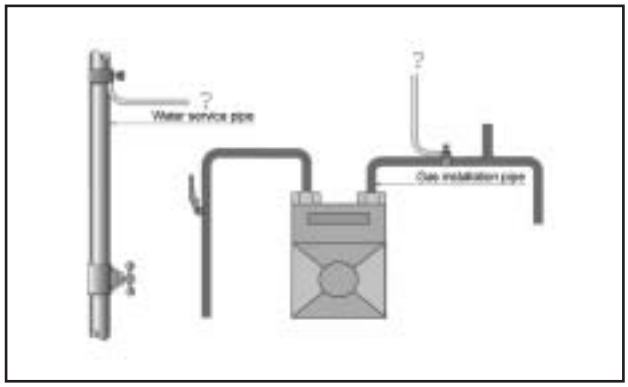
(No proper means of earthing for the electrical installation)



It is not permitted to use a gas, water or other metal service pipe as a means of earthing for an electrical installation. (This does not preclude equipotential bonding connections to these pipes.) It never has been permitted for gas pipes, and has not been permitted for other service pipes since 1966.

Every electrical installation requires a proper means of earthing. The most usual type is an electricity distributor's earthing terminal, provided for this purpose near the electricity meter.

Absence of, or inadequately sized, main equipotential bonding conductors



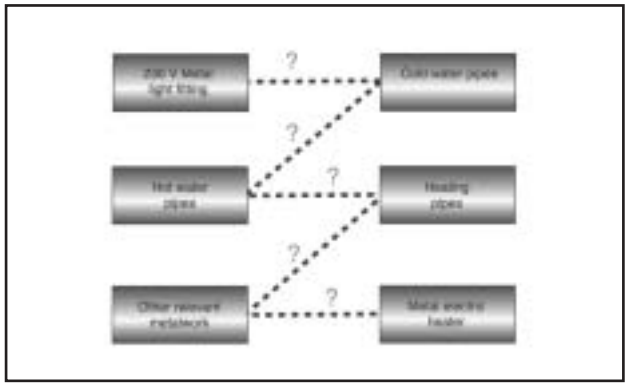
Prior to 1966 the Wiring Regulations contained no requirements for main equipotential bonding.

Since then, the installation of main equipotential bonding conductors has been required to water service pipes, gas installation pipes, oil supply pipes, and certain other 'earthy' metalwork that may be present on the premises.

During the 1980s new Regulations were introduced, requiring the minimum size of main equipotential bonding conductors to be larger than previously called for, particularly where there is a PME (protective multiple earthing) electricity supply. For most dwellings the minimum size now permitted to be installed is 10 mm^2.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Absence of, or inadequately sized, supplementary equipotential bonding

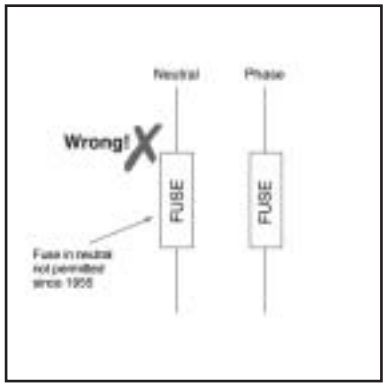


Prior to 1981 there were virtually no requirements in the Wiring Regulations for supplementary equipotential bonding conductors.

Since then, the installation of supplementary equipotential bonding conductors has been required in installations and locations of increased electric shock risk, such as bathrooms and shower rooms.

During the 1980s and 1990s the requirements for the sizing of supplementary equipotential bonding conductors were amended. For most dwellings the minimum size now permitted to be installed without mechanical protection is 4 mm^2.

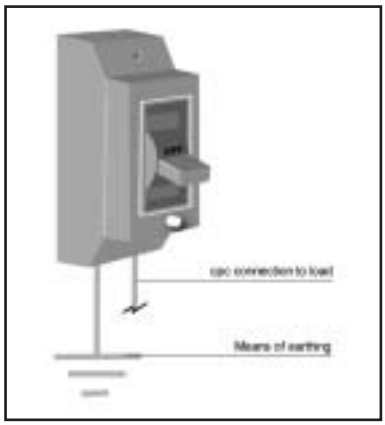
Double-pole fusing



In many installations put in up to the 1950s, the circuits have a fuse in the neutral conductor as well as in the phase conductor. This is a potentially dangerous practice for ac installations, and ceased to be permitted by the Wiring Regulations in about 1955.

In the event of a short-circuit, there is a 50% chance that the fuse in the neutral conductor will operate. When this happens, the phase conductor is not automatically disconnected from the faulty circuit as would now normally be expected, thereby leaving a danger for the unwary.

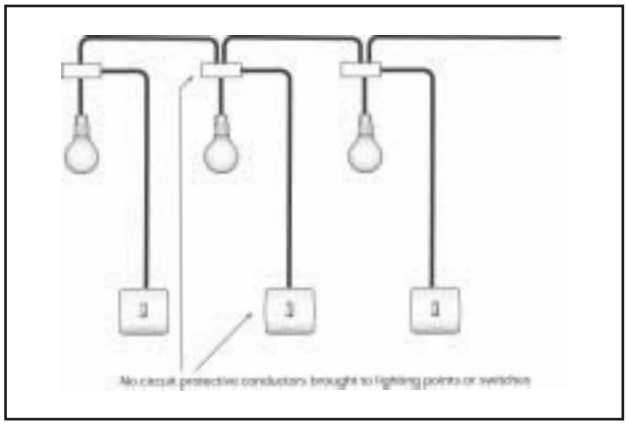
Voltage-operated earth-leakage circuit-breakers



Two basic types of earth-leakage circuit-breaker used to be recognised by the Wiring Regulations: the current-operated type and the voltage-operated type. Today, only the current-operated type is recognised (now called residual current devices or RCDs).

The voltage-operated type ceased to be recognised in 1981. It can be distinguished by its two separate earthing terminals – one for an earthing connection to the load and one for an earthing connection to a means of earthing (often a driven rod). The major drawback with this type of device is that a parallel earth path can render it disabled.

No circuit protective conductors in lighting circuits

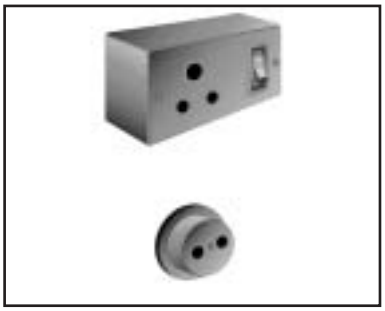


Lighting circuits installed before 1966, and not including any metalwork needing to be earthed, often do not include a circuit protective conductor. Consequently, any new or replacement light fittings, switches or other components must be of a type not requiring earthing, eg non-metallic varieties, unless new circuit protective (earthing) conductors are provided. Otherwise, there will be a potential danger of indirect contact (electric shock).

All lighting circuits installed since 1966 (with the exception of certain extra-low voltage circuits) have been required to include a circuit protective conductor.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Non-13 A socket-outlets



The installation of socket-outlets other than the current standard 13 A square-pinned type was common prior to the early 1950s. These outlets accept non-fused plugs (some with an earth pin and some without), generally having round pins.

These older types of socket-outlet designed for non-fused plugs must not be connected to a ring circuit. Such an arrangement can be dangerous.

In addition, socket-outlets that will accept unearthed (2-pin) plugs must not be used to supply equipment needing to be earthed. It is strongly recommended that such outlets be taken out of service.

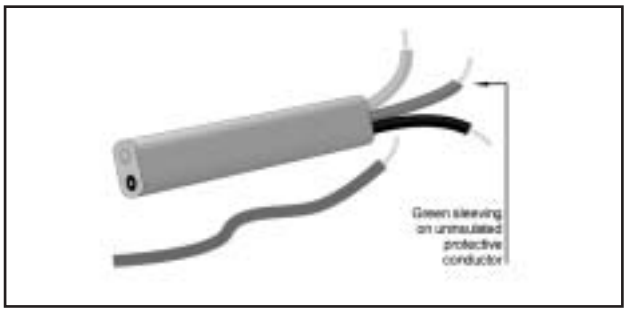
No RCD protection for socket-outlets likely to supply portable equipment outdoors

(or an insufficient number of such socket-outlets so protected)

A person receiving an electric shock when using portable electrical equipment outdoors can be at great risk of death or serious injury. The risk is significantly reduced if the socket-outlet supplying the equipment is provided with sensitive RCD protection (fitted either at the socket-outlet itself or at the consumer unit). However, prior to 1981 the Wiring Regulations did not require such protection.

Nowadays, sensitive RCD protection[1] is required for all socket-outlets which are installed having a rating of 32 A or less, and which may reasonably be expected to supply portable equipment for use outdoors. The initial requirement, in 1981, was for this protection to be provided to at least one such socket-outlet. However, this was found to be inadequate.

Green coloured protective conductors or sleeving instead of green-yellow

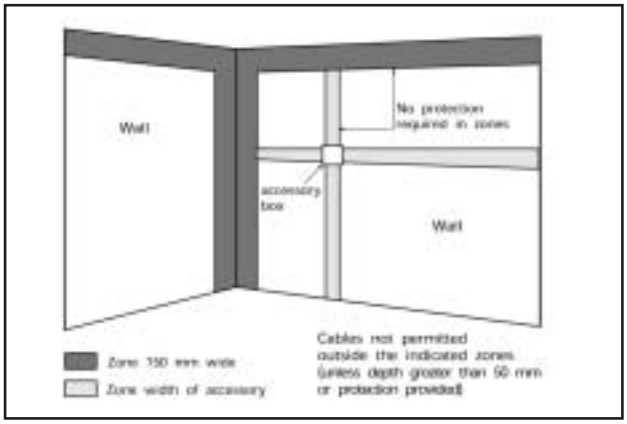


The Wiring Regulations used to accept the single colour green for the identification of protective conductors.

However, since 1977 a green-yellow coding has been required for all protective conductors installed.

The older green sleeving or tape should be replaced with the new green-yellow striped variety whenever connections are re-made.

Concealed cables outside of permitted zones in walls



Until the latter part of the 1980s the Wiring Regulations did not contain any specific requirements for the positioning of cables concealed in walls and partitions.

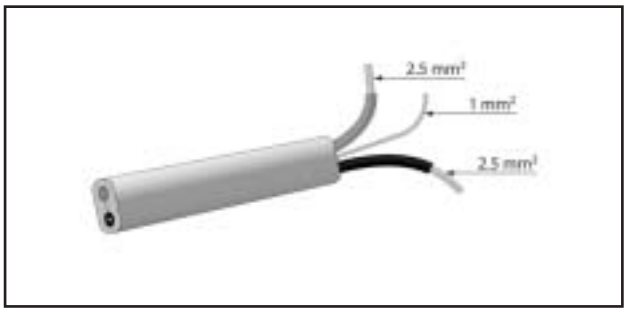
Today's requirements are given in Regulation 522-06-06 in BS 7671, and are illustrated here.

To avoid striking a cable, extreme care should always be taken in any activity that involves penetrating a wall or partition, even when it is known that any concealed cables were installed in recent years. Where the cables were installed prior to 1980 they are particularly likely to be found outside of the zones illustrated opposite. A cable and stud detector should always be used before attempting to drill into walls, floors or ceilings.

[1] The RCD should have a rated residual operating current of not more than 30 mA

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

2.5 mm² twin-and-earth cables incorporating circuit protective conductor of only 1.0 mm²



For some years, 2.5 mm² twin & earth pvc/pvc cables to BS 6004 were manufactured with a circuit protective conductor (cpc) of only 1 mm², rather than 1.5 mm² as is incorporated today.

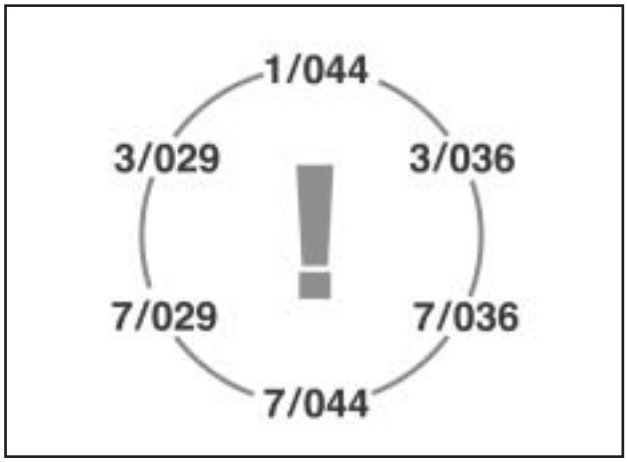
The size of the cpc was increased to 1.5 mm² in BS 6004 because in certain circumstances the 1 mm² cpc may not always be properly protected against thermal effects in the event of an earth fault. This is where the cable is used in a ring final circuit protected by a 30 A semi-enclosed (rewirable) fuse. If this is the case, a competent electrician should be consulted about upgrading the cables and/or the consumer unit.

Accessories on wooden mounting blocks

It was commonplace up to the mid 1960s for accessories such as socket-outlets, lighting switches and ceiling roses to be fixed to wooden mounting blocks.

The design of the accessories is often such that the wooden block is used to form part of the enclosure for the unsheathed cores and terminations of cables connecting to the accessory. However, depending on the particular characteristics of the material from which the block is made, it may not satisfy the ignitability requirements of the current Wiring Regulations (BS 7671) for such use.

Cables of imperial (non-metric) sizes



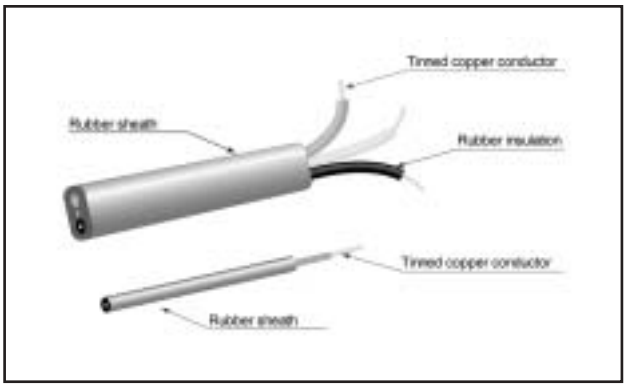
Up until the beginning of the 1970s, cables could still be purchased having imperial, rather than metric, sized conductors. Many such cables are still to be found in older installations.

Their conductors may be single-stranded (as in 1/.044) or may have three, seven or more strands (as in 3/.029, 7/.029 and 19/.044). To the inexperienced eye these cables may be difficult to recognise, other than perhaps by comparison of their conductors with those of metric cables. The important thing to appreciate, however, is that their current carrying capacity and voltage drop characteristics are likely to be different from those which may at first be expected. It would therefore be prudent to engage a competent electrician to establish whether the performance limits are being exceeded, or would be if a new appliance with a higher rating (eg washing machine, dishwasher, towel rail, appliances rated at more than 2 kW) were to be connected.

Finally, it should be noted that copper conductors of imperial cables may be of the tinned type, giving them an unfamiliar colour.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Tough rubber sheathed (TRS), vulcanised rubber insulation (VRI) cables

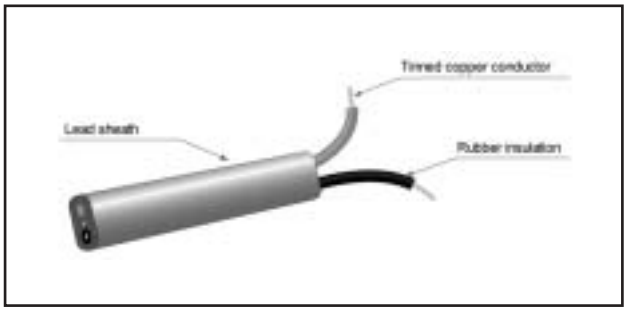


Prior to the use of pvc insulated cables becoming common in the 1960s, most cables installed in domestic dwellings were of the rubber insulated, tough-rubber sheathed (TRS) type. These are easily recognizable by their black exterior.

The extent to which the insulation and sheath deteriorate in service depends very much on whether the cable has been subjected to overloading and/or excessive temperature, or the rubber has been exposed to direct sunlight. Deterioration results in a loss of insulating properties, with the rubber becoming dry and inflexible – perhaps with a tendency to crumble.

Such wiring installations should be tested by a competent person at the earliest opportunity, but otherwise left undisturbed until replacement, as they are beyond their normally expected safe working life.

Lead-sheathed cables



Lead sheathed cables may be found in some installations dating from before about 1948. These have rubber insulated, tinned copper conductors and an outer sheath of lead.

For reasons of protection against indirect contact (electric shock) it is essential that the lead sheath of every such cable is, and will remain, properly earthed.

The conductor insulation, being made of rubber, is prone to deterioration as described above for TRS cables.

Again, such wiring installations should be tested by a competent person at the earliest opportunity as they are beyond their normally expected safe working life.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Appendix D: New harmonised cable identification colours

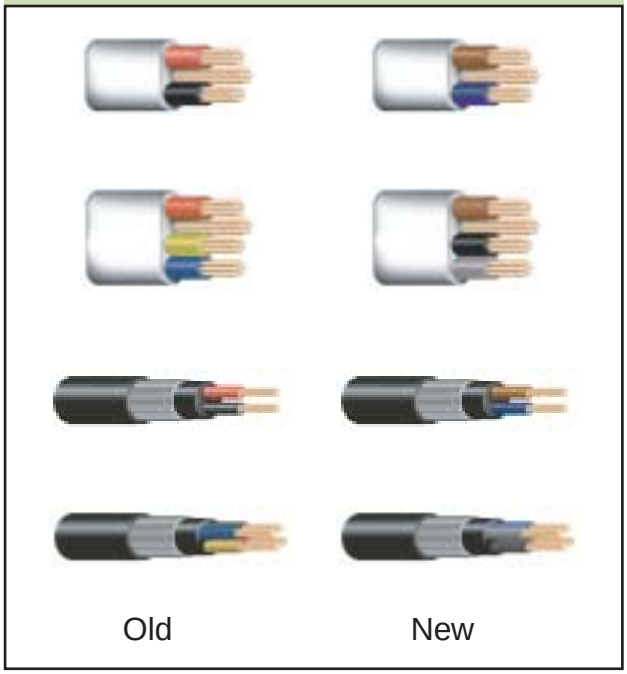
Amendment No 2 to BS 7671: 2001 published on 31 March 2004 specifies new (harmonised) cable core colours for all new fixed wiring in electrical installations in the UK. It includes guidance for alterations and additions to installations wired in the old cable colours.

Table D1 below gives the new cable core colours for ac power circuits. Figure D1 shows examples of flat and armoured single phase and 3-phase ac power cables with the old and the new harmonised colours.

Table D1: **Identification of conductors in ac power and lighting circuits**

Conductor	Colour
Protective conductor	Green-and-yellow
Neutral	Blue
Phase of single phase circuit	Brown
Phase 1 of 3-phase circuit	Brown
Phase 2 of 3-phase circuit	Black
Phase 3 of 3-phase circuit	Grey

Figure D1: **Examples of cables with old and new colours**



The new (harmonised) colour cables may be used on site from 31 March 2004. New installations or alterations to existing installations may use either new or old colours, but not both, from 31 March 2004 until 31 March 2006. Only the new colours may be used after 31 March 2006.

For single phase installations in domestic premises, the new colours are the same as those for flexible cables to appliances, namely green-and-yellow, blue and brown for the protective, neutral and phase conductors respectively.

Further information, including cable identification colours for extra-low voltage and dc power circuits, is available from the following sources:

New wiring colours. Leaflet published by the IEE, 2004. Available for downloading from the IEE website at www.iee.org/cablecolours.

ECA comprehensive guide to harmonised cable colours, BS 7671: 2001 Amendment No 2. Electrical Contractors' Association, March 2004.

New fixed wiring colours - A practical guide. National Inspection Council for Electrical installation Contracting (NICEIC), Spring 2004.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/
Electrical safety
39

Standards referred to

BS 7671: 2001 (incorporating Amendments No1: 2002 and No 2: 2004). *Requirements for Electrical Installations (IEE Wiring Regulations 16th Edition).* The Institution of Electrical Engineers. ISBN 0-86341-373-0, 2004

Other publications referred to

IEE On-Site Guide (BS 7671, 16th Edition Wiring Regulations). The Institution of Electrical Engineers. ISBN 0-85296-987-2, 2002

IEE Guidance Note 1: Selection and erection of equipment. 4th Edition. The Institution of Electrical Engineers. ISBN 0-85296-989-9, 2002

IEE Guidance Note 2: Isolation and switching: 4th Edition. The Institution of Electrical Engineers. ISBN 0-85296-990-2, 2002

IEE Guidance Note 3: Inspection and testing. 4th Edition. The Institution of Electrical Engineers. ISBN 0-85296-991-0, 2002

IEE Guidance Note 4: Protection against fire. 4th Edition. The Institution of Electrical Engineers. ISBN 0-85296-992-9, 2003

IEE Guidance Note 5: Protection against electric shock. 4th Edition. The Institution of Electrical Engineers. ISBN 0-85296-993-7, 2002

IEE Guidance Note 6: Protection against overcurrent. 4th Edition. The Institution of Electrical Engineers. ISBN 0-85296-994-5, 2003

IEE Guidance Note 7: Special locations. 2nd Edition (incorporating the 1st and 2nd amendments). The Institution of Electrical Engineers. ISBN 0-85296-995-3, 2003

New wiring colours. Leaflet published by the IEE, 2004. Available for downloading from the IEE website at www.iee.org/cablecolours

ECA comprehensive guide to harmonised cable colours, BS 7671: 2001 Amendment No 2. Electrical Contractors' Association, March 2004

New fixed wiring colours - A practical guide. National Inspection Council for Electrical installation Contracting (NICEIC), Spring 2004

The Building Regs but not Part P. Article published by the IEE, Spring 2004. Available for downloading from the IEE website at http://www.iee.org/Publish/WireRegs/IEE_Building_Regs.pdf

Electrical Installers' Guide to the Building Regulations. NICEIC and ECA, August 2004. Available from www.niceic.org.uk and www.eca.co.uk

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Approved Documents

The following documents have been approved and issued by the Secretary of State for the purpose of providing practical guidance with respect to the requirements of the Building Regulations 2000 (as amended)

Approved Document A - Structure: 1992 Edition, fourth impression (with amendments) 1994, further amended 2000

Approved Document B - Fire safety: 2000 Edition, amended 2000 and 2002

Approved Document C - Site preparation and resistance to moisture: 1992 Edition, second impression (with amendments) 1992, further amended 2000

Approved Document D - Toxic substances: 1985 Edition, amended 1992, further amended 2000

Approved Document E - Resistance to the passage of sound: 2003 Edition

Approved Document F - Ventilation: 1995 Edition, amended 2000

Approved Document G - Hygiene: 1992 Edition, second impression (with amendments) 1992, further amended 2000

Approved Document H - Drainage and waste disposal: 2002 Edition

Approved Document J - Combustion appliances and fuel storage systems: 2002 Edition

Approved Document K - Protection from falling, collision and impact: 1998 Edition, amended 2000

Approved Document L1 - Conservation of fuel and power in dwellings: 2002 Edition

Approved Document L2 - Conservation of fuel and power in buildings other than dwellings: 2002 Edition

Approved Document M - Access and facilities for disabled people: 2004 Edition

Approved Document N - Glazing - safety in relation to impact, opening and cleaning: 1998 Edition, amended 2000

Approved Document P - Electrical safety: 2004 Edition

Approved Document to support regulation 7 - materials and workmanship: 1999 Edition, amended 2000

Printed in the United Kingdom for The Stationery Office
169827 C200 07/04

Click Here for more general construction tips: Electrical safety
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Published by TSO (The Stationery Office) and available from:

Online
www.tso.co.uk/bookshop

Mail, Telephone, Fax & E-mail
TSO
PO Box 29, Norwich NR3 1GN
Telephone orders/General enquiries: 0870 600 5522
Fax orders: 0870 600 5533
E-mail: book.orders@tso.co.uk
Textphone: 0870 240 3701

TSO Shops
123 Kingsway, London WC2B 6PQ
020 7242 6393 Fax 020 7242 6394
68–69 Bull Street, Birmingham B4 6AD
0121 236 9696 Fax 0121 236 9699
9–21 Princess Street, Manchester M60 8AS
0161 834 7201 Fax 0161 833 0634
16 Arthur Street, Belfast BT1 4GD
028 9023 8451 Fax 028 9023 5401
18–19, High Street, Cardiff CF10 1PT
029 2039 5548 Fax 029 2038 4347
71 Lothian Road, Edinburgh EH3 9AZ
0870 606 5566 Fax 0870 606 5588

TSO Accredited Agents
(see Yellow Pages)

and through good booksellers

© Crown Copyright 2004.

Copyright in the typographical arrangement and design rests with the Crown.

Published for the Office of the Deputy Prime Minister, under licence from the Controller of Her Majesty's Stationery Office.

This publication, excluding logos, may be reproduced free of charge in any format or medium for research, private study or for internal circulation within an organisation. This is subject to it being reproduced accurately and not used in a misleading context. The material must be acknowledged as Crown copyright and the title of the publication specified.

For any other use of this material please write to The HMSO Licensing Division, HMSO, St Clements House, 2–16 Colegate, Norwich NR3 1BQ. Fax: 01603 723000 or email: licensing@cabinet-office.x.gsi.gov.uk

£15

ISBN 0-11-753917-1

9 780117 539174 >

www.tso.co.uk

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

HammerZone.com Better Living Through Handymanlyness

Garage Remodel:

Building Traditional Casing For New Windows

In This Article:	Related Articles:
• Case 1: Vinyl Window, New Sill • Case 2: Aluminum Window, Old Sill • Caulking • Notes On Using Treated Yellow Pine • Tools and Materials	• Index of Siding and Exterior Trim Articles • Index of Window Articles •
Skill Level: 3	**Time Taken:** 2 Hours Per Window

By Bruce W. Maki, Editor

Introduction:

In our garage makeover project we had to replace 3 windows. We wanted to re-create the window trim so it would look like the original, or at least look like the other old garages and houses in the neighborhood.

The Vinyl Window:

One of the windows I installed was a 24" x 36" vinyl new construction window (about $70 at Home Depot). While this double-pane single-hung window is sort of *overkill* for a garage, there really are not many options available for plain old-fashioned garage windows.	

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The window installation was basic:

- Prepare the rough opening, allowing for a 1/4" gap all around. Lay two shims on the sill.
- Apply some caulk to the back side of the window flange.
- Set the window in the opening.
- Drive one 2" roofing nail at the top right corner.
- Adjust the window position so it was level across the top.
- Drive another nail at the top left corner
- Measure the diagonals to make sure the window was square.
- Drive nails in the bottom, side and top flanges to secure the window.
- Smooth out any excess caulk that oozed out from behind the flange.

Carpentry On The Cheatin' Side Of Town:

I drove some deck screws into the siding, but I left the heads sticking out about 1/8" (red arrows). This is the **same thickness as the flange** on the vinyl window.

These screw heads will act as a **standoff**, to hold the casing away from the wall and prevent the casing from resting on an angle.

More screw heads at the top.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

I made a **window sill** from treated pine. This was simply a piece of knot-free 2x4 that I ripped at a 10 degree angle on my table saw.

I installed the sill with the angled surface against the wall, so the entire piece sloped downward slightly. This will help shed water.

Note that the sill extends over 4 inches beyond the sides of the window, to accommodate the side casing.

Of course, this sill is a fake. In the old days the sill would extend back under the sash (the movable part of the window).

The window with the faker-sill attached at the bottom.

I installed 1x4 treated pine on the sides. The lower edge of this piece was cut at the same 10 degree angle, so it mated with the sloped sill.

I just nailed these boards with a 2-inch pneumatic finish nailer. Later I added some 2½" stainless steel ring-shank siding nails, which hold extremely well.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The side casing extends to the top of the vinyl frame. Sometimes the best way to cut a board like this is to make the angled cut for the bottom end, set the board in place, and mark the top cut where the board meets the top of the vinyl. After both side pieces of casing were installed, I installed the top casing, also 1x4 treated pine.	

Note how there is primer behind the casing. Prior to installing these boards I scraped off the old paint in the scalloped grooves, sanded the wood clean, and applied primer. This is just a precaution in case water gets behind the trim someday. Primed wood is less able to absorb water.

Also, you can see some streaks of primer near the edges of these trim boards. I primed the backs and sides of these boards prior to cutting. This is another technique I employ to reduce the chances of water getting into the wood if the caulking fails someday. I know from experience (and from reading) that moisture going into and out of the wood is a major cause of paint failure. Sealing all sides of the wood (even pressure treated wood) helps reduce moisture absorption. I now this sounds **wacko**, but the extra time involved is trivial.

I nailed on the **top cap.** This is a piece of clear, straight-grained 1x4 treated pine that I ripped on my table saw, with a 10 degree angle on both edges. I sanded all surfaces with a random orbital sander, and slightly rounded-off the corners so they wouldn't be so sharp.	

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The completed casing, ready for priming and painting.	

Case 2: Aluminum Window, Full Sill

	The east side of the garage, before the makeover. Those windows have been boarded up for years.

One of these windows wasn't even installed straight. All we could figure was... the original carpenters must have drank a lot of liquor at lunchtime... nothing else could explain this pathetic sloppiness.	

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

On the inside I pried off anything that looked related to the original window installation.

On the outside I carefully pried off the trim, thinking that I might want to reuse it.

I pried away the casing a bit and cut the nails with my reciprocating saw.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The casing was removed easily.

Only the original window sill remained. I decided to reuse the sills on these two windows

I pried on the sill to see how it was nailed in place.

They had nailed through the vertical face of the sill, into the studs on either side of the window.

I removed the paint from around the window opening. I used the Metabo power paint remover for the flat surfaces, and a scraper for the grooves.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

After the sill was stripped and sanded, I installed two angled blocks for the sill to rest on. I was careful to make sure that the sill would end up level, because the window will rest on this sill.

These were just 2x6 scraps cut at a 10 degree angle and screwed onto the studs.

The sill had not been fastened down yet.

I coated the back sides of the sill with primer, installed it, and then painted the remaining surfaces with primer.

I also dabbed some primer on the bare surfaces around the window opening. Just in case.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

I installed the window.

After applying a bead of caulking all around the back of the flange, I just set the aluminum-framed window into the opening, resting it on the sill.

I installed one screw in a top corner, then I measured the diagonals to make sure the frame was square.

Then I drove in screws all around the perimeter.

Where possible I used screws with a low-profile head, so they wouldn't interfere with the casing.

Note how this metal window frame has a channel shape. This may be intended to act like vinyl siding J-channel, to cover the ends of vinyl siding..

I also caulked all the gaps where the scalloped part of the siding met the window flange. This will deter leaks and discourage bugs from nesting in there.

Using a brad nailer, I attached some 1/4" thick strips of wood around the perimeter of the window.

These are spacers, but they will also be visible, so I laid them out carefully so they would line up with the edges of the 1x4 trim boards.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

I installed the side casings and then the top casing.

The bottom end of the side casings were cut at a 10 degree angle to match the window sill.

There were some small pits in the old sill, which I later filled with polyester resin (essentially Bondo) followed by the final coat of paint.

I installed the top cap.

(Okay, I cheated... this picture is from the other window, but it's the same idea)

Where Siding Meets Casing:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

I applied caulking all over the place, especially between the window frame and the wood casing.

The red arrows point to seams that I later caulked with siliconized acrylic latex caulk.

The top seam is critical. Ideally I would install an aluminum Z-flashing over this gap, with one leg of the Z-flashing going under the next higher siding board.

But... that wasn't possible.

Where the scalloped siding met wood trim, I applied a liberal dab of caulk and smoothed it with my finger. But often one application isn't enough.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

I just let the caulk harden for an hour and then applied more to fill in any holes.	

Finally...

	The completed project. These are the two aluminum windows that I installed over the original sills.

That's the vinyl window with the fake sill, to the right of the red door. It's a bit bigger than the aluminum windows.	

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Some notes about using treated wood:

Pressure treated yellow pine is an inexpensive and very durable wood. If the paint ever fails, I'm certain the wood will last many years before it begins to rot. But treated yellow pine is a tricky material to work with, especially for finish carpentry, because it can warp very badly. They don't call it "Banana Wood" for nothing.

Since pressure treated wood is soaked in a water-based chemical solution, the boards are often very wet when purchased. Boards that appear straight at the store often look like hockey sticks or airplane propellers in a few days.

Thin lumber can usually be forced to lay flat, and it will stay there if fastened well. I don't consider common nails to be good fasteners. Ring-shank nails or deck screws are good fasteners for holding warp-prone wood in place.

But my usual approach is to just **be lazy.** I often buy the materials far ahead of time and store them in a warm, dry place. It always seems to take a couple of weeks longer than planned before I get around to using the wood, so the wet pine ends up drying out. If the wood is going to warp, it will warp while it's drying in my shop. Then I can choose the best boards for the most critical trim pieces. Of course, this means that I usually need to buy extra materials, because some boards won't be usable for visible trim, but even the worst boards get used somewhere.

Yes guys, there is **a good side to procrastination.** Letting the lumber dry makes good sense.

Tools Used:	**Materials Used:**
• Cordless Drill/Driver • Basic Carpentry Tools • Miter Saw • Table Saw • Finish Nail Gun	• Lumber, Pressure Treated, 1x4x8' • Lumber, Pressure Treated, 2x4x8' • Ring-Shank Siding Nails • Deck Screws • Siliconized Acrylic Latex Caulking

Back To Top Of Page

Read our Disclaimer.

Search Page

Home What's New Project Archives H.I. World

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Rants Contact Us

Copyright © 2003 HammerZone.com

Written February 6, 2003

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

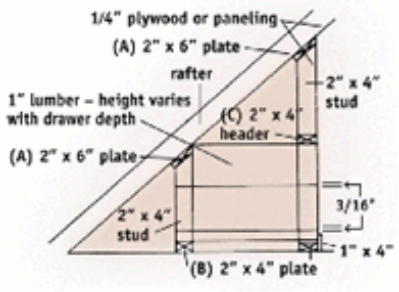
Building Storage Areas

Read these tips and instructions carefully on how to build additonal storage areas in your home. Following the procedures outlined in this document will help you end up with a more satisfactory job with less waste and effort. Inside this document you will find information about:

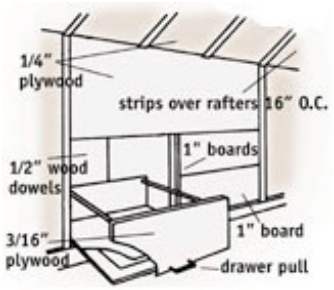
- Storage Drawers for bed Linens and Blankets
- Constructing and Installing the Drawers
- Finishing the Job
- Building Handy Storage Closet for Area Under Sloped Roof
- Construction Details on Inset Pieces for Storage Closet
- Building a Linen Closet with Sliding Drawers
- Creating Closet Space with Folding Doors

Step# 1

STORAGE DRAWERS FOR BED LINERS AND BLANKETS



- Wasted attic space under the slope of the roof in many homes can be converted to valuable storage space for linens, blankets, pillows, etc. You can add as many drawers as needed or as space permits.
- To install drawers, first nail 2x6 plates on the rafters at the locations where the studs will connect when mounted from the floor to the ceiling (see image, part A).
- Next, nail a 2x4 plate (B) on the floor at a position exactly plumb below the plates (A) which you have nailed to the rafter (see image).



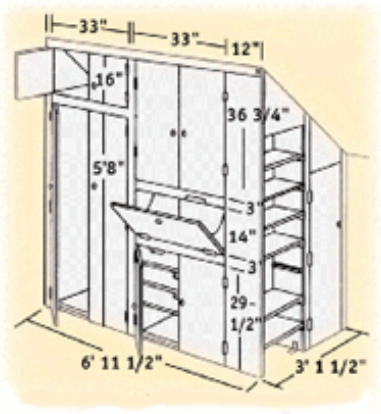
- Insert as many studs at the desired locations as required to provide adequate support to create the number of drawers needed.
- Be sure the studs, both front and back, are exactly plumb in all directions. The studs can be plumbed with either a long level or a plumb bob. The level is probably easier to read and use.
- The front 2x4 studs are usually set at the position where the floor-to-rafter height is approximately 4'. All space under the slope beyond this point is usually wasted. When this space is framed in, it makes an ideal storage area.
- Now place a 2x4 header (C) between the front studs at the top edge of the top drawer. This header provides a nailing edge for the base of the face panel between the top edge of the top drawer and the ceiling. It also provides support for the entire structure.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Insert a 3/16" base just above the 2x4 floor plate to provide a bottom for the lower drawer. Place 1" boards cut to the proper length between two sections of drawers as dividers (see image).
- Finally, divide the area for the drawers into two equal parts, and place a 3/16" piece of plywood as a dividing piece between the two drawer spaces. Be sure the piece of plywood is exactly level and square in all corners. This provides the base for the top drawer in the finished storage area.

Step# 2

CONSTRUCTING AND INSTALLINGTHE DRAWERS



- Make a framework for the bottom of each drawer from a 1x4. Cut the 1x4 pieces to the proper length and fasten at each corner.
- Cover the framework for the bottom of each drawer with a piece of 3/16" plywood cut to proper size.
- Cut the front and back of each drawer from 1" boards and attach the front and back to the base of the drawer as illustrated. Nail these boards to the 1x4 frame with 6-penny box nails.
- Sand the top, bottom and edges of both the front and back of the drawer for a neat finish. You may want to use a nail set and wood putty to hide the nail heads. Attach a drawer pull to the board that forms the face of each drawer.
- Insert a 1/2" wood dowel on each side of the drawer from the back to the front. These can be glued into place. The dowels provide extra support for heavily loaded drawers.

Step# 3

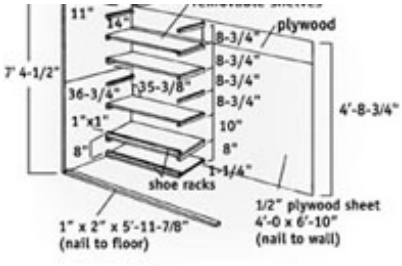
FINISHING THE JOB

- Place the drawers into position. Finish the ceiling, the area above the drawers, and the room area on each side of the drawers with 1/4" plywood or paneling.
- If plywood is used, you can use stain, wallpaper, or paint for a finished look.
- Place strips over the rafters 16" apart on the center for the finishing touch.

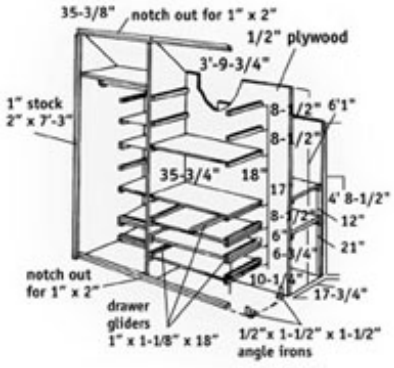
Step# 4

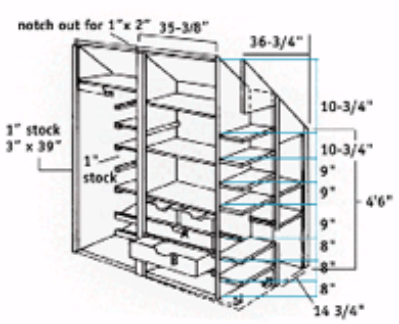
STORAGE CLOSET FOR AREA UNDER SLOPED ROOF

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

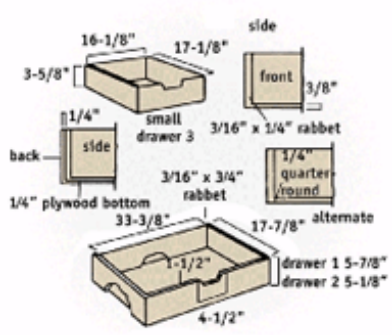


- The image above illustrates a storage cabinet and built-in desk that can easily be built under the sloped area of an attic in a story-and-a-half home. The major part of the cabinet has shelves, drawers and a hanging area. The rear section is used for bulk storage.
- Study it carefully and make any necessary changes in dimensions to create a similar storage area to fit under the sloped area in your home.
- This image illustrates the basic parts of the storage area, as well as the shelves and the overall dimensions of the major components in the rear section of the cabinet. Again, you may need to make slight adjustments in the dimensions shown to conform to the slope of your roof and other variations in size or shape.
- Study the dimensions of each part of the structure carefully, and cut and mount each shelf and support as illustrated.
- The first image below shows how the front section of the storage cabinet is fitted into place. Note the dimensions and the construction materials used to create a bulk storage area at the rear of the closet. This space, ordinarily lost, is now converted to valuable storage for bulky items.
- The second image below shows the final overall construction details for the entire unit when the front and back sections are placed together. Carefully study the materials used and the dimension of each storage area to construct a storage closet and desk of similar design with little effort.





CONSTRUCTION DETAILS ON INSET PIECES FOR STORAGE CLOSE



- See the image to the right for construction details on the drawers used in this storage closet. See the image above for location of these drawers in the finished storage closet.
- No. 3 drawers are used in the finished storage closet.

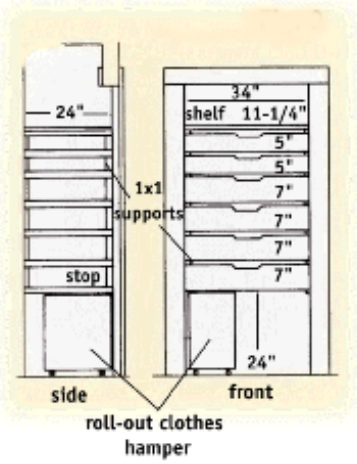
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- This image indicates using plywood and other framing materials for constructing the drawers. You can follow these directions or use different materials if you'd like.
- You can create your own pattern for the doors of the closet as long as they are cut to the proper size.
- The table below lists the number and grade of plywood and framing pieces needed to construct the storage closet. Other hardware items are also listed. You will need to make adjustments in this list if you vary the size and shape. Otherwise, the list provides all materials required for the job.

Plywood Needed to Construct Closet

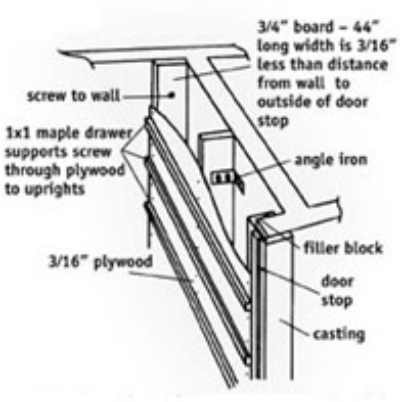
Number, Size	Grade	Where Used
7 panels 4' x 8' x 3/4"	Interior A-A	Partitions,doors, front, sides, shelves, drawer sides and back, desk front
2 panels 4' x 8' x 1/2"	Interior A-D	Interior partitions, back, shelves
1 piece 4' x 4' x 1/4"	Interior A-D	Drawer bottoms
Framing Pieces and Other Lumber		
1-1/2" diameter	3 ft.	Clothes pole
1" x 2"	90 ft.	Alternate handles, trim shelf cleats, drawer guides, miscellaneous
Hardware Items Needed		
Item	Qty.	Where Used
1-1/2" x 3" butt hinges	12 pairs	doors
bullet catches	10	doors
pulls	10	doors
metal chains	2	drop shelf
1/2" x 1-1/2" x 1-1/2" angle irons	3	to anchor unit

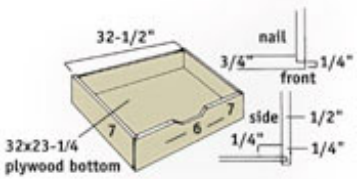
BUILDING A LINEN CLOSET WITH SLIDING DRAWERS

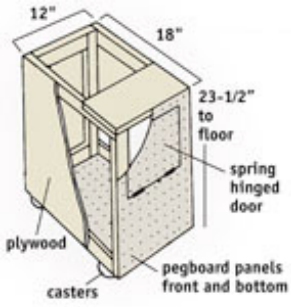


- This image shows how any closet can be converted to a linen closet with sliding drawers. The dimensions must be adjusted to fit the closet in your own home. Fig. 9 shows a typical closet arrangement, so only minor adjustments in dimensions should be required.
- Details on mounting the drawer supports and lining inside the closet are shown in the first image below. Remember, the edge of the new closet must be flush with the outer edge of the door casing, so use care in our measurements at this point.
- The second image below provides construction details and dimensions for drawers. Drawers at the bottom of the closet are normally 7" high, while the two drawers at the top of the closet are normally 5" high. Again, these heights must be adjusted to fit the closet space you are filling.
- Notches are cut out in the front of the drawers instead of adding drawer pulls. Add drawer pulls, if you prefer.
- The third image below shows the construction details and dimensions for the rolling hamper in the bottom of the closet. Again, make adjustments in the dimensions if the space you are using varies from the one shown.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/







Step# 7

CREATING CLOSET SPACE WITH FOLDING DOORS

- You can often create extra closet space in rooms by simply adding folding doors that hang from the ceiling. These folding doors are made of many materials and are available in different styles and patterns.
- Using this method, you can create storage areas in family rooms, mud rooms, garages and even bedrooms without any major construction.
- The entire end of a room can be converted into a closet area with folding doors.
- A small section of any wall can be converted into a closet area. Use either curved overhead corners or straight overhead corners for making these closets.
- Corners can be converted into storage areas by using overhead tracks. Use either curved overhead track or straight overhead track for constructing corner closets.

TOOL AND MATERIAL CHECKLIST

Handsaw	Wood Glue
Angle Irons	Pegboard Panel
Hinges	Cabinet Catches
Folding Doors	Shelf Brackets
Nails	Power Saw
Screws	Dowels
Plywood and Framing	Casters
Drawer Pulls	Overhead Door Track
Toggle Bolts	Boards for Shelves

back to top

Check your state and local codes before starting any project. Follow all safety precautions. Information in this document has been furnished by the National Retail Hardware Association (NRHA) and associated contributors. Every effort has been made to ensure accuracy and safety. Neither NRHA, any contributor nor the retailer can be held responsible for damages or injuries resulting from the use of the information in this document.

© Copyright 2005.

**See product page for details

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Cement, concrete and mortar

cement - lime - sand - aggregate. ballest - mortar - concrete

Below are details of concrete and mortar for different applications, how to estimate quantities and what these quantities mean. The various mixes are quoted as volume ratios, however the individual components are normally sold by weight, so a little calculation work is required.

Cement in concrete and mortar creates its strength by chemical reaction, it is not like wallpaper glue which 'drys out', it 'goes off'. In fact, if the concrete or mortar should 'dry out' before the chemical reaction is substantially complete, it will fail. Likewise if it is subjected to a frost, it can also fail.

Concrete/mortar will take months to reach it's full strength however after about 24 hours it should be fairly hard and after 4 or 5 days, the strength should be enough to stand upto normal punishment.

The various components:

Cement: For normal 'around the house' types jobs, Ordinary (or Portland) cement is required. This is normally available in 50kg bags, although smaller 25kg bags are increasingly becoming available to take account of the UK manual handling regulations. Try not to buy more cement than you need as it cannot be stored for very long. Some special cements are available (i.e. quick drying) which may be required for special situation.

Lime: Lime is sometimes used in cement and reduces the amount of water drawn into the bricks, thus preventing the cement from drying out too quick and shrinking. The main types of lime are:

- hydraulic - which sets by combining with water.
- Non-hydraulic - this hardens by drying out.
- Semi-hydraulic - which is a half-and-half, it mainly needs to dry out but has some hydraulic properties.

Each type is available as either hydrated lime and quicklime - hydrated is more convenient to use as it has been processed ready for use. Hydrated hydraulic lime must be used straight from the bag. Hydrated semi- or non-hydraulic are better to use after soaking in water for 24 hours - stir it into water and leave it overnight - the lime sinks to the bottom and excess water can then be poured off. Mix the lime with the sand before adding the cement.

Sand: Two types of sand are available but are not interchangeable in all applications, whichever type is being used, always pass it though a sieve before use to remove any small stones etc.

Soft sand (or Builders sand): a smooth sand, non-gritty, loamy and with cohesive properties, can be used for:

- Bricklaying mortar
- For bedding paving slabs
- For rendering walls

Sharp sand: this has a gritty feel and is similar to that used to condition soils and potting composts, can be used for:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Concrete
- For rendering floors and walls

Aggregate (also referred to as ballast): is used for concrete and consists of various sized particles from fine grains of sand to small stones. Aggregate is normally graded by size of the largest stones; 10mm Aggregate will have been sieved though a 10mm mesh to remove all larger stones.

Mixes:(see bottom of page for render/stucco mixes)

Mortar	sand : cement	sand : lime : cement
general building (above ground)	5:1	5:1:1
general building (below ground)	3:1	6:1:1
Internal walls	8:1	9:2:1
Concrete	Ballast : cement	Sharp sand : cement
Foundations, drives, floor slab, other heavy duty	5 : 1 (20mm Ballast)	
Foot paths and thin sections	3.25 : 1 (10mm Ballast)	
Paving less than 50mm (2 inch), bedding for slabs		3 : 1

Volume/weight conversion

Cement	1 cubic yard	= 21.6cwt
	1 cubic metre	= 1.4 tonne
Lime	1 cubic yard	= 10.8cwt
	1 cubic metre	= 0.7 tonne
Sand	1 cubic yard	= 25 cwt
	1 cubic metre	= 1.7 tonne

Aggregate(ballast)

The weight of Aggregate depends upon the proportion of solid stone and can vary between 20 to 27 cwt per cubic yard. For practical purposes, the sand volume/weight conversions can be used.

Storage

Cement and lime - keep undercover and dry. Cement will tend to absorb water and turn hard if left for any long periods in high humidity.

Sand and Ballast - small quanties can be stored in heavy duty plastic bags. Larger quantities should, ideally, be stored on a solid base. If it has to be stored on earth, place a lining of some sort on the earth before the sand/ballast is deposited - this will prevent the sand being absorbed into the earth and the earth into the sand. Try to keep the pile covered when not

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

being used, this will ensure that local pets will not contaminate the top side as well as preventing any rain from washing some of it away - but do not let the pile get too dry as this may cause problems when it is being used.

Stucco and Rendering mixes

The terms 'Render' and 'Stucco' are almost interchangeable; Render generally being UK terminology and Stucco, American. However, the mixes below are specific as they are slightly different, Stucco generally having less sand.

Various stucco mixes:

	hydrated lime	sand	cement	hair or fibre
Traditional Simple Soft Lime Stucco	1 part	2 part		
Soft Lime Stucco with fibre (3 layer)				
Base Layers (2)	1 part	3 parts		6 pounds per cubic yards
Finish Layer	1 part	3 parts		
Note: Portland cement is not included in this mix; however, its use will increase the workability of the mix and decrease the setting time, the amount of Portland cement added should not exceed 1/3rd part .				
Soft stucco	5 part	10 part	1/8th part	
Traditional Natural Cement/Lime stucco	1 part	3 parts	2 parts Natural cement	
Portland Cement stucco	2-3%	3 parts	1 parts Portland	

Various rendering mixes:

	hydrated lime	sand	cement
Cement/Lime Render	not more than 15% of the cement's volume	5 parts	2 part Portland
The same basic mix was used for all layers, but the final layer should contain more lime than the underlayers.			
Cement Render		5 parts	1 part Portland

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

CERAMIC TILES FOR WORKTOPS & FLOORS

SKILL LEVEL

If you have some experience of cutting and fixing wall tiles then this will prove invaluable when moving on to the much tougher tiles used for floors and worktops.

SAFETY FIRST

Wear eye protection when using a tile cutter. Take care with sharp edges. Avoid prolonged skin contact with adhesive and grout.

INTRODUCTION

Ceramic and quarry floor tiles provide a hardwearing and attractive surface for kitchens, bathrooms, hallways and conservatories.

Ceramic tiles can be laid on concrete or suitably prepared wooden floors and worktops. Be careful when setting them out because a lot of cutting work can be saved at this stage. The other important point is to get the whole surface flat and level so the edges of the tiles don't stick up. On uneven handmade or terracotta tiles, a few protruding edges are inevitable but you still need to be careful about how you lay them. There is an art in laying uneven tiles because it's impossible to lay a spirit level over several handmade tiles - you need to use your eye and judgement.

2 - Worktops

Tiled worktops are durable enough to withstand hot pans and will resist staining and abrasion provided that flooring grade tiles are selected.

The drawback of tiles is that the grout lines between the tiles can harbour dirt. It is therefore essential that the grout is durable.

Two part epoxy grout is used in commercial situations where food is prepared because it doesn't stain and it won't harbour bacteria easily. The problem is that this type of grout has to be mixed and applied very quickly because the setting time is only around half an hour; once it is set the only way to remove it is by sanding.

For a domestic kitchen, where the food is prepared on chopping boards and not directly on the tiles, you might find it easier to use an acrylic grout. This is more durable and resistant to staining than powder based wall tile grouts, but it won't last as long as epoxy grout. However, when the time comes to replace it, you can just rake out the top 2mm of grout and place more acrylic grout over the top.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

3 - Preparing concrete floors

Although some tiles, such as quarry tiles, will hold back a great deal of damp, it is not advisable to use tiles as a cure for damp floors.

You can test for damp by placing upturned jam jars on doughnut rings of putty. Leave them overnight and if in the morning there is moisture on the inside of the jars, the floor is damp (1).

If there is rising damp in the floor, it should be treated first. You can use a paint-on solution such as water-based bitumen emulsion. Apply two coats and lightly sprinkle sharp sand on the top coat to give a good key for the tile adhesive.

In most cases, the adhesive used to stick down floor tiles can be laid in a thick bed which will allow for slight discrepancies in the floor surface. If the floor is uneven, it is better to float a screed over the floor. This can be done with a self-levelling screed which is mixed with water in a bucket, poured over the floor and spread with a trowel. Alternatively, for a thicker screed, you can mix up three parts sharp grit sand and one of cement with three parts water to one of PVA. This can be trowled into the low areas and feathered out at the edges.

Where a floor crosses from wood to concrete, as in a kitchen extension, it is almost certain to crack along the division if it is tiled over. To avoid this, you need either a flexible silicone joint at this point, or sheets of 1/2in plywood laid over the wood and concrete as an interlayer. The plywood can be stuck onto the concrete with panel adhesive.

4 - Preparing wood

If you are tiling over floorboards, it is essential to lay down some 1/2 inch plywood first to provide a stable inter-layer. It should be fixed with screws or ring-shanked nails which won't pull out.

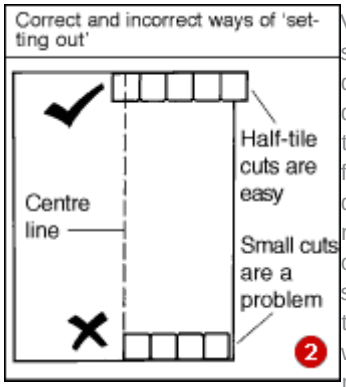
5 - Priming

If you intend to use a cement-based tile adhesive, it is best to prime porous concrete surfaces and plywood first with some diluted PVA adhesive. This will prevent the moisture being drawn out of the adhesive before it has a chance to

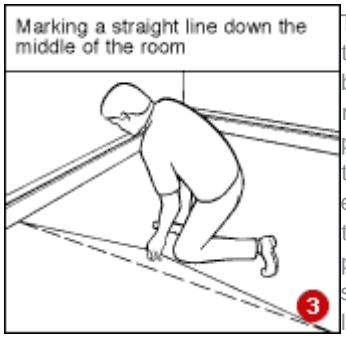
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

set properly.

6 - Setting out



Very few rooms are perfectly square. You need to see what differences there are in the dimensions and work out how to deal with them. Starting from a line centred on a doorway or the middle of the room, try laying a row of tiles on the floor in a dummy run so you can see where the cut tiles will occur. If you end up with tiny slivers move the middle row one way or the other so the cut tile is more substantial (2). For example, you can set the first row to straddle the centre line or to go either side of it.



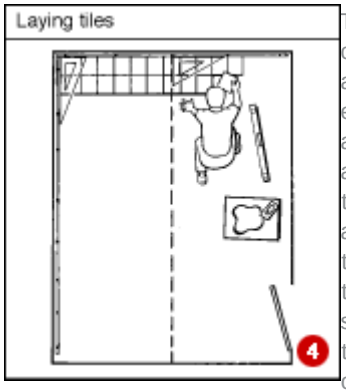
To make sure the first row of tiles is perfectly straight, it is best to snap a line down the middle of the room with a piece of chalked string. Lay the string on pencil marks at either end and pull it tight then lift is slightly and let it ping onto the floor. This should leave a straight chalk line across the room (3).

7 - Laying the tiles

Start furthest away from the door and work backwards so you complete the part nearest the door last. You must leave the tiles for 24 hours before walking on them. If you can't do this, lay some boards down on top of the tiles and tread gently.

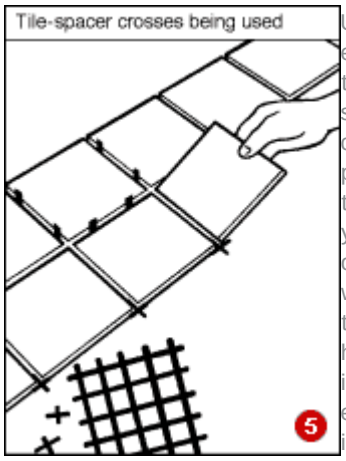
You can start laying from the middle of the room towards the edges but complete a whole row each time, apart from the cut tiles at the edges which can be done later. Alternatively, for a larger area, temporarily fix two guide battens at right angles, set out from the line of the first row of whole tiles.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Trowel on enough adhesive to complete a square of tiles and then use the notched edge to comb through the adhesive to make ridges with a uniform height. Place the tiles on top of the adhesive and press down. Check each tile is level and in line with the adjacent tile (4). Place a spacer next to the tile and then continue with the next one.

8 - Spacers

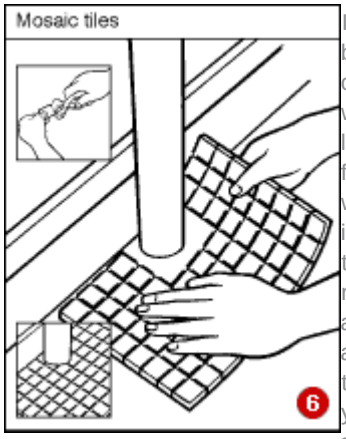


Use spacers between tiles to establish grout lines. If the tiles are exactly the same size you can use tile-spacer crosses which you leave in place and grout over (5). If the tiles vary slightly in size you are better off using pegs or small pieces of timber which you can pull out when the adhesive dries. You may have to use your judgement in keeping the lines roughly equal if the tiles vary greatly in size.

On very large floor areas, you should incorporate a flexible silicone joint to allow for expansion. This is best done in line with a room opening or division so it appears as a natural division.

Wipe off all traces of adhesive from the tile faces as you go and rake out between the tiles before the adhesive sets.

9 - Mosaic tiles



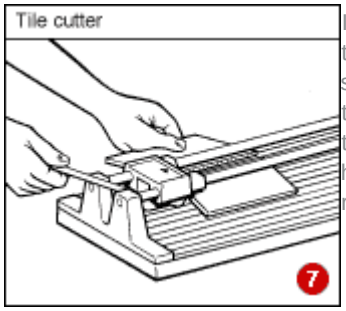
In small areas such as bathrooms with lots of obstructions on the floor or worktops it's best to avoid large tiles - there will be so few whole tiles that the effect will be lost. Mosaic tiles are ideal in these situations as they are easily cut to fit round obstacles (6). The tiles are joined by a nylon mesh or a paper face which keeps them perfectly spaced. If your tiles have a mesh this is simply bedded in the adhesive whereas paper-faced tiles are laid with the paper uppermost. This should be removed when the adhesive sets.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Use a board and hammer to tap mosaics down

10 - Cutting tiles

Floor and worktop tiles are much harder to cut than wall tiles. There are several ways to cut them and much depends upon the tiles and your ability. At B&Q Warehouses you can try out a number of different tile cutters to find out which one suits you. Use the same type and size of tile that you intend to use on the floor or worktop. Large tiles are easier to cut.



If you are using a hand-wheel type cutter, make a single score line in one pass and then smartly snap the tile at the end (7). You will find that hesitation produces bad results.

If you need to cut some very narrow strips of tile with a tungsten-wheeled cutter and want to keep them in one piece, it is better to cut a piece twice as wide as you need it and then cut this in half. Having two sides the same helps make the break even.

For a foolproof way of cutting tiles, obtain a diamond-wheel cutter with water lubrication. This will give you perfect cuts every time and, in many cases, will pay for itself, since there will be no wasted tiles (8).

11 - Grouting

Mix grout thoroughly making sure there are no lumps. Most grouts are best left to stand for a few minutes before use. If the tiles are glazed, you can spread the grout all over the surface with a squeegee and then wipe off the excess with a damp sponge. Where the face of the tile is porous, i.e. terracotta or slate, you will need to point the grout lines with barely moist mortar. When the grout begins to set hard, it needs to be rubbed with a rounded stick or pointing tool. This will compact the grout to make it water resistant.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

12 - Acrylic grout

Acrylic grout is applied straight from the tub with a spreader. Wipe off the excess with a barely damp sponge. If it is too wet it will cause orange-peel type crazing on the surface.

13 - Underfloor heating

You can add a real touch of luxury by incorporating underfloor heating. Lay continuous lengths of plastic heating pipe under the sand and cement screed. The temperature of the heating water should be substantially less than in the radiators since you need to avoid hot spots. This can be achieved by incorporating a mixing manifold into the flow and return.

14 - Drilling tiles

Use a power drill set at slow speed fitted with a masonry bit.

Avoid using hammer action on the drill as it could crack the tile.

For larger holes of 1/2in upwards, you can either buy a tungsten-tipped hole saw or drill several holes with a masonry bit and join them up with a carbide-blade saw. You will need to finish the hole off with a file.

15 - Finishing edges of tiles

On floors, most of the edges of tiles will be covered with a skirting board or door threshold strip, but on worktops you will need to cover the edge of the tiles with a piece of hardwood strip or a purpose-made tile edging. This could be plastic or special round-edged tiles.

It is best to place the strips in line first and then tile away from them towards the back edge. If the tiles meet a wall, then the wall tiles should be placed over the cut edges of the worktop tiles. Use a silicone sealant along the back and then tile over it.

16 - Drained floors

Many people like to create a drained floor for use in a shower or utility area. Attention needs to be paid to every detail of the construction if it is to be watertight. You will need to build the floor with a fall towards the drain.

Low spots are to be avoided at all costs. There should be no

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

give in the floor whatsoever so, if you are building on timber joists and boards, it should be built with a heavier construction than a normal timber floor. The point load of an average person moving from one foot to another will cause grout lines to crack if there is any movement. Don't use chipboard or plywood less than 25mm (1in) thick.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Do It Yourself

To print this page, select **File** then **Print** from your browser

URL: http://www.diynet.com/diy/dr_repair/article/0,2037,DIY_13800_2272514,00.html

Change a Door Handle

From "Ask DIY"
episode ADI-202 -- More Projects »

Q: A couple of doorknobs in my house have seen better days. Can I easily replace them?

Even beginners can install a new doorknob with a power drill and slot screwdriver.

A: (Brad Staggs, *Ask DIY* Home Repair Expert) Sure. It's a very simple project. Even if there's nothing wrong with your doorknob, you might want to upgrade to one that's easier for people with disabilities to open. Before you buy a doorknob, though, take off the old one and take it to the store for comparison. Also make sure you know whether your doorknob goes on the right or left side of the door. To remove the old knob and install the new, follow these steps.

Materials:

Lock set with key and screws
Flathead or slot screwdriver
Power drill
Safety glasses

Figure A

Figure B

1. The toughest part is getting the old doorknob off. If your doorknob has screws on the cover plates, remove those to loosen the old knob. If not, look for a slot on the side of the handle that has a little piece of metal sticking out. Then use the key from the new doorknob to push in on the metal -- that will make the doorknob pop loose (**figure A**).

2. Pull off the doorknob to reveal the plate below. Look for a slot in the plate along the seam where it butts against the door. Wedge a slot (also known as flathead) screwdriver in the slot and then give the plate a half twist to pop it off.

3. With plate removed, you'll see the screws you should remove with a power drill (**figure B**).

   Safety Alert: Always wear safety eyewear when using a power

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

drill.

4. Remove the old latch by taking out the screws with a power drill or screwdriver (**figure C**).

5. Screw the new latch in, setting the screws by hand first and then tightening them with a power drill.

Figure C

6. Place the knobs themselves, set the screws by hand, and finish by drilling. Don't overtighten the screws or you'll bind the doorknob.

7. Test the key and make sure the door locks properly.

More Questions for Brad:

Q: I'm painting the trim around my doors. Would it be easier with the doors off the hinges? How do I remove them?

A: It's a whole lot easier to paint with your doors off the hinges, and you should take your doorknobs off, too. There's a hinge pin running through the center of the hinge, which you should remove with an old screwdriver. Take all three hinges off and then carefully remove the door.

Q: My kids have caused damage by slamming the doorknob on the wall. How can I prevent this?

A: There are actually a couple of solutions. Try one of those springy doorstops that screw into the baseboard of the wall and keep the door from opening all the way and hitting the wall. There are also doorstop contraptions that attach to the top of the hinge pin, for places where you don't have a baseboard on the wall the door is hitting.

Q: My bedroom door is hard to close. I have to really slam it. Any suggestions for solving this problem?

A: That means the door is either too wide for the door opening itself, in which case you need to plane it, or that the latch plate is sticking out too far. Or it could mean that the strike plate needs to be adjusted.

Book:

Everything Home Improvement Book
by Thomas Philbin
ISBN: 1558507187
Adams Media Corporation (1997)
260 Center St.
Holbrook, MA 02343
Phone: 781-767-8100

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Fax: 781-767-0994
Web site: www.adamsmedia.com

- **ALSO IN THIS EPISODE:**
  Quick Tip: Pets/Boredom
  Change a Door Handle
  Feather Lampshades
  Changing the Oil
  Removing Stains from Wood
  Healthy Houseplants
  Homemade Nightlights

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

CHANGING TAPS

SKILL LEVEL

Basic plumbing skills would be useful. Good agility and dexterity are essential to work in cramped conditions.

SAFETY FIRST

Ensure all metal pipes and the bath (if metal) are bonded to a common earth. Take care when using a blowlamp. Keep naked flames away from flammable material. Make sure that the water is off and well drained before placing a lead lamp near the underside of the taps. If possible, use a water-resistant double-insulated lamp. When working upside down, wear eye protection.

INTRODUCTION

Changing taps can give a new lease of life to a bathroom suite or kitchen, and modern fittings make the job a lot easier than it used to be.

The most difficult part is removing old taps which, in bathrooms, may be puttied in. On a workbench it would be a fairly easy job but the inaccessibility makes it awkward, so don't rush into it. Invest a little time in getting comfortable, and you will work faster with less strain. Get a good light so you can see exactly what you are doing and, if you have to lie on your back, use a cushion for your head.

2 - Getting Started

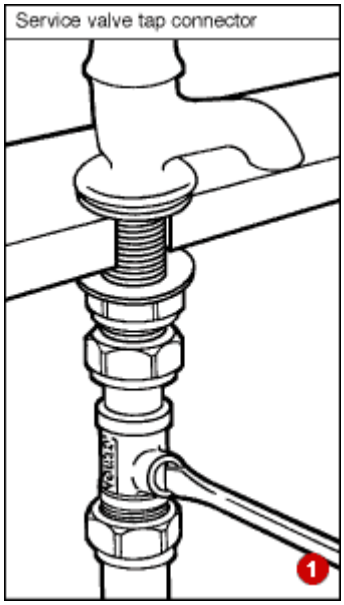
Make sure you turn the water off properly before you begin. Once the old taps are out, things become easier because you can use new, user-friendly fittings.

If you are fitting new taps at the same time as fitting a new sink or bath, it is easier to fit the taps before you put the sink/bath in place. Sometimes you can attach whole sections of pipework as well.

Not all taps are suitable for British-style low-pressure systems which use a tank in the loft. So check before buying. Continental taps are made for mains pressure. If you have an unvented water cylinder or combination boiler, then Continental taps should work well. If you have a tank in the loft, it is best to stick to British-made taps.

3 - Service valves

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Tap connectors can be substituted for integral service valves to provide an easy means of shutting off the water. The top end fits onto the tap and the bottom end is a compression fitting for the pipe. The valve can be turned off for re-washering and servicing the tap (1).

If access is difficult, use Speedfit hand-tightenable tap connectors with integral 'O' rings. The pipe pushes into the end of the fitting once it has been screwed onto the tap. Fibre washers can be held in place by wrapping a few turns of PTFE tape around them and the top of the connector. This also helps make a better seal.

4 - Preliminary checks

New taps are all made to standard dimensions, but check the hole distances in old baths or sinks, as they aren't always compatible with mixer taps. Mixer-tap holes for baths should be approximately 180mm (7.25in) apart, and 195mm (7.75in) apart for sinks. If they aren't standard, you will need to buy adjustable union taps with swivels.

Check that the spout is long enough to deliver water into the bath or basin without dribbling over the side. If you have an old bath with non-standard tap-hole centres, you can buy a mixer with adjustable cranked swivel tails. Alternatively, fit individual taps.

You may also find that the holes in a basin, sink or bath are square (set like diamonds). A new smaller bodied tap doesn't always cover the hole. The only way around this is to buy some chrome cover plates and put them on first.

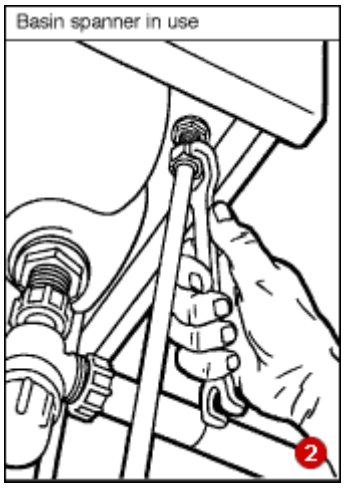
Some bath taps are connected directly to lead pipes with a wiped joint. The lead can be cut back to a straight section and joined with a special mechanical fitting. Don't try to solder copper fittings on to the lead. Where the lead goes back to a galvanized-iron pipe, it will be easier to unscrew the lead completely and use new flexible tails or lengths of plastic pipe.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

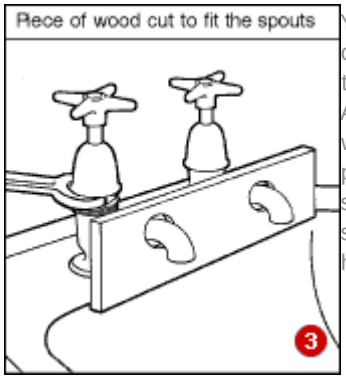
If you want to fit a bath/shower mixer, make sure that both the existing taps are fed from the low-pressure tank-fed system. A quick check can be made by turning on the tap and holding your thumb over the end immediately. If the pressure pushes your thumb off it is most likely to be a mains-fed tap.

5 - Removing old taps

Turn off the water and drain the pipes through the taps. If possible, open other taps lower on the system to drain any remaining water in the pipes. Check that the water is completely shut off - it isn't easy or pleasant to work with water still dribbling through the pipes.



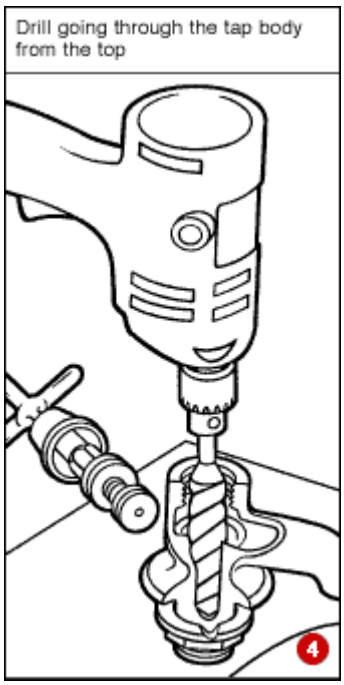
Use a claw spanner to undo the tap connectors and back nuts on the underside of the sink, bath or basin (2). If the taps begin to turn, get somebody to hold them with a wrench or block of wood.



You can cut a notch in a piece of wood and use it as a lever to hold the taps steady. Alternatively, mark two holes where the spouts are positioned and drill two holes so the piece of wood can be slipped over both spouts to hold the taps steady (3).

Remove old taps and the complete waste fitting if the new taps incorporate a pop-up waste.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



If the taps won't budge, it is often easier to cut through the brass back-nut with a hacksaw, and then prise the nut open with an old screwdriver. When this is impossible due to lack of space, the taps can be drilled from the top (4).

Select a drill of the same diameter as the back-nut under the tap. This will be a 3/4in drill for a 1/2in basin or sink tap or a 1in drill for a 3/4in bath tap.

Remove the whole of the head-work and carefully drill straight down through the body of the tap. Be careful that the drill doesn't snag. It is best to use a drill with torque control if you aren't sure you can hold it.

Don't try turning basin taps in their holes while you hold the back-nut steady or you might damage the china or enamel.

Undo the head mechanisms of taps before fitting and check the inside is free of swarf. A surprising number of new taps contain debris which can damage 'O' rings and washers.

6 - Fitting new taps

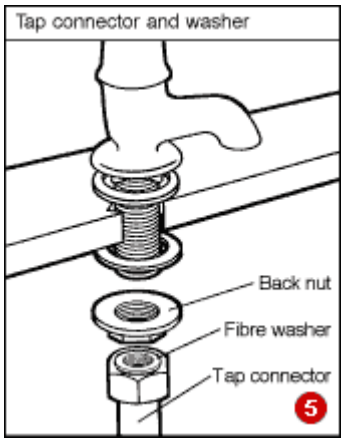
Single taps sometimes twist when they are turned off. They should have anti-rotation washers to hold them steady. Alternatively, you can bed the taps in silicone sealant and let the whole assembly dry for 24 hours.

Clean the area around the taps. If the bath is metal and there are signs of rust, use a rust remover before fitting the taps. Fit the new taps by placing them through the hole with the rubber anti-rotation washer on the upper side. Hot goes on the left, cold on the right.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

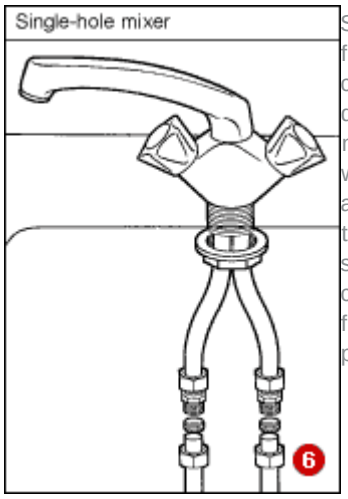
It is easier to reach the far tap under a bath if you unscrew the overflow pipe from the hole in the bath. Remember to replace it afterwards.

Place a plastic top-hat spacer washer (if fitting to a thin sink) on the underside and hand-tighten the back nuts. Hold the tap steady and tighten the back nuts with a wrench or box spanner.



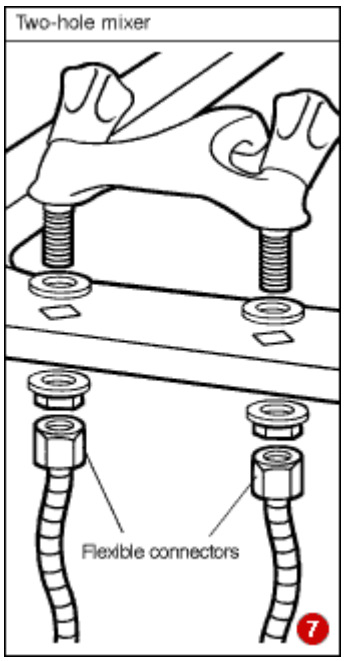
If the old pipework fits, you can use it, but replace the fibre washers in the tap connectors (5). If the old pipes don't fit, or are awkward, it is easier to cut the pipes back and fit new connectors.

The easiest connectors to fit are the braided flexible type. Make sure they have rubber or fibre washers in them before you screw them on.



Single-hole mixers have fairly flexible copper tails (6). You can bend them slightly but don't try bending them any more than 45 degrees or you will kink the pipe. The tails are easier to connect because they are longer, and you can see what you're doing. Use compression fittings or push-fit fittings to join the pipework to the taps.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Two-hole mixer taps need to be sealed above the bath or sink with the special washers provided. Check the holes are a standard distance apart (7).

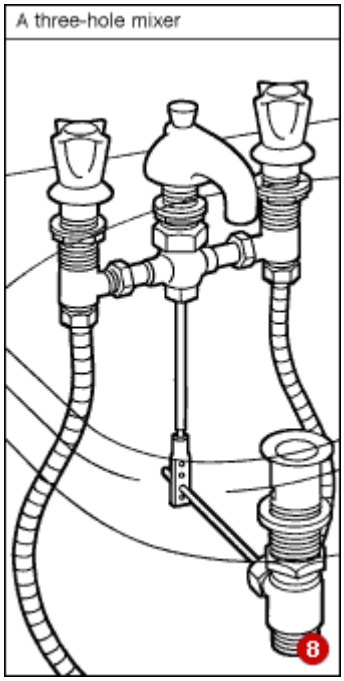
Connect the tap end of flexible connectors before attaching them to the supply pipes.

Flush pipes through with the taps open before closing them off. If a tap doesn't shut off properly, don't force it or you will damage the washer or disc. Open it up fully, run the water and then close it again. This should clear any debris.

7 - Three-hole basin and bidet mixers

Assembling a three-hole mixer is done by placing each section through the holes in the basin or bidet and connecting the pipes underneath (8). Full instructions come with the tap.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



8 - Final checks

If you get a leak there is always a reason, so don't try to force the nut on further than it should go. It is better to turn off the water and undo the fitting so you can see exactly where the problem lies. Examine the surfaces of the metal and look closely at the sealing washers. Check the pipes are squarely aligned and screw the tap connectors back on. You should find this does the trick!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Redwood

Certified Kiln Dried Siding Patterns and Applications

Redwood is synonymous with quality architecture. No other siding material adds value to a home or commercial building like redwood. The value of redwood's beauty is immediately apparent and the value of its long-lasting performance is appreciated for decades.

Architects and builders specify redwood with confidence, knowing that exceptional performance is grown into every board and that redwood will add value and sales appeal to their projects.

Redwood's Total Performance
Redwood's performance characteristics are unique among American softwoods. Its superior stability is especially suited to the demands of siding applications. Its finish retention, weatherability, flame resistance and insulation properties make it ideal for virtually any project and even the most extreme climate.

Dimensional Stability Test reports from the USDA Forest Products Laboratory show that redwood has less volumetric and tangential shrinkage than any other domestic softwood. This means that redwood siding will lay flat and straight throughout the life of the structure with minimal warping, cupping, checking and nail popping. With tighter joints, redwood provides better siding performance than other woods.

Finish Retention
Redwood has an open cellular structure and contains relatively little pitch or resins. This enables redwood to absorb and retain all types of finishes better than most other woods. As a result, projects look better over a longer period of time. Protective finishes last longer and work better. Refinishing is required less often.

Resistance to Decay and Insects
Redwood heartwood has grown-in resistance to decay and insects that is present throughout the lumber, not just on the surface. Wood exposed through sawing, boring or nailing is as decay-resistant as the surface.

CRA CERTIFIED KILN DRIED CLR RWD RIS®

The CRA trademark is on products of member mills of the California Redwood Association only and is an additional assurance of quality.

Redwood grades are established by the Redwood Inspection Service in the *Standard Specifications for Grades of California Redwood Lumber*. Properly grademarked lumber will bear the RIS mark. The RIS is the exclusive rules-writing agency for redwood lumber.

Quality redwood siding is available in the architectural grades: Clear All Heart, Clear, Heart B and B Grade.

Clear All Heart is a superior grade for fine sidings and architectural uses. It is all heartwood and the graded face of each piece is free of knots.

Clear is similar in quality to Clear All Heart, except that it includes sapwood in varying amounts. Some boards may have one or two small, tight knots on the graded face.

Heart B is an economical all-heartwood grade containing a limited number of tight knots and characteristics not permitted in Clear or Clear All Heart. It is graded on one face and one edge.

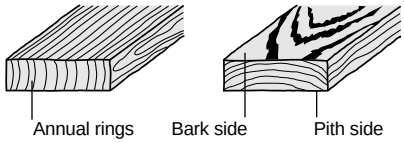
B Grade is an economical grade containing a limited number of tight knots with sapwood accenting the heartwood.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Specifying Storage & Handling

Grain
Redwood lumber has either flat or vertical grain. Siding Is considered vertical grain when the annual growth rings form an angle of 45 degrees or more with the surface of the siding. If the angle is less than 45 degrees, the siding is known as flat grain. Vertical grain siding possesses enhanced dimensional stability and will hold paints and finishes better than flat grain.

Vertical Grain **Flat Grain**



Seasoning
Clear All Heart, Clear, Heart B and B Grade sidings are available Certified Kiln Dried for applications requiring minimal shrinkage and top performance. Redwood kiln dried to accepted standards will include the words “Certified Kiln Dried” or the initials “CKD” in the grademark on each piece or package of siding or be so specified on the invoice.

Patterns
Standard redwood siding patterns include: bevel, rabbeted bevel, tongue and groove, shiplap, channel shiplap and V shiplap. Board and batten siding is laid up using standard size boards.

Pattern Numbers
Each siding pattern has a pattern number. To ensure delivery of the proper product, the pattern number should be included on specifications and invoices. Pattern details are given in CRA’s *Architectural Guide* and *Redwood Pattern Book*.

Textures
Surfaced sidings have a smooth, planed face, emphasizing the wood’s grain and color.

Saw-textured sidings have resawn faces providing a rough textured appearance that holds finishes extremely well.

Specifying Redwood Siding
To ensure delivery of the proper siding product, the specifications should include: use, grade, grain, seasoning, pattern description and number, and surface texture.

For Example
Redwood lumber for [1]exterior siding shall be CRA-RIS grademarked redwood, [2]Heart B grade, [3]mixed grain. [4]Certified Kiln Dried, [5]1x8 channel V shiplap, [6]pattern 785R, [7]saw-textured face to be exposed.

[1]Use
[2]Grade
[3]Grain
[4]Seasoning
[5]Pattern
[6]Pattern Number
[7]Texture

In addition, the Installation section of the specification should specify: non-corrosive fastener materials, type and size; bearing and fastener spacing requirements; water repellent application as appropriate, and field priming of cut edges.

Storage and Handling
Redwood siding and trim are quality finish products and should be handled with care. At the job site, redwood siding should be kept completely under cover and off the ground. Water-proof coverings should allow air to circulate between the covering and the siding. Keeping the siding clean and dry will help to eliminate the possibility of finish problems. For protection, redwood siding is now available wrapped in moisture-proof paper at the sawmill and it should not be unwrapped until installation begins.

Priming
It is recommended that a water repellent containing mildewcide be applied to all surfaces of redwood siding before construction begins. This will inhibit the movement of moisture as well as mildew growth, two conditions which can severely damage a finish coating. When a clear, bleached or semitransparent finish is to be applied later, a preliminary coat of water repellent will protect against weathering and construction staining prior to final finishing. For best performance, special care should be given to end grain; cut ends should be coated before installation. Redwood siding should always be back-primed. Factory priming or pre-finishing is highly recommended.

Application

General Application Information
Careful attention to construction detailing is necessary to prevent moisture penetration into the siding and the wall cavity. Flashing over window and door headers and at other horizontal siding breaks should be sufficiently sized, well placed, tightly anchored and sealed with caulking. Thorough caulking of all joints with a non-hardening compound is important, particularly at the butt joints of short length siding laid vertically. High performance caulks such as polyurethane, polysulfide or acrylic latex are recommended for best results.

The lowest edge of siding should be at least 6 inches off the ground to prevent moisture problems. It is particularly important that end grain at the bottom of vertical siding be coated with water repellent. The use of a drip cap at the lower edge of the siding is recommended.

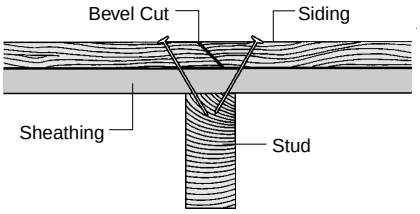
A water repellent building paper, with a permeability rating of at least 5 perms, should be applied over sheathing. This will help reduce water and wind penetration.

Note: There have been reports of problems arising from the combination of wood siding and rigid plastic foam sheathings. CRA advises caution. Request Redwood Technical Data Sheet *Using Redwood Siding Over Rigid Foam Sheathing*.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Measuring and Cutting
All butt joints must occur over a stud or solid blocking. Be sure that siding fits snugly against corner strips and trim. Mitered corners, sometimes used with thicker patterns, should be cut in a miter box. Plain bevel siding requires a compound miter. Predrill nail holes for all ends, especially mitered ends.

Using bevel cuts at a 45° angle (see illustration) can minimize the appearance of gaps if end shrinkage does occur.



Do not reduce CRA lap recommendations as this can result in damage from wind-driven water. Carefully observe expansion clearance requirements for the siding pattern selected.

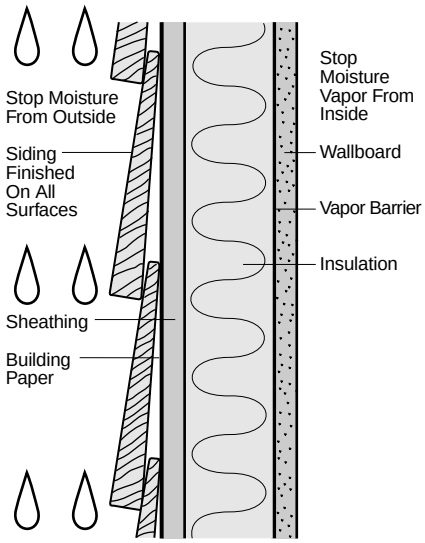
Nailing
Nailing recommendations refer to nailing siding to every stud or (for vertical coursing) each 2x4 blocking line, at not more than 24 inches on center.

Selection of proper nails is important. Siding nails with annular-ringed shanks provide the best holding power. All nails must be either stainless steel, aluminum or top-quality, domestic, hot-dipped galvanized. Electroplated galvanized nails are not recommended. Poor quality nails will react with redwood's natural decay-resisting extractives, and will cause unsightly stains.

Nails can be countersunk (not more than 1/16 inch) or driven flush with wood surfaces. Unfilled nail holes may not be particularly noticeable where natural finishes are used as long as proper quality nails have been used. At mitered corners, or near the edge or end of a piece, pre-drill the nail hole to avoid splitting the wood. Nails must be long enough to penetrate into studs (or stud and wood sheathing combined) at least 1-1/2 inches. Do not fasten siding to only composition or pressed fiber sheathing as those materials provide no nail-holding power.

Do not use staples for redwood siding. Staples do not provide adequate holding power and most are not corrosion-resistant.

Preventing Moisture Problems



Proper interior and exterior wall construction prevents moisture problems. Building paper should have a permeability rating of 5 perms, the vapor barrier, a maximum of 1 perm.

Moisture is the largest cause of siding and finish problems. Most problems can be avoided if precautions are taken during construction. Understanding the dynamics of wood's reaction with moisture will be the builder's best protection against callbacks.

New energy-efficient construction techniques increase the amount of humidity within homes and commercial buildings. Efficient insulation, storm windows, weatherstripping, as well as heating equipment and appliances that retain warmth add to the build-up of interior moisture vapor.

This invisible moisture is one of the least understood and most troublesome causes of structural and finish failures. It moves as invisible moisture vapor from the warm interior of the house toward the cold exterior. Vapor travels through plaster, insulation and wood and may condense into water as it approaches the colder exterior surfaces of the sidewall. This can sometimes result in structural damage as well as siding cupping and nail popping. Water entering the siding can also cause finishes to blister, peel and discolor.

Vapor barriers are necessary to prevent migration of moisture vapor. They must be applied to the warm side of the stud wall, directly under the finish material. There are several types; the most frequently used are either plastic or aluminum sheet material with a rating of one perm or less. Those sheets should overlap at least 2 inches at their edges. Ordinary building felt is not a vapor barrier.

When residing an existing house without a vapor barrier, an effective solution can be to paint the inner side of the exterior walls with a vapor barrier paint.

Attic areas should be adequately vented to prevent vapor from condensing on cold surfaces or penetrating through the ceiling. Critical sources of humidity, such as kitchens, baths and laundries, are best ventilated by fans that exhaust outdoors. Crawl spaces should be well ventilated all around the house; the vent area should equal about 1/50th of total floor space. Keep vents free of obstructions. Movement of vapor into stud spaces from crawl spaces may take place as water evaporates from the ground under the house, and can be retarded by laying polyethylene film over the ground. Basements may be a source of considerable dampness and require effective ventilation.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Bevel & Rabbeted Bevel Patterns

Redwood bevel siding, also known as lap or clapboard siding, has the timeless appeal of a strong traditional style and provides the deepest horizontal shadow line of all siding patterns.

Bevel siding is produced in both plain and rabbeted patterns. Each is available in two different butt thicknesses for variation in depth of shadow line and insulation value.

Plain bevel patterns produce a bolder shadow line than rabbeted bevel patterns of the same thickness. Rabbeted bevel, with its 1/2-inch rabbet milled to fit over the thin edge of the preceding course, allows the siding to lay flat against the studs or sheathing. Rabbeted patterns provide a weather-tight lap and lay up with greater coverage than plain patterns.

Availability
Bevel and rabbeted bevel sidings are available in all architectural grades.

Plain bevel siding has a smooth surface on one face and a saw-textured surface on the other face. Either face may be exposed. Rabbeted bevel siding is available with either a smooth or saw-textured face. Saw-textured faces are more even in color and appearance and they hold finishes better.

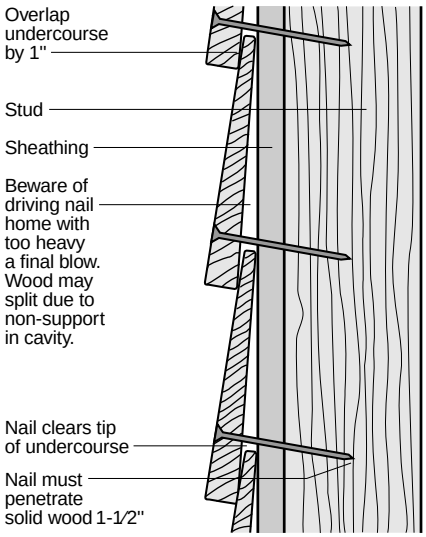
Installation
With plain bevel patterns, use a furring strip to support the lower edge of the starting course. With rabbeted patterns, the bottom course should be supported by a nailing strip sawn from the thin edge of the pattern. Nail bevel siding at every stud, which should not exceed 24 inches on center.

For plain bevel siding, a lap of one inch is required to ensure weather-tightness.

Note: With CKD rabbeted bevel patterns, an expansion clearance of 1/8 inch is required in the rabbet.

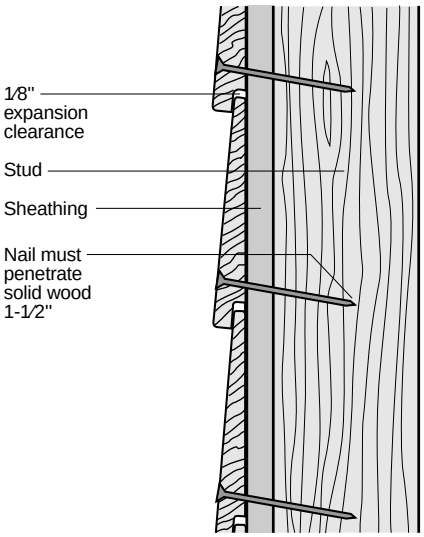
Sample Specification
Exterior siding shall be CRA-RIS grade-marked redwood Clear grade, mixed grain, Certified Kiln Dried, 3/4x8 Rabbeted Bevel, pattern 372, with a saw-textured face.

Plain Bevel
Horizontal Siding (Side View)



Face nail with one nail only per bearing. Drive nail so shank just clears the tip of the preceding undercourse. The space between the nail shank and the tip of the preceding course should not exceed 1/8 inch.

Rabbeted Bevel
Horizontal Siding (Side View)



Face nail with one nail only per bearing. Position material to allow expansion clearance of 1/8 inch. Drive nail about one inch above lower edge of course.

Surface Feet of Bevel Siding to Cover 1 Square (100 sq. ft.)

Nominal Width	Plain	Rabbeted
4 inch	160	128
5 inch	143	
6 inch	134	117
8 inch	124	117
10 inch	122	113

Size Availability
Bevel & Rabbeted Bevel
Bevel

	4"	5"	6"	8"	10"
1/2 inch	•	•	•	•	
3/4 inch			•	•	•

Rabbeted Bevel S1S-2E smooth

	4"	5"	6"	8"	10"
1/2 inch	•		•	•	
3/4 inch			•	•	•

Rabbeted Bevel S1S-2E saw-textured

	4"	5"	6"	8"	10"
3/4 inch			•	•	•

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Tongue & Groove

Redwood tongue and groove siding is versatile and weathertight. Its variety of refined patterns has established a permanent place in residential and commercial architecture. Tongue and groove siding can be laid up vertically, horizontally or diagonally and is ideal for matched interior-exterior combinations. Tongue and groove patterns are produced in square edge, eased (slightly rounded) edge and various widths of V groove edges. The latter create a shadow line emphasizing the direction of the courses. Various design effects are achievable by alternating patterns and board widths.

Availability
Tongue and groove sidings are available in all architectural grades.

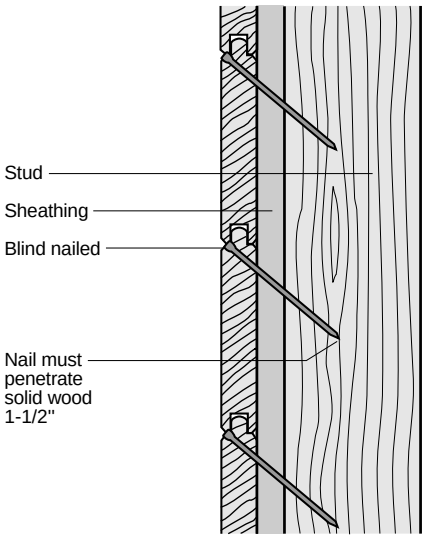
Standard tongue and groove patterns come from the mill with a smooth surface on both faces. Reversible patterns are saw-textured on one face and surfaced smooth on the other. All tongue and groove siding patterns can be special ordered saw-textured. Saw-textured faces are more even in color and appearance and they hold finishes better. Tongue and groove redwood is also available in thinner patterns commonly used for interior paneling.

Installation
Tongue and groove siding is properly applied with the groove edge down; this assures a weathertight wall.

Horizontally-applied tongue and groove siding should be nailed at every stud, not exceeding 24 inches on center. Siding applied vertically should be nailed to 2x4 horizontal blocking that is installed between the studs at not more than 24 inches on center. As an alternative, vertical siding may be nailed to 1x3 furring strips and solid wood sheathing at 24 inches on center.

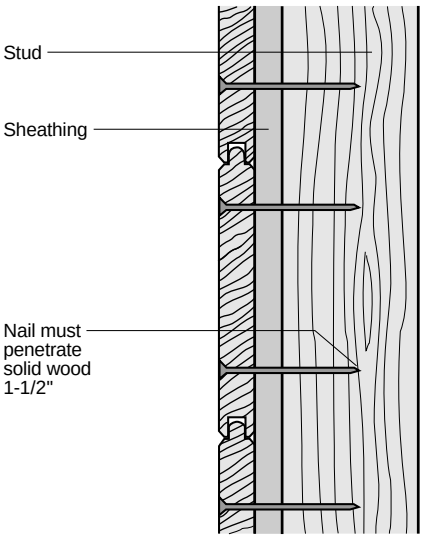
Sample Specification
Exterior siding shall be CRA-RIS grade-marked redwood Clear grade, vertical grain, Certified Kiln Dried, 1x8 Tongue and Groove, pattern 712R, saw-textured face to be exposed.

Tongue and Groove Horizontal Siding (Side View)



For 4-and 6-inch widths of tongue and groove siding over solid wood sheathing, blind nailing is possible using one 8-penny finishing nail per bearing.

Tongue and Groove Horizontal Siding (Side View)



Tongue and groove siding 8 inches or wider should be face-nailed, using two 8-penny nails per bearing.

Surface Feet of Tongue & Groove Siding to Cover 1 Square (100 sq. ft.)

Nominal Width	Coverage Factor
4 inch	128
6 inch	118
8 inch	117
10 inch	113

Size Availability
Tongue & Groove
Eased Edge S2S-CM

	4"	6"	8"	10"
1 inch	•	•	•	

V1S S2S

	4"	6"	8"	10"
1 inch	•	•	•	•

V2S-S1S Saw Textured 1S

	4"	6"	8"	10"
1 inch	•	•	•	•

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Shiplap & Channel Shiplap

Redwood shiplap patterns are widely used for siding and paneling because of the varied visual effects that can be achieved. The boards are self-aligning, which makes installation easy. Shiplap patterns form strong, deliberate shadow lines.

Shiplap siding in V channel, Cove and Boston shiplap patterns can be applied either horizontally or vertically. Square-edged channel shiplap patterns should only be applied vertically.

Availability
Shiplap sidings are available in all architectural grades.

Standard shiplap siding has a smooth finish on both sides, except those patterns designated with the suffix R, which are reversible. Those have a saw-textured channel pattern on one side and a smooth finish V pattern on the other. Shiplap siding patterns can be special ordered with a saw-textured face. Saw-textured faces are more even in color and appearance and they hold finishes better.

Installation
Shiplap sidings applied horizontally start with the bottom course and are nailed at each stud, which should not exceed 24 inches on center. Channel shiplap pattern sidings require a 1/8-inch expansion clearance in each joint.

Shiplap siding applied in vertical courses should be nailed to 2x4 horizontal blocking that is installed between the studs at not more than 24 inches on center. As an alternative, vertical siding may be nailed to horizontal 1x3 furring strips and solid wood sheathing at 24 inches on center.

Sample Specification
Exterior siding shall be CRA-RIS grade-marked redwood Clear All Heart grade, mixed grain, Certified Kiln Dried, 1x8 V Shiplap, pattern 794, smooth face.

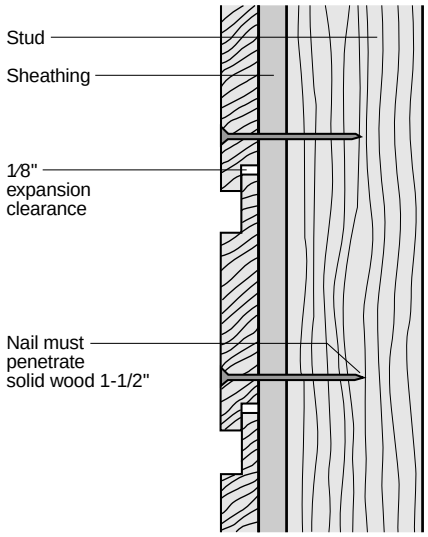
Surface Feet of Shiplap Siding to Cover 1 Square (100 sq.ft.)

Nominal Width	Coverage Factor
6 inch	124
8 inch	121
10 inch	116

Size Availability
Shiplap Patterns

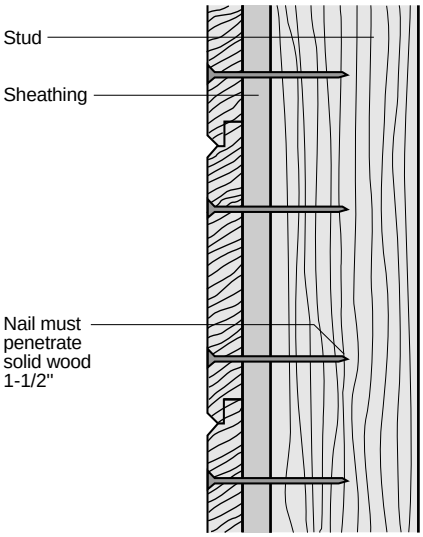
	6"	8"	10"
1 inch	•	•	•

Channel Shiplap
Vertical Siding (Overhead View)

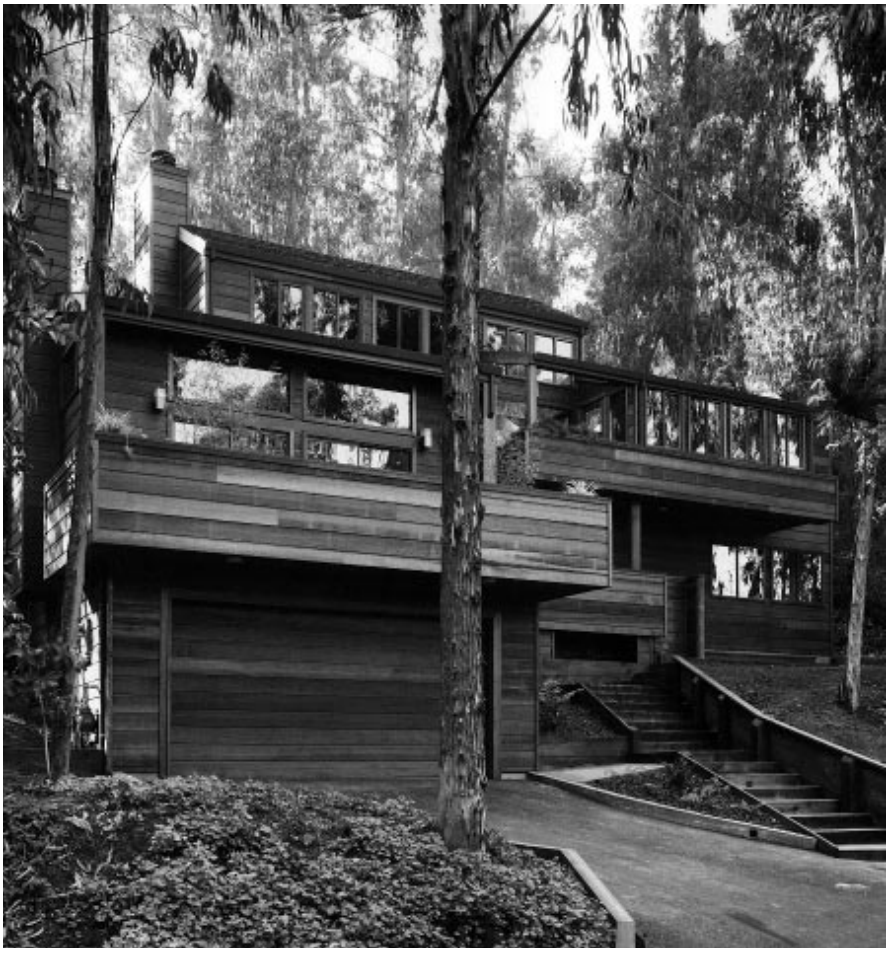


Use one nail an inch from the lap for 6-inch Channel Shiplap. Face nail with two nails per bearing for 8-inch and wider patterns. Space nails 1-1/2 inches from edge of overlap and two inches from edge of underlap for 8-inch boards. Nail wider patterns proportionately.

V Shiplap
Horizontal Siding (Side View)



For 6-inch V Shiplap patterns, use one nail per bearing with the nailing point one inch from the overlapping edge. For patterns 8 inches and wider, face nail with two siding nails per bearing. Position nails one quarter the width of the material in from each edge.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Board & Batten

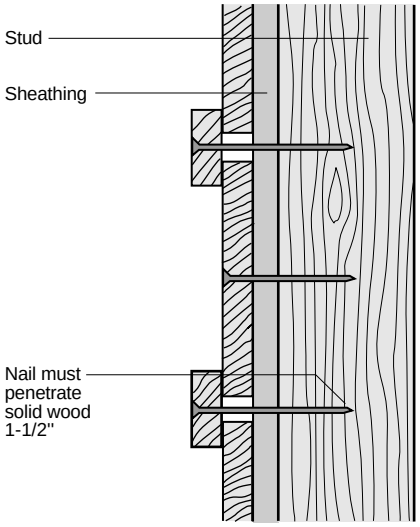
The popular board and batten siding styles are not, strictly speaking, siding patterns but are created using standard size lumber. Any number of interesting treatments can be created, including various width battens over wide board, even spaced board and batten, and reverse board and batten.

Availability
Any clear or tight-knot grade of redwood lumber may be used, either with smooth or saw-textured face. Clear All Heart, Clear, Heart B and B Grade lumber is available Certified Kiln Dried.

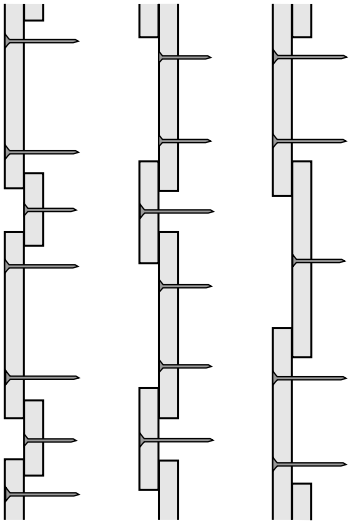
Installation
Board and batten patterns should only be applied vertically. Boards should be nailed to horizontal blocking placed not more than 24 inches on center. As an alternative, 1x3 or greater horizontal furring strips may be applied over solid wood sheathing.

Sample Specification
Exterior siding shall be CRA-RIS grade-marked redwood, B grade, mixed grain, Certified Kiln Dried, 1x10 saw-textured and 1x2 saw-textured battens.

Board and Batten Vertical Siding (Overhead View)



Space underboards at least 1/2 inch apart and nail with one nail per bearing through the center of the material. For boards wider than 8", use two face nails evenly spaced. Wider spacing may be used with wider battens. Nail batten strips through the center so the nail shank passes through the space. Make certain the batten laps the underboard at least 1/2 inch on both sides.



Board and batten siding can have a variety of appearances depending on the width of boards and battens. A reverse board and batten pattern is achieved by placing wide boards over the narrow battens.

Board and Batten Siding

Thickness		Width	
Nominal	Surfaced	Nominal	Surfaced
		2	1-1/2
1	11/16	3	2-1/2
1-1/4	1	4	3-1/2
2	1-1/2	6	5-1/2
		8	7-1/4
		10	9-1/4
		12	11-1/4

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Finishes

Redwood Finishes
Apply finishes to clean, dry surfaces only. The optimum temperature range is between 50 and 70 degrees Fahrenheit. Saw-textured redwood holds finishes up to twice as long as smooth-surfaced wood.

Siding Finishes for Redwood

Description	Application	Maintenance
Clear Water Repellents with Mildewcide Stabilize color at a buckskin tan and let the grain and texture show through. Minimize the effect of weathering and redwood's natural darkening.	Apply with brush or roller. Two coats recommended for new wood. Coat sawn ends, backs and edges before nailing siding in place.	Reapplication required after old finish has lost its effectiveness. Reapplication may be required every 18-24 months.
Bleaching or Weathering Stains Provide a gray, natural weathered appearance. Bleaches accelerate the natural color changes of wood.	Apply with brush or roller. Use one or two coats according to directions. Bleaching action may be aided by periodically spraying surfaces with water.	Bleaching stains provide low maintenance. Periodic reapplication of clear water repellent with mildewcide is recommended.
Semitransparent Stains Variety of colors are available in these finishes that let the wood grain show through. Oil-based stains are recommended for best performance.	Apply with brush for best results, roller next best applicator. Two coats usually required for new wood; follow manufacturer's directions.	Color may wear away after weathering. Refinishing may be necessary every 2-4 years. Remove loose dirt and old finish with bristle brush before refinishing.
Solid Body Stains Available in a variety of opaque colors. These finishes obscure the grain and have an appearance similar to paint. Latex stains should be applied over a compatible stain-blocking primer.	For best results apply with brush. Avoid drips and lapmarks. Two coats usually required for new wood; follow manufacturer's directions.	Color may wear away with age. Refinishing may be necessary every 3-5 years. Remove loose dirt and old finish with bristle brush before refinishing.
Paints Durable attractive finishes for traditional exteriors. Paints obscure the grain and the texture of the wood.	Apply with brush for best results. Roller is next best applicator. One prime coat and two finish coats are recommended. Back-priming required. Use oil- or alkyd-resin base primer and acrylic latex top coat.	Repaint one coat after most of old coat has weathered. Avoid creating an excessively thick paint film. Sand or scrub with bristle brush to remove old finish and dirt. Countersink nails if sanding.

Caution: Varnishes, lacquers and clear film-forming finishes deteriorate rapidly in moisture and sunlight, so they should not be used.

California Redwood Association

405 Enfrente Drive, Suite 200
Novato, California 94949
Telephone 415 382-0662
Toll Free 888 CAL-REDWOOD
Fax 415 382-8531
www.calredwood.org

Redwood—our renewable resource

Additional Literature
Architectural Guide
Redwood Pattern Book
Grades and Uses
Exterior Finishes

10/97

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Closing and opening an existing fireplace sponsored by:

C-Caps (UK) Ltd

Chimney Caps for Disused Flues

Closing:

A fireplace, which is not used anymore, can be successfully closed to allow more wall space…

The insertion of an air-brick is required in the closing of the fireplace to allow air to circulate between the room and the top of the chimney, via the flue and fireplace. This will stop moisture collecting in the soot and smoke deposits within them and forming damp areas.

It is also advisable to cap the chimney with a ventilated cowl, which will allow air in and out, but not water. We are working with www.chimneycap.co.uk who produce just such a vent. The advantage of C-cap is that it will not leak, and it can be fitted in seconds. Your chimney is protected from the elements and from nesting birds...Chimney Caps ventilated cowls will not leak and blend in with the pots to maintain the traditional appearance of the stack.

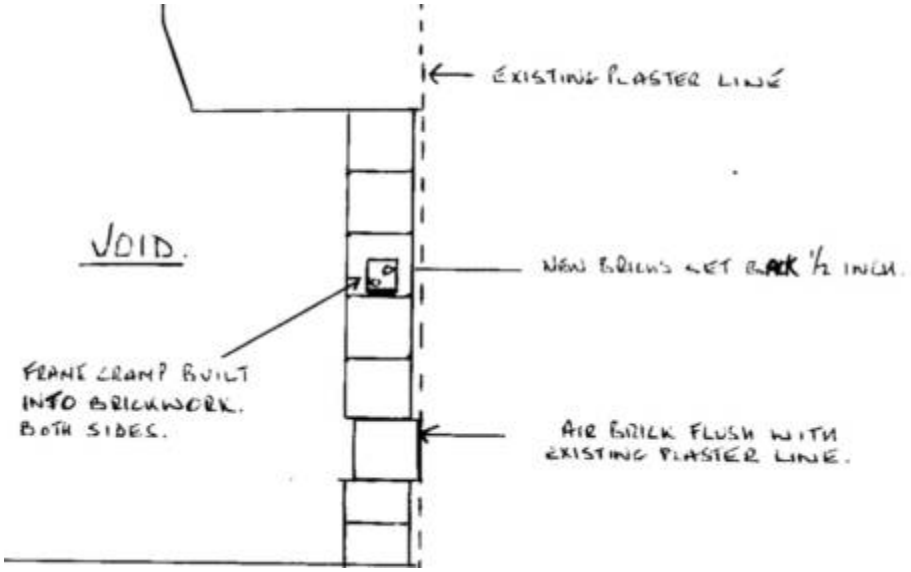
First measure the opening in square metres and multiply by 60. This will tell you how many bricks you will need. (An average fireplace will measure approx 400mm x 550mm or 0.4m x 0.55m…. Equalling 0.22 sq. m. x 60 = 13 bricks) you will need one 9 inch x 3 inch air- brick. Common bricks can be used for building, as they are the cheapest.

Sand and cement is obviously needed and this should be mixed at 4 sand to 1 cement for building the brickwork…The same mortar can be used for the render to cover the bricks with later, but you will have to wet it down a little to apply it.

For an average fireplace you will also need 2 “frame cramps” which are normally fixed to a door or window frame and built into the brickwork joints.

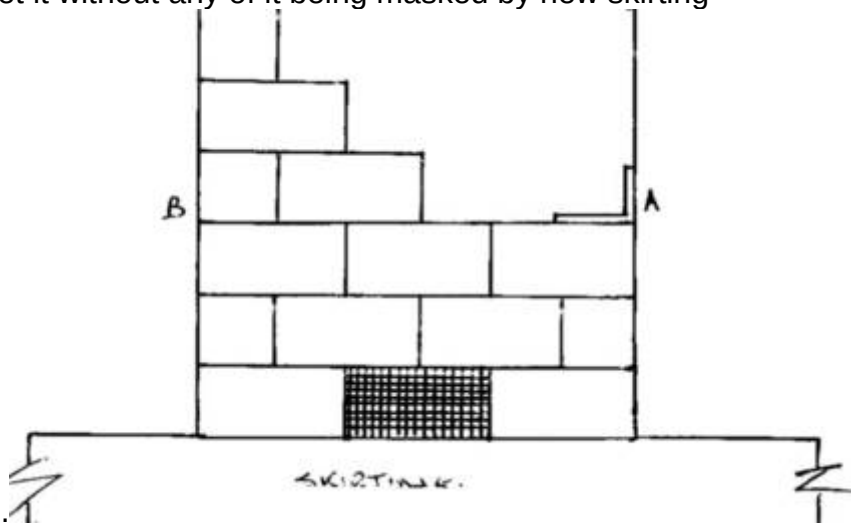
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

These 2 however, will be plugged and screwed to the inside of the fireplace and be built into brickwork you are building. (See diagram)



The brickwork can now be built into the opening; it should be set back half an inch from the existing face of the plasterwork surrounding the fireplace. The air-brick however should be built out a little so that its face is flush with the existing plaster. You can check this by placing a spirit level across the opening. It should touch both sides of the fireplace, and the air-brick.

The air-brick should be in the middle of the new brickwork and as low as you can get it without any of it being masked by new skirting board.



A & B represent the positions of the frame cramps.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

When the brickwork is built, “rake” out the joints by about 10mm. This will give a good key for the render you will apply when the brickwork is firm enough to withstand the pressure of applying it.

To render, spread the sand and cement as evenly as you can over the brickwork; preferably using a plasterers trowel, but it is possible to use the back of the trowel you used to lay the bricks with. When you think you have enough on, use the spirit level, laid across the opening as before, and “dragged” upward. This will pull off all render that is “proud” of the existing plasterwork. You may have to apply a bit more to any depressions, but by repeating the process you will finish with a rendered section, which is flush with the existing plaster. The air-brick of course will already be at this level.

You must now use a wooden or plastic “float” to rub over this surface. Do not do this immediately after you have finished the render. Allow the render to dry out for a while. This is ready to “rub in” when you can move the float on the surface of the render without the render moving, but all pin-holes fill up with the deposits of render left on the trowel. Rub in a circular motion, with steady, not firm, pressure and you will be left with a nice flat surface, which should be 2 or 3mm below the level of the existing plaster.

This new surface must now be “scratched”. Use a nail and put light scratches all over it. This is to give a good key for the final coat of plaster called “skim”.

When you are buying skim, most merchants will know what you mean, but its real name is multi purpose top coat plaster. This must be mixed to a very creamy consistency (runny custard) and applied using a plasterer’s trowel.

When you have covered the area, leave for a minute or two and trowel up again. Repeat this 2 or 3 times (more if necessary) and the trowel marks will disappear, as the plaster gets harder. Timing is the essence of this type of plastering and you will not have time to go shopping when this stuff is on the wall.

Your surface is now complete and you can fix the skirting boards in place.

Finally you will need a grill to cover the air-brick. These can be found at Builders merchants and diy stores. They are either plastic or brass effect and can be screwed or glued in place.

Don't forget you now need to cap the top of the pot or flue. See www.chimneycap.co.uk

OPENING A FIREPLACE.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

In most situations the above operations will be done in reverse. It is unlikely that any structural alteration will have been done to your fireplace when it was bricked up, but you must still proceed with caution. **Do not attempt to make the opening any larger than it was originally. Fire openings are quite an exact science. Altering their shape and size will affect the efficiency of the fire and possibly lead to a "blowback" of smoke etc.**

Determine the centre of the section to be removed and make a hole at floor level, this hole can then be widened and raised until you meet the sides and top of the original opening. Clean off any jagged bits of brick and plaster etc and remove all debris from inside the opening. You should be able to reach up at least an arms length without obstruction. Do not attempt to look up until you have done this arm test.

It is at this stage you will need to check the builders have not capped off the chimney. Call in a Corgi registered plumber to test the flue. Please do not assume that because it looks clear it is suitable for a fire that has any kind of exhaust fumes. At worst, your flue may have to be lined.

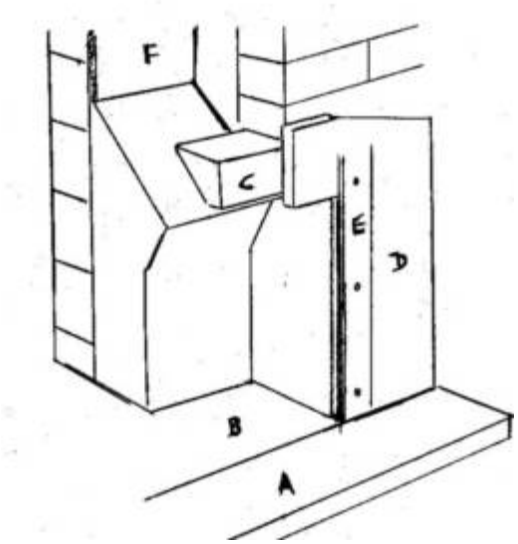
You can now make good any areas of brickwork and plaster that have been damaged. This should be done using lime mortar, which is less susceptible to cracking in the heat. The mix for this will be 4 parts soft sand, 2 parts lime and 1 part cement. All of the materials mentioned in these help sheets are available from builders merchants.

The area you are making good needs to be free from soot and any flaking material.

Corners can be reinstated by tacking a piece of timber to the face of the existing wall and rendering up to it. The timber can be removed the following day leaving a straight edge. If top coat plaster (skim) is required to the surface, some scratch marks should be placed in the render to give a key, i.e. allow a stronger bond between the two surfaces. (see closing a fireplace).

A. Hearth formed as you wish, generally stone slabs, quarry tiles or bricks.
B. Concrete base.
C. Throat lintel, this will be an integral part of the existing fireplace.
D. Plaster/render (containing lime)
E. Timber tacked on to form straight edge to D & C if necessary
F. Flue. Must be checked by corgi-registered fitter.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



If a hearth is required this can be formed in front of the opening either by paving slabs, or a bed of sharp sand and cement with quarry tiles laid over. The bed for the slabs or quarry tiles should be 4 parts sharp sand and 1 part cement. The gap between the back edge of your new hearth and the back of the fireplace opening can be filled with either concrete or the same mix of sharp sand and cement. Please check for any cowl or cap that is on top of your existing chimney. If it is, it must now be removed

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Find the right colour combination for you

Introduction

Ever entered a grey office building on a nice sunny day? And noticed that your mood changed rather dramatically? Not only the fact that you probably enter the building because you have work to do will affect your mood, but also the change in colours around you will have an effect on your state of mind. The blue sky, colourful neon lights or green trees influence you in a different way then the (usually) cream, grey and white surroundings of your work environment.

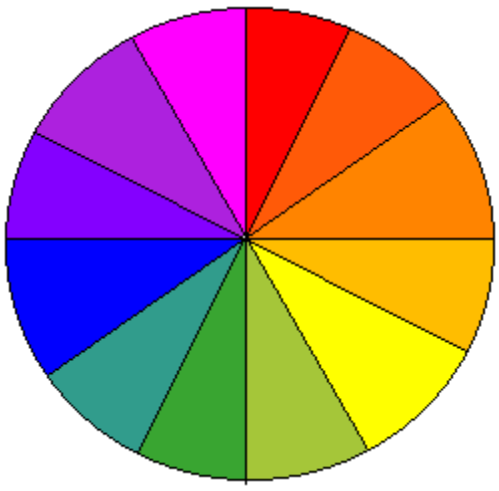
Colours have influenced us all our lives. When babies first open their eyes, they are not yet able to focus. They have to rely on the smell, sound and colour of things around them. They will recognise us by our sound and smell, and we in turn try to entertain them with noisy and very colourful toys. Colour will stimulate them from the beginning.

Using colour in the right way is very important in your living environment. Some colours will have a soothing effect, while other colours will stimulate you and make you active. Using the right colour combination therefore can make all the difference.

This guide will try and help you in the right direction. It will mainly focus on the use of colour in the kitchen, but you will soon find that the techniques and colour combinations used will be of use in the rest of your home as well!

The colour wheel

To find the right combination of colours that work for you it is important first to get to know the different colours and their effect on each other. The colour wheel is a great tool to learn about colours and the combinations that work best. Below is an example of a colour wheel:

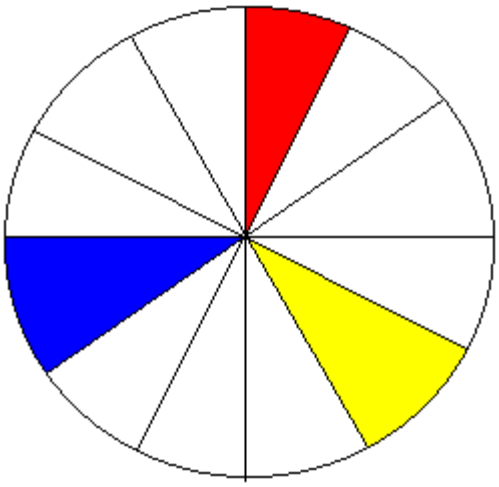


The colour wheel is created by mixing two of the three primary colours (blue-red-yellow) together in different quantities and can be as complex as you want. Here we have decided for a 12-sliced colour wheel. It is not too complicated yet will still give you a good idea of how colours work together.

The colour wheel is build up of three types of colour: primary colours, secondary colours and tertiary colours.

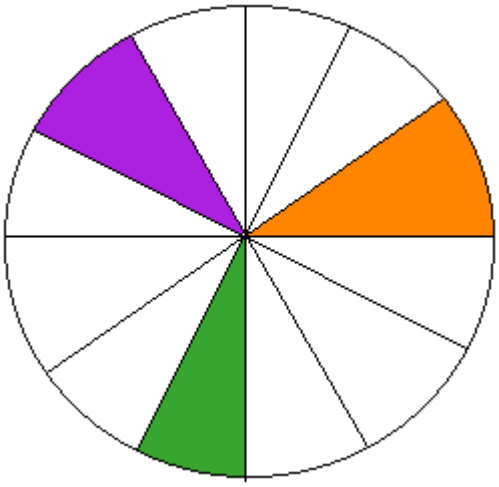
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Primary colours:



The primary colours are red, yellow and blue. It is not possible to make any of these three colours by mixing colours together.

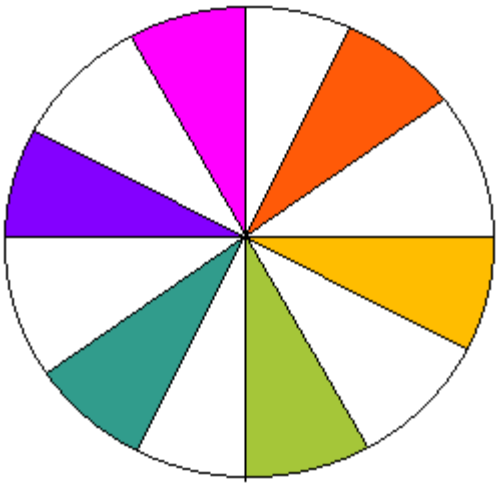
Secondary colours:



Secondary colours are made by mixing two primary colours together in equal quantities, for example yellow and blue make green.

Tertiary colours:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



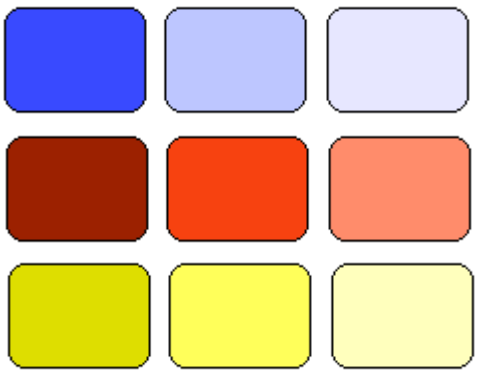
Tertiary colours can be created by mixing one primary colour and one secondary colour from the same part of the wheel.

Apart from the obvious colour mixes above, it is the intensity of a colour that is very important for its effect. Mixing a colour with black or white results, respectively, in different shades and tints of the same colour. Which gives a whole new avenue of possibilities and combinations of course. Just think about pastel colours and their enormous popularity!

Typical colour combinations

Monochromatic colour combinations

This colour combination will be achieved by using only one colour, but applying it in different shades and tints. Just a few examples:



Looking at these colour combinations you will probably sense different reactions in yourself. The lilac combination generally has a soothing effect, while the reds will want to warm you. The citrus-like colours of the last example will probably have a refreshing impact on you. Imagine the difference each of these combinations would have on your living environment!

Analogue colour colour combinations

These combinations are made when three neighbouring colours of the colour wheel are combined in a scheme:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

or

Triad colour combinations

A triad colour combination combines three colours that lie at equal distances from each other in the colour wheel. They are stimulating and bring the best out of each other.

The triad colour combination with the three primary colours:

And here with the three secondary colours:

How to choose the perfect colour combination for you

Like explained before, different colours will have a different effect on your mood. It is therefore important to define which atmosphere you want to create in the room you are going to decorate. For example, a bedroom is for most people a place to rest and relax. Therefore colours you find peaceful and relaxing would work the best. On the other hand, a playroom for the kids should be a stimulating and creative environment, begging for bright and cheerful colours.

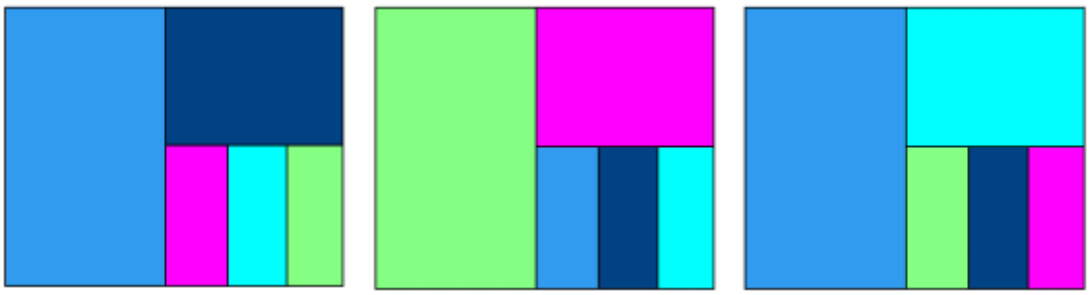
It can sometimes be very overwhelming, having to choose a completely new colourscheme for your room. Defining and writing down the colours you think of when you think of the mood for the room is a good start, as is collecting cut-outs from magazines of colour combinations and rooms you like the look of.

It is however not only important to decide which colours you want to choose for a room, but also where you want to use these colours. Will you use them for the large areas of your room, such as walls, floors and ceilings, or will they be accent colours that may come back in cushion covers, appliances or soft furnishings? The effect of a colour not only depends on the colour or its shade itself, but also on the area you will use it for. For example, bright red as a wall colour might be too much of a good thing for most people, but red cushion covers or a red painting might just be the accent a room needs to warm up.

Have a look at these examples and see what a different feel the same colours in different quantities can have!

Example1 **Example2** **Example3**

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Example1 is a very sophisticated combination of the four colours. The blue and dark purple colours give it a grown-up feel, while the fuschia, aqua and bright green accents give it a bit of sparkle.

In Example2 the major roles have been given to the two most expressive colours in this scheme, making it suitable for a child's playroom.

Example3 focuses on the refreshing properties of the aqua and the blue combined, while the dark purple and the fuschia working together to add colour to the scheme. This combination would be suitable for a modern office or bathroom.

Below are a few examples of kitchens and the colours used in their design. I hope you can get some inspiration from it!

This colourscheme gives the kitchen a very homely and cosy feel, without making it too sweet. The use of natural materials gives it a very rustic feel (image courtesy of Appletree Kitchens, Cardiff).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

This kitchen feels light and airy because colours from the same part of the colourwheel have been used to create this peaceful scheme. The kitchen gets its substance through the creative use of colourful tiles and the practical island in the middle (image courtesy of Premier Kitchens, Peterborough).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

This incredibly vibrant kitchen works surprisingly well! The blond wood and stainless steel units are the perfect antidote to the hot pink walls and green curtains. Also note the pink worktop, made of special lava stone (image courtesy of Winning Designs South, Pulborough).

Conclusion

Colour is such a personal thing, it is difficult to say what is a good and what is a bad colour combination. Everybody's taste is different, and so different people will be attracted to different colour combinations. But be brave and don't compromise on your choice of colours. Choose the colours you feel comfortable with and use them to your heart's content. After all, it is your living space, you have to live with it, so live it!

Below are some good links to websites about colour, design and advice on how to accessorize and colour your home without spending too much money. Enjoy!

Winning Designs
We design and install custom built and standard, traditional and contemporary, kitchens, bedrooms, bathrooms, bookcases and home offices.

Premier Kitchens & Bedrooms
Offering a kitchen to suit everyone's needs and tastes.

Appletree Kitchens
Vibrant new ranges for 2003 now available at Appletree Kitchens!

UK Style Moodboard Designer
This tool will help you determine the colour combinations for your home! Also visit the rest of the UK Style website, with lots of tips and tricks of the DIY trade.

Dulux Mousepainter
THE way to design your home! You can choose between kitchen, bathroom, bedroom, living room and much more, with a wealth of colours and furnishings to choose from.

Homestagers UK
The professional homestagers website with loads of tips and advice on how to prepare yourself and your home for that all-important sale!

Period Style Guide
Find out about your favourite period and try to create the style!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

COLOUR SCHEMES

SKILL LEVEL

Creating a colour scheme may seem difficult, but many manufacturers of paints and wallcoverings carefully co-ordinate their colour cards and design collections so that most of the hard work is already done for you

SAFETY FIRST

You may need to climb a ladder to paint a ceiling or hang wallpaper. Make sure the ladder is stable, and take care not to over-reach.

INTRODUCTION

Colour is the first thing you notice when you enter a room. It creates mood and atmosphere, and allows you to transform your home quickly and cheaply with stunning results.

When we come to choose colours, most of us are aware that dark colours will make a room look smaller, and pale ones make a room seem more spacious, but colour, together with pattern and texture, are far more versatile than this. Paints, wallcoverings and fabrics can be used to create a variety of impressions and, armed with just a few basic facts, you will be able to make them work for you in many different ways.

2 - Choosing colour

Red or pink tones look deeper and richer in artificial light, but blues and greens can look washed out. Keep this in mind when choosing colours for a room that will be used primarily in the evenings.

Colours have characteristics that can affect our mood and make the same room appear completely different, simply by the way it is decorated. So before you begin to think about colours, take a good look around the room and make a note of how much natural light it gets and what you like or dislike about it.

Warm colours such as red, orange and yellow are 'advancing' colours which appear to draw surfaces closer, and create a sense of cosy comfort. These are lively colours, which make them a good choice for gloomy rooms facing north or east which receive little natural light, basements, and rooms heavily shaded by trees.

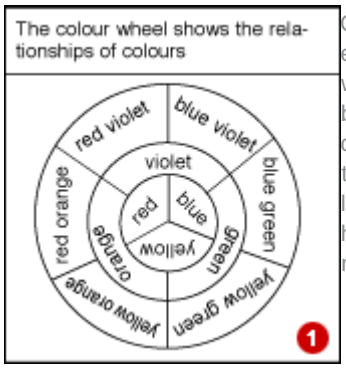
Cool colours such as green, blue and violet are 'receding' colours which maximise space, and make a room feel fresh and airy. These are relaxing colours ideal for sunny rooms facing south and west, or anywhere there is abundant natural light.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Neutral colours such as cream and beige are useful for toning down more adventurous colours but, used in their own right, will allow attention to be focused on the contents of a room, rather than the room itself. They also complement natural woods and cork well.

Some colours evoke a definite mood which makes them a good choice for particular rooms. Pinks and red-blues, for example, have a romantic feel that is perfect for dining rooms and bedrooms, while fresh outdoor colours like yellow and green are best suited to busy daytime rooms.

3 - Mixing colours



Colours that are opposite each other on the colour wheel, such as yellow and blue, create stimulating colour schemes, while those that are close to each other, like blue and green, harmonise well and are more relaxing to live with (1).

To create light and depth in a room and to make sure that no one colour dominates, use colours in different strengths and add neutral accessories.

Pale colours reflect over 80% of light and dark colours absorb nearly 90%, so a higher level of artificial light is needed in a room where there is a dark or strong colour scheme.

Contrasting colours that clash, like lime and yellow or pink and orange, can create a very dramatic, modern colour scheme, and work best in big bold blocks with nothing else competing for attention.

If you are not a confident decorator, a colour scheme which uses several strengths of the same basic colour is a safe choice and very easy on the eye. Use the mid-tone for a large area like curtains or the floorcovering, a lighter tone for walls and ceiling, and the strongest only for emphasis with accessories.

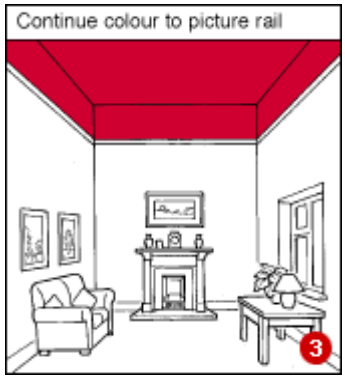
Using only shades of a single colour can look dull, but the effect is easily spiced up with an accent colour from the opposite side of the colour spectrum. A splash of orange or peach will brighten up a blue room; green makes an elegant contrast to rosy pinks; and yellow adds warmth to a lilac

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

colour scheme. An accent colour needn't be paint or wallpaper - colourful lampshades or cushions will do just as well.

4 - Using colours

A high ceiling looks lower if it is painted a bold or advancing colour (2). By continuing the colour down to a picture rail, you can draw down a ceiling even further (3).

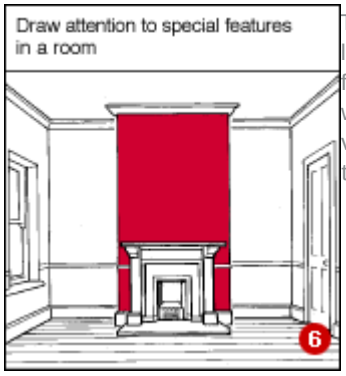


It also helps if the floorcovering is a similar colour to the ceiling (4).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

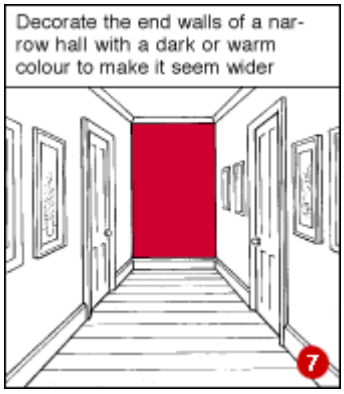
Low ceilings seem less oppressive if painted a brilliant white or in a pale receding shade (5).

The light reflecting sheen of silk vinyl emulsion will also help to make the most of natural light and a room with a low ceiling may seem brighter.



Turn a fireplace, bookcase or large piece of furniture into a focal point by painting the wall behind it in a more vibrant colour than the rest of the room (6).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



A narrow hall will appear to be wider if end walls are decorated with dark or warm colours, and side walls with a paler, receding shade (7). The same technique will also make a rectangular room seem more square.

Unattractive features such as radiators and built-in cupboards will be less obvious if they are painted the same colour as surrounding walls. In small rooms, doors should also be painted to merge with their surroundings.

5 - Choosing patterns

Large and busy designs tend to draw in walls and make big rooms seem cosy, but they will overwhelm a small space. Similarly, tiny or subdued patterns will make the most of small rooms, but get lost in a large one.

Pattern can also create optical illusions and because of its ability to trick the eye, it can be a useful decorating tool if the features of a room aren't pleasing.

Regular patterns will highlight walls that are out-of-true and uneven walls can make pattern matching very difficult, so choose a wallcovering design with care.

Florals don't allow the eye to fix on any one point, so they are wonderful for irregular walls and for softening awkward angles or disguising an unattractive feature.

Dainty floral sprigs are perfect for small rooms, narrow hallways and cloakrooms, whereas big florals are best shown off in large or high-ceilinged rooms, and in bedrooms with co-ordinating fabrics.

Stripes suit almost any style or size or room. Classic stripes in contrasting colours are a good choice for smart daytime rooms and hallways, whereas stylised stripes are more informal and very versatile. Stripes are also useful for altering the proportions of a room. Horizontal stripes seem to push out walls in a small room, and will make a low ceiling appear higher when used vertically.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Trimming wallpaper around doors, windows or cupboards can ruin the look of a large pattern. Stripes and small designs will be a better choice, and more economical on the number of rolls needed.

Checks range from smart tartans to informal ginghams, and are as versatile as stripes but look busier, so they work best in simple colour schemes where the pattern can be fully appreciated. Checks are also useful for drawing in far-away walls and softening harsh edges.

Geometrics are neat and restful, and make walls seem to recede, so they create the perfect backdrop to a busy or cluttered room, or pictures and memorabilia that you want to display.

If you have chosen a stimulating colour scheme, be sparing with pattern on furnishing and accessories. Busy patterns will simply compete for attention.

6 - Mixing patterns

Pay attention to the size and scale of a pattern, and use large designs over large areas such as a sofa or curtains for a wide window, and keep small-scale designs for accessories like cushion covers and lampshades.

In a large room, don't be afraid to break up walls with pattern and add deep borders for emphasis. In more modest rooms, mix a small pattern with a bolder design, and if you think that a room is becoming too busy, tone it down with areas of plain colour or paint-effect wallpaper.

Decorating a stairwell can be tricky, but dividing tall walls with a dado rail or border and using complementary wallcoverings above and below will make the job easier and add interest.

If you are not a confident decorator, choose wallcoverings and fabrics from a fully co-ordinated collection which will ensure that patterns are evenly balanced and have a similar dominating colour. This allows the eye to flow from one part of the room to the other, and is especially important for open-plan living areas and dual-purpose rooms.

However, if you do want to try mixing different patterns, the key to success is to choose designs that have a common colour and style, and stick to it throughout.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Decorative borders aren't just for walls. They help to integrate patterns, and can be used to jazz up doors, an old pelmet or bedhead, and even some types of furniture.

7 - Introducing texture

Texture is a subtle way of adding visual interest. Matt, rough textures such as wool, brick, wood and cork add warmth, while smooth, shiny surfaces such as chrome, glass and ceramic tiles are cool and more sophisticated.

Texture can enhance the overall effect you want to create. Matt emulsion, for example, has a rich velvety finish that helps to make big rooms seem more cosy, while the light-reflecting sheen of silk vinyl has a brightening effect that makes small rooms seem more airy.

Texture is very important in one-colour schemes. Where a room has no colour contrast, add rugs and fabrics with a woven pattern for warmth.

Poor surfaces will be much more obvious with a plain painted finish so, if you don't want to add pattern, add texture. Paint techniques such as sponging and ragging will help to disguise blemishes.

If pattern isn't to your taste, paint-effect paper will give walls an instant facelift with colour and texture, but without the skill or effort needed for the real thing.

8 - Starting out

Few of us are lucky enough to start decorating from scratch. There is usually an item that we don't want to replace, and which has to blend in with the new colour scheme.

With plain carpets and fabrics, you can be as bold or as restrained as the mood takes you, but picking colours or patterns to complement existing designs can be more tricky. Take your cue from a shade in carpet or curtains, and use it as the starting point for the new scheme.

Florals look good against an otherwise plain background, while stripes and small geometrics mix well with other patterns and won't compete with more demanding designs. Paint-effect papers are extremely adaptable, and a failsafe choice.

9 - Finishing touches

Don't forget to update accessories such as picture frames and table lamps to complement your new colour scheme. If you can't afford to buy, it is possible to paint many surfaces

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

with the right preparation.

Lampshades that complement or contrast with your colour scheme are a quick and easy way to create a stylish, co-ordinated look.

Dimmer switches are easy to install but will allow you to change the mood of a room at the touch of a button.

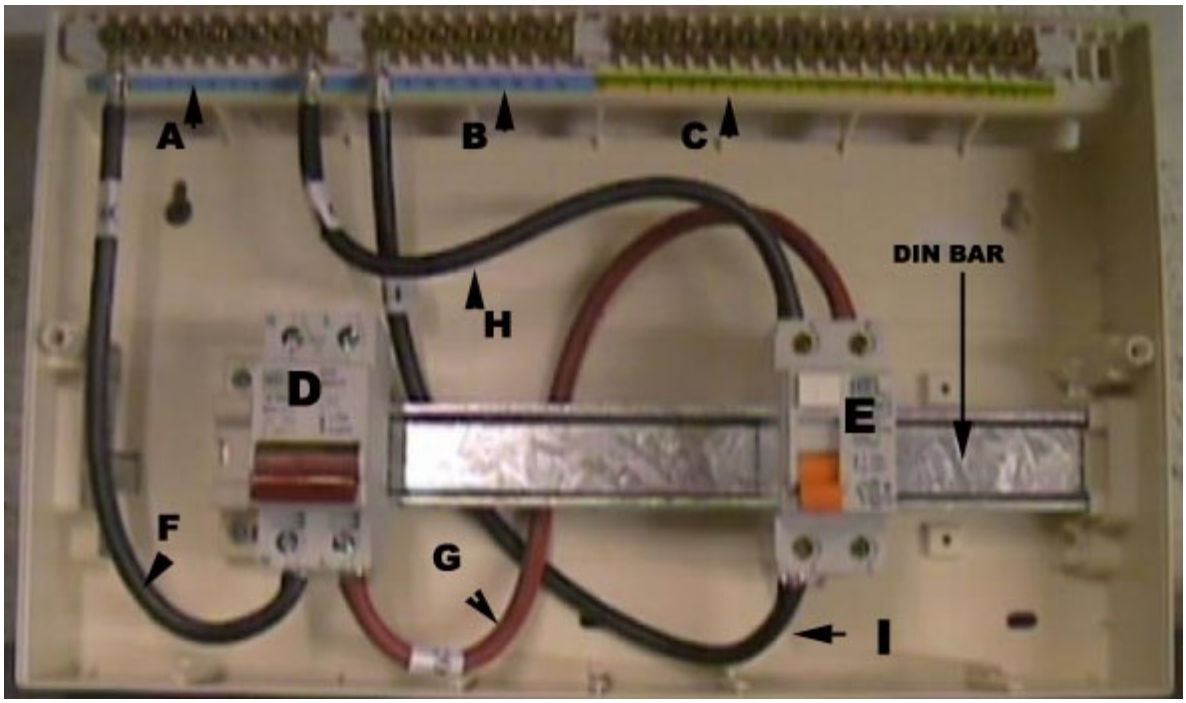
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Consumer Unit

All cables and connections to the consumer unit must be checked and tested by a qualified electrician. Do not attempt removal or replacement unless you are absolutely positive you know what you are doing, and even then the above still applies. It is also an offence to interfere with the seals on the electricity meter.

The modern consumer unit is the centre, or heart, of the wiring system in the home. The unit distributes the electricity, via fuses of one kind or another, to the different circuits in the house. The older fuse wire are being replaced gradually by their modern equivalent, the MCB or miniature circuit breaker.

We will deal with the two main types of consumer unit found in the home today . The first one is a single load fuse board where the power coming in is taken through a double pole switch to a live buss bar. Each fuse, or MCB, is clipped onto a DIN bar and the "teeth" of the buss bar are inserted into the MCB's. The cables to the house circuits are connected to the other side of the MCB's. All of this is explained more thoroughly when we deal with the second type of unit, which is the split load unit. The photographs are of a split load fuse board. The ordinary consumer unit is exactly the same in principle without the RCD.



Just as a matter of interest, DIN stands for Deutsche Industrie Norm and, originating in Germany, is any of a series of technical standards, used Internationally, to designate electrical connections, film speeds and paper sizes. Shown in the consumer unit casing above, it is a metal, pressed bar, to which the MCB's clip. They simply push on via a spring loaded lock at their back.

A split load board is designed for total safety and incorporates an RCD (Residual Current Device, shown as **E** in the picture above) as well as the double pole switch (**D**).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The RCD is not just a manually operated isolating switch, but a very sensitive safety device which cuts off in fractions of a second if it senses an earth fault. RCDs can be bought in different current ratings and various sensitivities to current leakage. You will need to check which ratings are appropriate for your home.

As they are very sensitive, it is not practical to fit one RCD to protect the whole house. If a fault develops on one circuit, all circuits would be switched off immediately...This would, most often, leave you in the unnecessary position of having no lights or power. Because of this it actually contravenes the most recent (16th Edition) wiring regulations. This is easily prevented by using an RCD in conjunction with a main, double pole isolating switch so that it protects only some of the more vulnerable circuits. This then becomes a split load consumer unit and is shown above. The key to this photo is..

A: Neutral terminal block for the main isolating switch side of the unit.

B: Neutral terminal block for RCD side of the unit

C: Earth terminal block (takes both sides of unit)

D: Main double pole isolating switch.

E: Generally 80 - 100 Amp RCD with 100mA (milliamp) sensitivity.

F: Neutral link cable from Main switch to terminal block

G: Live feed from main switch to RCD.

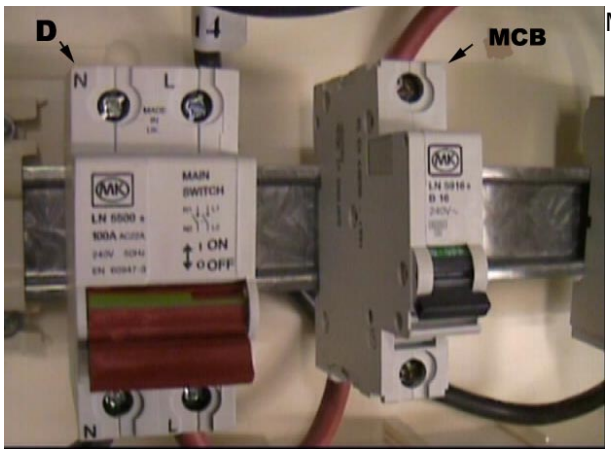
H: Neutral link cable from main terminal block to RCD

I: Neutral link cable from RCD to RCD neutral terminal block.

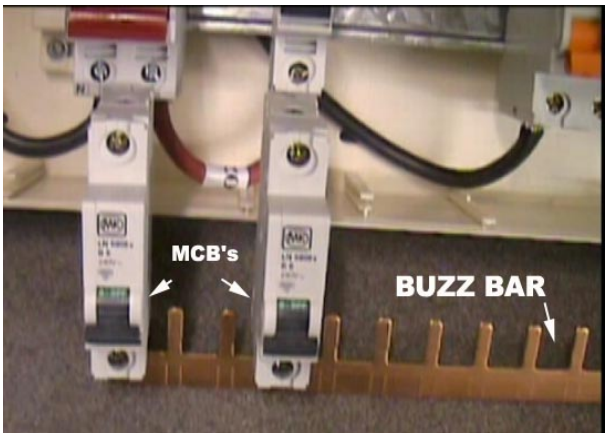
The use of RCDs is necessary, on two occasions, to meet the wiring regulations. The first of these is to protect any socket which may be reasonably expected supply equipment outside the house (Strimmers, lawn mowers, hedge trimmers, pond pumps, sheds, lights etc etc). This rule pretty much covers every single socket in the house so the ring main should be placed on the RCD protected side of the consumer unit.

The second condition applies to any circuits where an earth fault current is not sufficient to blow the fuse, or trip the switch, in the designated time allowance made in the regulations. This generally applies to higher Amp rated appliances (showers, cookers etc) but it should always be checked with an electrician as to which circuits need to be placed on the RCD side of the consumer unit.

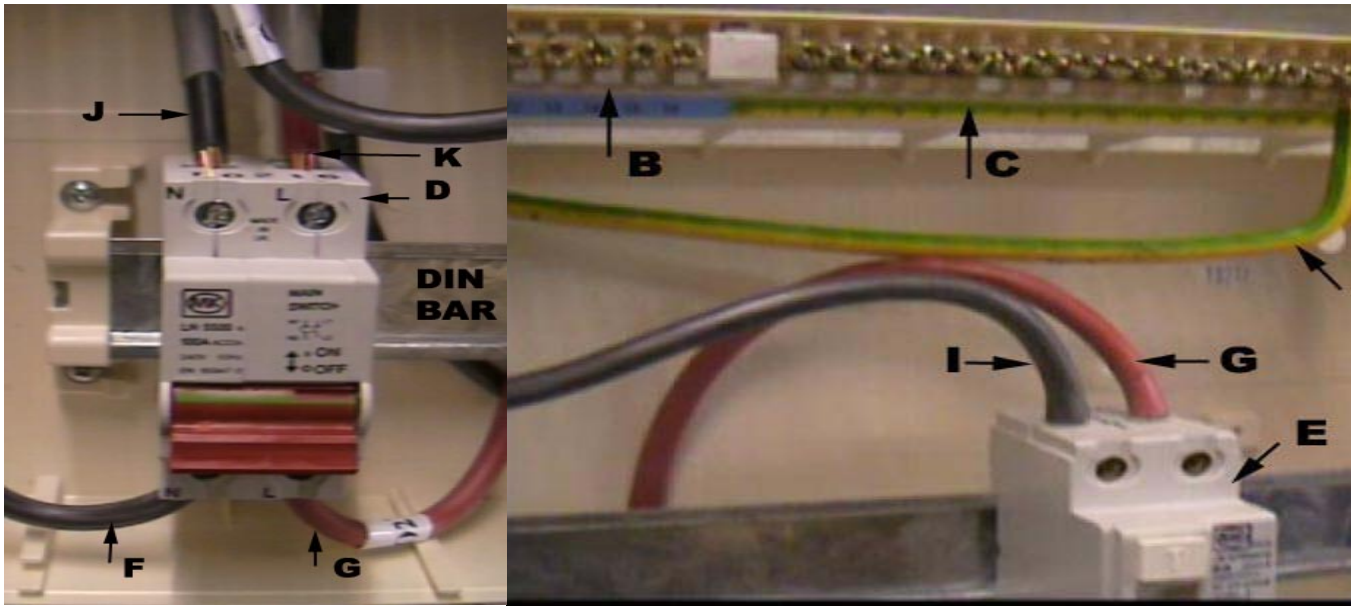
The Current ratings which MCBs are designated to deal with are now conforming to the international equivalent of our old imperial ratings. This standard is called the Renard current rating and supercedes the imperial ratings as far as MCBs are concerned. A 5 amp fuse can be replaced with a 6 amp MCB. A 15 amp fuse becomes a 16 amp MCB, a 20 amp fuse can be a 20 amp MCB, 30 amp fuse = 32 amp MCB and a 45 amp fuse must now be a 40 amp MCB.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

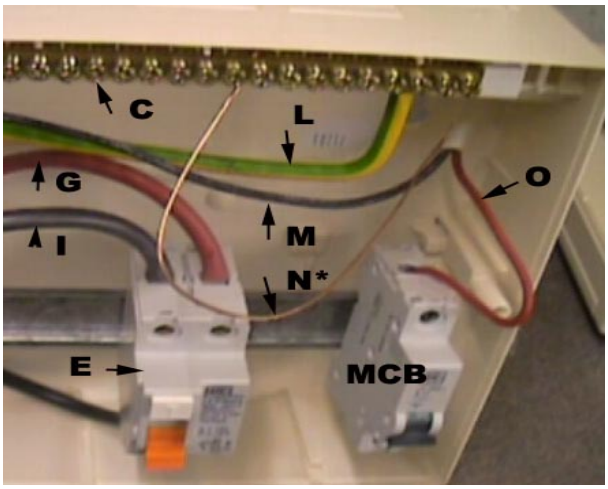


Top left shows the mains double pole isolating switch and an MCB clipped into place on the DIN bar. Top right shows two MCBs and the Buss bar. When the MCBs are clipped onto the DIN bar, the Buss bar is inserted into the live terminal at the bottom of the MCB. When screwed tight this gives live feed to all the MCBs.



Top left shows the live (**K**) and neutral (**J**) coming into the main double pole switch from the meter. These cables are called tails, and in this instance, with this type of unit, are 16mm cables. This will vary and you should always check with a qualified electrician. Top left shows the earth cable from the meter (**L**). This screws into the earth terminal block.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Top left shows how a circuit cable is introduced to the unit. In this case it is a 2.5mm cable for the ring main. The live (**O**) is fixed into the top of an MCB on the RCD side of the unit, while the neutral (**M**) goes to the RCD neutral terminal block. The earth (**N***) (which has been left unsheathed for clarity). Each circuit cable is fed into the consumer unit and connected to an MCB of the appropriate rating.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Putting up coving

preparing for putting up coving - cutting cornice moulding

There's no real 'correct' place in a room to start putting up a coving, if possible, start with a simple corner where the wall is longer than one length of coving. Leave the fiddley areas around chimney breast until you've got into the swing of it.

If using powder adhesive, mix some in accordance with the instructions - don't mix too much as it will only be usable for 20 to 30 minutes.

Cut the first mitre joint(s), when one end of the coving is to be a straight joint, always check it for damage and trim straight if necessary. On plaster coving dampen the edges which will be fit to the wall and ceiling. Dampen the area of the wall and ceiling (this will help ensure good adhesion).

Evenly spread some adhesive along the top and bottom edges of the coving where it will be in contact with the wall and ceiling.

Position the length of coving along the marked line and with the mitre in the corner. Press the coving into place, gently pressing along the length of the coving to ensure that the adhesive is spread evenly. If the ceiling or wall is not straight, do not push hard where there is a large gap, the moulding will relax reducing adhesion.

When putting up long pieces of coving, it may begin to sag before the adhesive has set. If this happens, insert one or two nails into the wall under the bottom edge of the moulding to temporarily support it - after the adhesive has set, the nails can be removed and the holes filled. It's sometimes necessary to put a couple of nails in the ceiling to stop the moulding 'rolling' forward, again, remove these after the adhesive has set and fill the holes.

Heavy plaster coving may need to be fixed with screws anyway. With the coving held in position without adhesive, carefully drill through the coving at about 1 metre spacing and into the wall. Countersink the holes in the coving, and fit wall plugs. Spread on the adhesive, reposition the coving and secure using brass screws. After the adhesive has set, the brass screw heads can be covered using filler.

Surplus adhesive pushed out of the joint should be scraped off with a pallet knife, use the surplus to fill in any gap visible. Clean off the residue with a damp sponge or cloth.

Continue to cut lengths of coving and put up working around the room carefully lining up each new piece with the adjacent piece.

After the first length goes up, each piece will have at least one joint, be it straight or mitre, put a blob of adhesive on the end so that the lengths are bonded end to end.

Preparation for putting up coving

cutting cornice moulding - putting up coving

Coving is fairly easy to put up given a planned approach, patterned cornice is harder to put up because of the need to match the pattern at corners.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Always read any manufacturers instructions supplied with the coving, while the following may be more comprehensive than most manufacturers instructions, there may be specific considerations particular to the coving you have purchased.

When putting up coving, it's worth while working from a stable platform, you'll have enough to concentrate on putting up the coving, without worrying about where you are going to put your feet.

As coving needs to be stuck to firm, sound surfaces, all wallpaper, emulsion paint, distemper and loose plaster need to be removed from both the wall and ceiling - so try to fit coving before you redecorate the room.

Read the instructions (if any) supplied with the coving, this should give you the distance on the wall and ceiling for the edge from the corner. If there are no instructions, cut off a small length of the coving (about 100 mm (4 inches)) and use this against a corner to determine the distances.

Having removed all wallpaper and unsound surface from the ceiling and wall along the line of the coving, use the distances from the corner to mark the wall and ceiling with a pencil to indicate the edges - mark on both sides of each corner.

Put up a string line between corner marks and use rule to check the distance along the line between line and corner to check for variation. With most coving, variations upto about 3 mm can be accommodated by the adhesive, but if the distance between line and corner is less than the coving distance, you'll either have to trim the coving edge or adjust the line down on both sides of the corner.

Don't worry too much about getting the line level, it's more important to get the line parallel to the ceiling and wall.

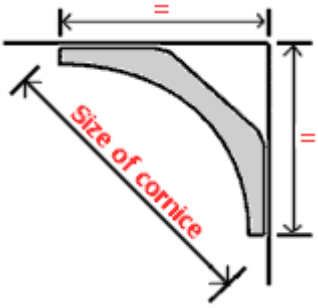
Having gone completely around the room, marking both ceiling and wall corners, replace the string on each edge, mark the wall/ceiling at regular points along the line, remove the string and join up the marked points using a straight edge.

Within the marked area, use a sharp knife to roughen the surfaces of the wall and ceiling with criss-cross scratches to provide a key for the adhesive. Use a clean brush to remove any dust.

Cornices and Coving - general

What is the difference between Coving and a Cornice ? Cornice is the generic term, coving has uniform profile, cornice includes corner mouldings with patterned faces.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Cornices are simple ways to finish off the look of a room and do not require any special skills to erect. Their use is especially useful when a new stud wall has been erected or a ceiling has been replaced, fitting cornice will remove the need to undertake detailed finishing of the corner where the wall and ceiling meet.

Cornice comes in a range of materials:

• Plaster	heavy, easy to damage expensive often left unpainted, this needs precautions to avoid messy hand marks when being erected can be painted with water or oil based paint
• Paper Covered Gypsum or Plaster	medium weight, fairly robust can be painted with water or oil based paint
• Polyurethane	light, robust available ready coloured and patterned (such as wood effect) can be painted with water or oil based paint
• Expanded Polystyrene	light, easy to damage, cheap has the normal polystyrene bubble surface finish can be painted with water based paint (emulsion)
• Timber	light, flexible and easy to use tends to be small finishing strip easy to cut to shape can be varnished or painted - best not to leave untreated as it can discolour unevenly

Cornice also comes in a variety of sizes, it is often 'equal/equal', i.e. the edges are the same distance from the corner on both the wall and ceiling. The size quoted on most packages is the actual width of the cornice - a 120 mm, equal/equal cornice will come down the wall approx. 82 mm.

Choose the size to suit the room, as a general rule, larger rooms look much better with a larger cornice.

Coving is available in various uniform profiles and cornice come with various patterned faces.

Coving, with their uniform profile along the length, are easier to fit and tend to look better in modern properties (unless the general theme of the architecture or decoration is 'old fashion').

Some patterned cornices will add a 'period' feel to a room, but this can easily be spoilt by miss matching of the pattern at corners. The art of putting up patterned cornices involves getting the pattern at all corners to appear as natural points for turning. If possible, all internal corners should turn at the same part of the pattern, you cannot just put up a length hoping that the next length will reach the corn at a convenient point in the pattern. Erecting patterned cornices can be undertaken by the diy'er but care and time are necessary to give a professional looking finish.

Cornice adhesives

The choice of adhesive depends upon the material of the cornice, the options are:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Plaster powder adhesive	Needs to be mixed with water before use. Any left unused needs to be disposed of. Suitable for plaster and paper covered gypsum/plaster.
Ready mixed plaster adhesive	Supplied in tubs ready for use. At the end of erecting cornice, just fit the lid to keep the adhesive for future use. Suitable for plaster and paper covered gypsum/plaster.
Polystyrene adhesive	Supplied in tubs ready for use. At the end of erecting cornice, just fit the lid to keep the adhesive for future use. Suitable for Polystyrene cornice.
General gap filling adhesive (NoNails and similar)	Supplied in cartridges for gun application. Suitable for Polyurethane cornices, those without solvents might be suitable for Polystyrene cornice - but check on a small piece. Ideal for timber cornice as it avoids the need for nails

The choice between plaster powder and ready mixed plaster adhesives is ready a personal one, although using ready mixed should reduce wastage (although it is generally more expensive) and ensure a consistent consistency.

Cornice and coving corners

preparing for putting up coving - putting up coving

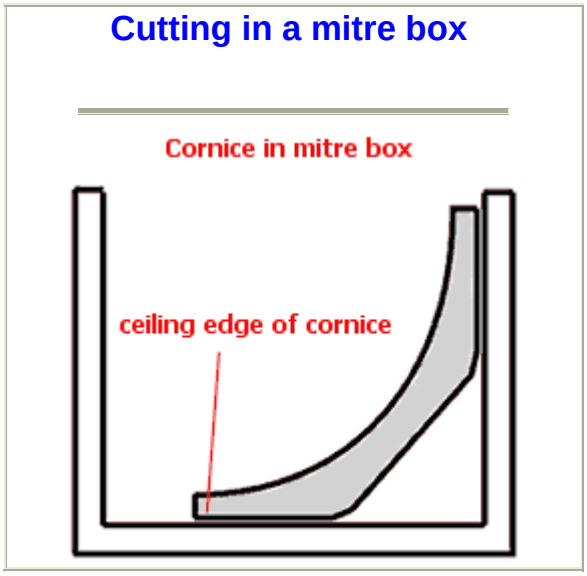
Ready made corners

Most ranges of cornice and coving include preformed corners. With coving these are usually simply preformed internal and external corners. Corners for patterned cornices are often features in there own right so that the lengths of cornice simply butt squarely upto the corner piece - this has the advantage that there's no need to match up the pattern at the corner.

With simple coving, it's fairly easy to cut your own mitres as detailed below.

Cutting coving moulding

Cutting in a mitre box



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Use a mitre box to accurately cut the corner mitres, make sure that the mitre box is large enough so that the two edges of the coving can fit flat against the bottom and side of the box (see right).

When using the mite box, always place the ceiling edge of each piece of coving at the bottom of the box, with the wall edge against the side towards you - on lengths requiring mitres at both ends, it helps to pencil a mark on the ceiling edge of the coving to ease identifying it when each end is cut.

Transfer wall measurements to the wall edge of the coving and carefully line this up in the mitre box.

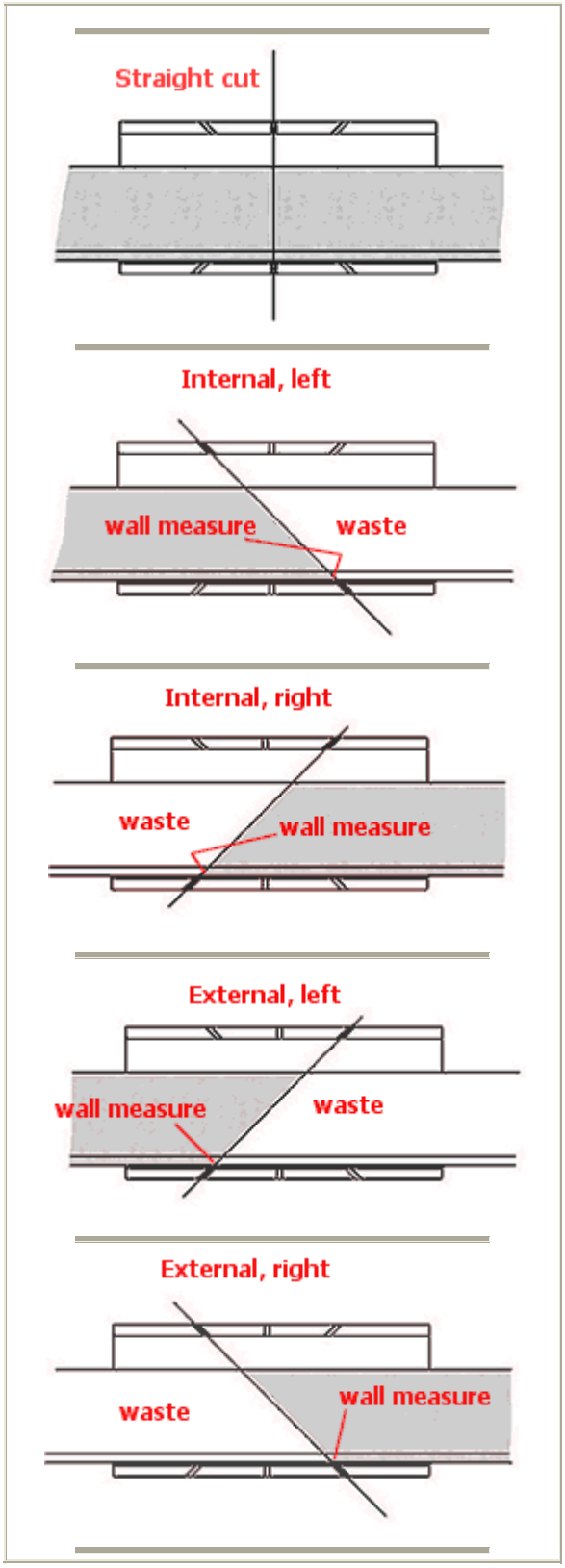
Support lengths of plaster and gypsum cornice/coving while they are being sawn - they have some degree of flexibility but can easily break under their own weight.

Take care that you are cutting the angle in the right direction, it's very easy to get confused.

The five basic cuts are shown to the right.

Use a fine toothed saw to cut the cornice/coving .

Smooth off the cut ends using fine glass paper.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Corrugated sheet roofing

Corrugated sheet roofing material is widely available and easy to use.

1. Corrugations should run in a straight line between the highest and lowest points, and at a right angle to the purlins (the intermediate supports).
2. The overlaps (ends and sides) depends upon the sloop of the roof (see below).
3. Purlin spacing should suit the end laps required for the size of sheet to be used.
4. Sheets should be laid so that the side overlaps are directed away from the prevailing wind.
5. All purlins should be in one plane and parallel to each other. They should be properly anchored to the supporting superstructure.
6. Ends of all sheets should be supported by purlins. The free overhang at the eaves should not exceed 300 mm.
7. 8 mm diameter (min) hook bolts, crank bolts or coach screws, should be inserted through 10 mm diameter drilled holes.- NEVER PUNCHED - in the crown of the corrugations.

Nuts or screws should be tightened lightly at first, and then tightened again when a dozen or more sheets have been laid. At intermediate purlins, they should not be tightened in an attempt to make the sheet rest on the purlins.

A cat-ladder or roof board should always be used when working on a roof for safety of the person and to avoid damage to the roofing material.

Installation of corrugated roof sheeting

These notes are intended to cover the use and installation of corrugated roof sheets such as PVC, other plastics and bitumen fibre sheets. Although very different as materials and where they are used, they do have similar properties regarding flexibility and weight. One advantage of these corrugated materials is that it is far more rigid than a flat sheet of a similar type and thickness. This enables considerable savings in both weight and cost, it also makes the sheet relatively easy to handle. Generally all these types of material can be used either as roofing or vertical cladding.

Most of these sheeting tends to be susceptible to condensation when used as cladding for outhouses etc. - being relatively thin they tend to have low thermal insulation properties. Condensation will be reduced if the interior of the structure is well ventilated.

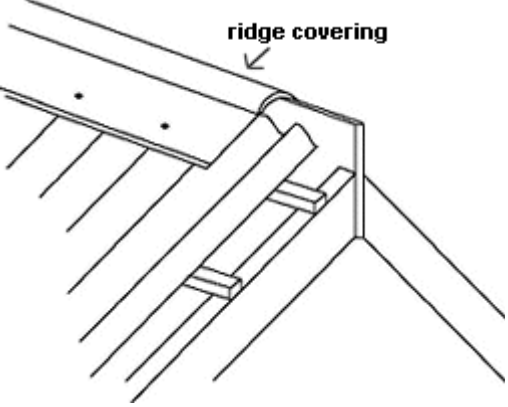
Being thin sheeting, most types will act as a 'drum skin' when it rains. The sheets can also become heated by direct sunlight and this heating can be radiated into the building making it very uncomfortable in hot weather. A false ceiling suspended under the roof can reduce both of these problems, the void between the roofing and ceiling must be adequately ventilated to avoid excessive temperatures (especially important where plastic roof sheeting is used) and to minimise condensation. Choosing light colour sheets (or, where the material allows this, painting them white/silver) will reduce the internal heating effect.

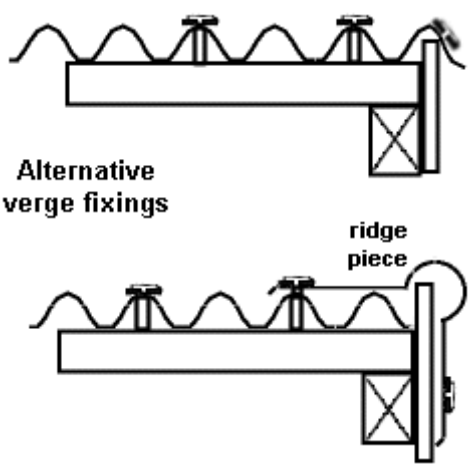
PVC has a service temperature range of -20°C - +60°C. Care must be taken to ensure that it is not used in situations where the maximum service temperature could be exceeded. As such it is not recommended for use in situations where a false ceiling is to be erected below the rooflight, as this will cause heat build up in the sheet, exceeding the maximum temperature of +60°C which may lead to discoloration or distortion of the sheet.

Storing before use

Plastic and bitumen sheets must not be stored in a stack in direct sunlight, as solar heating will cause the sheets in the centre of the stack to distort. If sheets have to be left outside prior to installation, they should be covered completely by an opaque, light-coloured tarpaulin.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





Avoid working with sheet materials in windy conditions, even in light breezes it may be necessary to temporarily weight the sheets while working with them - this is especially relevant to light weight plastic sheets.

The underlying roof structure

The roof structure will comprise rafters and purlins. The rafters take the full weight of the roof material plus any 'environmental build-up' (such as snow) and anyone working on the roof.

The pitch of the roof will determine the amount of end overlap necessary. In order to ensure that this can be achieved and to leave a neat appearance, the sheets should first be arranged loose on the roof. The end and side overlaps are a 'minimum', to avoid unnecessary cutting of sheets, the overlaps can be increased to hide any excess. At the same time, the positions of fixing screws and any saw cuts which may be needed can be marked on the sheets.

The spacing of the purlins needs to be arranged to suit the roofing while the rafters can be spaced as appropriate to take into account the overall weight. The spacing of the purlins, the end and side overlaps of the sheets depends on the angle of the roof - for most types of sheet, the following are good guidelines but check with the manufacturers of any particular type of sheet:

Roof pitch	Support	End overlap	Side overlap
1 in 12 to 1 in 6 (5 to 10 degrees)	Decking or close boarding	300mm	2 corrugations
1 in 6 to 1 in 4 (10 to 15 degrees)	Purlins at 450mm spacing	200mm	1 corrugation
1 in 4 or less (over 15 degrees)	Purlins at 600mm spacing	170mm	1 corrugation

Purlins must be at the correct centres and size for the material and slope of the roof. The position of purlins at the upper and lower ends of the roof and at the sheet overlaps are the critical points, there must be purlin where you need to nail. Having determined the upper, lower and overlap purlins, evenly space the remaining purlins in between. As an aid to setting out the purlins, use a timber spacer to keep the purlins square to the eaves. It is important that the maximum support centres given for the type of corrugated sheet being used are not exceeded between purlins.

Laying the sheets

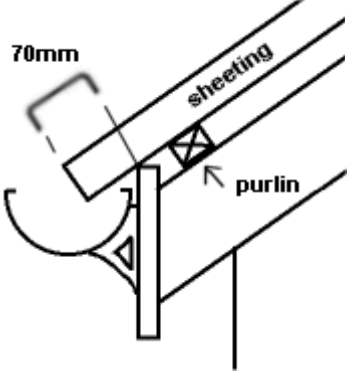
Commence fixing sheets at the lower edge of the roof at the opposite end to the prevailing winds. Stagger the sheets using a half sheet to start the second row.

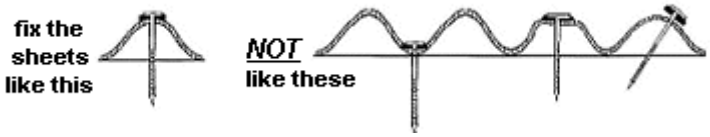
Fixing ridges

Commence fixing ridges at the opposite end of the roof to the prevailing winds. Overlaps should be about 125mm.

Verges (the ends of the roof)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





To prevent the ingress of water from driving rain, the sheets should be arranged to overhang the verge (the ends of the roof) by approximately one corrugation. Do not overhang the fascia by more than 70mm. If larger verge or fascia overlaps are used, the wind will tend to catch this area and wind damage to the roof may result.

Verges should be formed by either nailing the final corrugation over a raised barge board or using a ridge piece to lay over the verge.

Fixing gutters

Do not overhang the fascia by more than 70mm. Draughts may be reduced by using foam filler pieces at the eves, but don't exclude all ventilation.

Cutting

Always follow the manufacturers guidelines for cutting the sheets. If cutting PVC is necessary, use a fine toothed hand saw or circular power saw - practice on a scrap piece of material to ensure that the material can be successfully cut. Lubricate with a general purpose lubricating oil to prevent binding.

Corrugated material is supplied in various lengths, so cutting can often be avoided by selecting the appropriate size (or a number of sizes) at the planning stage - you will probably need to cut alternative ends sheets lengthways so that the vertical joins are staggered. Where cutting across a sheet is necessary, lay one sheet on top of the sheet to be cut to mark the cutting line. If it has to be cut, to fit around projections for example, use a fine toothed hand saw at a shallow angle, supporting the sheet to minimise vibration. The sheet may be cut by sandwiching it between the others, leaving the part to be removed projecting from the stack.

Some plastics may crack or split if sawn or drilled in cold weather, so leave the sheets in a warm room for 2 or 3 hours prior to sawing or drilling.

Try to arrange that cut edges are concealed by the overlap of adjacent sheets.

Drilling

It is generally best (although more awkward) to drill sheets in-stitu so that holes line up with the purlins and holes in overlapping sheets line up. To accommodate thermal movement, the fixing holes should be drilled about 5mm greater in diameter than the fixing shank for sheet lengths up to 2m and an additional 2mm per additional metre length of sheet. Fixings should only be positioned on the crown of ridges when mounted and should always be used with a sealing washer which will normally eliminate rainwater seepage. Specially designed spacers which prevent profile distortion are available to remove the chance of inadvertent overtightening.

Drill over a firm support using light pressure with a hand drill or slow speed power drill fitted with a suitable drill bit. Make sure the drill bit does the cutting, this should avoid splitting of the material.

Fixing

Nail through the crown of the corrugations into the purlins or decking. Nail every corrugation at the sheet overlaps and at the top and bottom of the slope. Nail centres may be reduced to alternative corrugation at immediate purlins. So you don't 'lose' the purlins on opaque sheeting, mark the position of them on the top side of each sheet as you lay it, use a straight edge or taut line to position the fixings across the sheet. Do not nail the top row or underlapping side fixings until the overlapping sheets are in place.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Lap sheets away from the prevailing wind and use Sealing Tape to prevent ingress of dust and dirt. Use Wall Flashing at the top of the slope in lean-to situations or a ridge piece as appropriate. Use Foam Filler at the bottom of the slope to prevent draughts but don't forget to ensure adequate ventilation. Eaves fillers used at other purlin positions are useful in preventing 'roof-chatter', a common problem with lightweight roof coverings. The cladding should be supported at maximum centres as specified by the manufacturer - and fixings should be a minimum of 50mm from sheet ends.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

CREATE A TOWN GARDEN AND PATIO

SKILL LEVEL

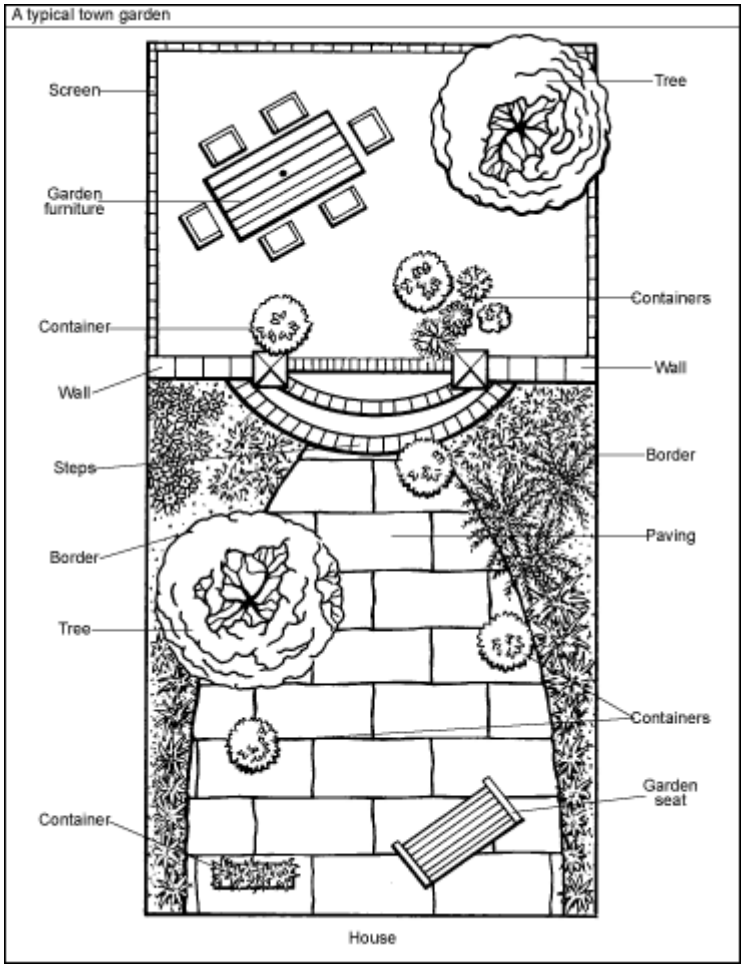
INTRODUCTION

With careful planting and design, you can transform even the tiniest of town plots into a delightful garden.

In gardening, small really is beautiful! Limited space means that you can garden as intensively as you like without devoting hours of your leisure time to such chores as weeding.

Even if you plan to garden on a tight budget, the small dimensions will allow you to develop the most attractive planting schemes without breaking the bank. Every plant you select can be of the very best - because you will need so few - and if you take care with your design, you will be amazed at what superb results you can achieve.

Even if the plot runs to no more than a few square metres it will still have potential for a charming and stylish garden.



2 - Planning the work

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Even though the dimensions are small, incorporate an open, preferably paved, area where seating or dining furniture is installed. Avoid overcrowding this area with too much garden furniture, but be ready to furnish it with plenty of attractive plants in containers.

Create an illusion of space
Blind arches, screens which suggest more behind - even when there isn't - a vista with an object at its end and criss-crossing paths.

Make your garden look larger
By adjusting perspective you can make your lawn or paved area wider at the front than at the back. This will have the effect of pushing the horizon further away. Accentuate this distortion by placing tall plants or objects on either side, running down to shorter ones at the centre.

Include a secret garden
If there's room, make your garden harbour exciting secrets: a little arbour, concealed behind a screen; a tiny half concealed pool; an old statue lost among the foliage.

Think of the scale
Your design can be as grand as you like, but remember to scale everything down to the size of your garden. Large trees or huge containers may not be practicable, but one or two prominent features, making a bold statement, are likely to be more effective than masses of small, fussy ones.

Ring the changes
In a tiny garden, it is easy and inexpensive to make major changes. Use this facility as often as you like, mixing and matching plants as well as altering the main elements of your design.

Balance your plants
Planting can be as dense as you like - crowded, even - but take care to banish thuggish varieties that smother their neighbours. Think of scale, when planting, and avoid outlandish sized plants unless you wish to make an especially bold statement.

A large mirror, carefully placed, will give the impression of a larger garden. To make this trick work, have the mirror partially concealed, or at least fixed so that its edges are not obvious.

3 - Planting principles

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Plants that fail to provide good foliage, flower, fruit or outline must be rejected. Select only the best varieties and be ruthless in discarding anything that fails to perform.

Try to give an impression of lushness and verdure. Select some plants purely for their foliage, even if they seem too large for the site. The evergreen Aucuba can help, especially if your garden is partly shaded. Its big leaves would make a fine contrast with the tiny leaflets of honeysuckle (Lonicera nitida 'Baggesen's Gold'). For spring, consider Spiraea 'Goldflame' for its unique orange foliage, and contrast it with the blue-green grass, blue fescue (Festuca glauca).

Remember that the aim is for year-round interest. Ensure that you select something for every season and include bulbs, alpines, plants to squeeze between paving slabs, speedy annuals and biennials.

You don't have to own a tiny garden to take advantage of these ideas. Even if you own a larger outdoor area, you can still apply these principles to your patio, to a small terrace, or perhaps an outdoor seating area.

4 - Planting the bones

Your design may well include such structures as steps, walls, trellis, banks and terraced levels. You can also create a sense of structure using plants, either formally as clipped hedges, or informally, purely for their outline.

Box
(Buxus sempervirens) Makes one of the best 'shaping' materials for a small garden because it is easy to keep to size. You can use it as hedging material, as single plants clipped into particular shapes, or even allow it to grow as a small, free-standing tree. A single annual trim, in midsummer, will keep it to the desired dimensions. Alternative evergreens include yew (Taxus), holly (Ilex), privet (Ligustrum) and hedging honeysuckle (Lonicera nitida).

Topiary
If you want to clip evergreens into specific shapes, use a frame or a mould made of wire netting and encourage the plants to grow through the shape you have made. Each year, trim the plants back to the desired shape.

Shrubs
When creating informal outline or structure, remember that certain shrubs will provide a distinctive winter and summer outline. The corkscrew hazel (Corylus avellana 'Contorta') is

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

a fine example. Standard weeping dwarf willows, such as weeping pussy willow (Salix caprea 'Kilmarnock') are also useful for outline, as are standard roses or tall upright conifers.

5 - Using structures to enhance the garden's outline

Screens, arches or walls, made of trellis, timber, brick or stone will all help to develop a solid outline, but be sure to furnish such structures with plenty of plant material. Use clematis, honeysuckle (Lonicera), climbing and rambling roses to flesh out the bones of your structures.

Strategically placed containers, statues or even gazebos will also help to develop a style. These can be as formal as you like, or could be as simple as a strawberry planter, furnished with edible strawberry plants, or with the pink-flowered ornamental strawberry, 'Pink Panda'.

A garden should look great from the window. Try to arrange a sweeping view, or an enticing vista so that your eye is delighted every time you look out. This is especially important outside windows that are in frequent use, for example, kitchens.

6 - Filling in

Once your structure planting is in place, you can begin to fill up the spaces in between. Infill planting allows maximum scope for interesting colour schemes, for changes in mood and for interesting contrasts in texture of foliage.

Compose for colour. In a small area, colour discipline will help you to achieve the desired effect. Complicated mixtures of colour seldom work, but if you plant with care, you can effect a gradual colour change as you move around the plot.

Here are some colour ideas:

- **Gold, yellow, white**
  Mock orange (Philadelphus coronarius 'Aureus') with Spiraea 'Goldflame' and Aucuba 'Sulphurea'. Honeysuckle (Lonicera 'Baggesen's Gold') with pieris and white or yellow roses. Underplanting could include ox-eye daisy (Leucanthemum), day lily (Hemerocallis) and golden or variegated plantain lily (Hosta). Include Euryops pectinatus for a splash of summer gold.
- **Cool hues**
  Mexican orange blossom (Choisya ternata - not 'Sundance'), for foliage and white flowers, planted with African lillies (Agapanthus). Bellflowers (Campanula) planted among shrubby hebe, myrtles

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

(Myrtus) or lavenders (Lavandula). Plantain lily (blue-leaved hosta), hardy sage (Salvia) and fleabane (Erigerons) in soft colours.

- **Warmer pinks**
  Rhododendrons - practically all of them. 'Flower Carpet' roses with ice plant (Sedum spectabile) for later colour. Anisodontea with shrubby bindweed (Convolvulus cneorum).

Colour discipline is less crucial in winter and early spring when almost anything that flowers will be welcome. Always include plenty of bulbs, but avoid over-sized daffodils (Narcissus), since they may look out of scale and will certainly look untidy after flowering. Smaller daffodils will do a better job in a tiny garden.

7 - Planning for impact

Once the main planting is complete, you may want to consider adding a few special highlights to your garden. The purpose of such plants is to provide something extra - something that will lift your spirits at certain times of the year. Usually these will be flowers, but there are other aspects, such as fruits or seed capsules. Site your highlight plants where they will carry maximum impact.

Here are some suggestions:

- **Startling bloomers**
  Rhododendrons and azaleas are obvious choices, covered as they are with gorgeous blooms in spring. However, camellias offer better value, since their off season foliage is so glossy and beautiful. Look for the gorgeous but very hardy semi-double pink variety Camellia 'Donation'.
- **Fragrance**
  Perfume can carry as big an impact as colour. Mock orange (Philadelphus) is bewitching, especially in a small space.

Choose roses for scent too: 'Flower Carpet White' has gentle fragrance, for example, but 'Fragrant Cloud' and the climber 'Zephirine Drouhin' are richly scented. Lavender (Lavandula) is both fragrant and aromatic, and makes a fine edging for a whole assortment of herbs including sage, rosemary, thyme, chives and mint - all of which smell wonderful.

- **Leafy**
  Extra foliage, in summer, comes from the larger plantain lily (Hosta), lady's mantle (Alchemilla mollis) and the felty-leaved lamb's ears (Stachys 'Silver Carpet'). Ice plant (Sedum spectabile) has fresh green, succulent foliage from April onwards, until the flowers appear in late summer. Brightest foliage of all is to be found on the Japanese willow

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

variety 'Hakuro Nishiki'. The leaves are a mix of pink, pure white and green, but scorch very badly if exposed to sunlight.

- **Architectural**
  Short-term architecture can be fun! Try placing an outsized plant - a mullein (Verbascum), perhaps, or rhubarb, like Rheum palmatum - in the foreground of your planting. It will be so out of scale as to look out of place, but the dramatic impact is considerable.

Grow mint in a container, to prevent it from becoming too invasive. Cut it back regularly, to keep it young and tender.

8 - Groundwork

To make a full and valuable contribution in a tiny garden, every plant needs to be in the peak of health.

Make sure border soil is weed-free, fertile and carries a high level of organic matter. Install a compost bin, if you have space, and compost all rottable garden refuse, including prunings, dead flowers etc, as well as vegetable kitchen waste. Spread compost back on the garden as soon as it has rotted down.

Containers
Most small gardens have lots of containers planted up, as well as borders. In some cases, there may not even be soil, and the entire planting will therefore be containerised.

Ensuring year-round interest
Include at least three plants from each section to ensure year-round interest in your garden.

- **Winter**
  Weeping pussy willow (Salix caprea 'Kilmarnock'). Gaultheria mucronata (syn. Pernettya). Lenten rose (Helleborus orientalis). Snowdrops (Galanthus). Hebe. Hazel (Corylus contorta).
- **Spring**
  Camellia Williamsii. Mock orange (Philadelphus). Pieris 'Forest Flame'. Azalea. Rhododendron yakushimanum. Rock cress (Arabis) and Aubrieta. Spurge (Euphorbia). Tulips (Tulipa). White daffodils (Narcissus).
- **Summer**
  Roses (Rosa). Euryopspectinatus. St John's wort (Hypericum). Fuchsias. Shrubby bindweed (Convolvulus cneorum). Lavender (Lavandula). Lady's mantle (Alchemilla mollis). African lily (Agapanthus). Day lily (Hemerocallis). Plantain lily (Hosta).
- **Autumn**
  Firethorn (Pyracantha). Anisodontea. Autumn

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

crocus (Colchicum). Japanese Azalea - deciduous. Maples (Acer). Hardy Fuchsias. Euonymus 'Red Cascade'.

- **Great all year**
  Mexican orange blossom (Choisya). Pieris. Wormwood (Artemisia 'Powis Castle'). Box (Buxus sempervirens). Myrtle (Myrtus). Stranvaesia 'Palette'. Conifers. Grasses and sedges.

9 - Plant lists

ALPINES PLANTS	AVAILABILITY
Alpines	March - May

AZALEAS PLANTS	AVAILABILITY
Japanese Azalea	February - May

CAMELLIAS PLANTS	AVAILABILITY
Camellias	February - April

CLIMBERS PLANTS	AVAILABILITY
Clematis	February-September
Jasmine, summer	May - August
Jasmine, winter	November - April
Passion flower (Passiflora)	May - August
Perennial nightshade (Solanum)	May - August
Sollya heterophylla	June - July

CONIFERS PLANTS	AVAILABILITY
Arbor-vitae (Thuja Aurea Nana)	March - June
Arbor-vitae (Thuja Danica)	March - June
Arbor-vitae (Thuja Rhelngold)	March - June
Arbor-vitae (Thuja Sunkist)	March - June
False Cypress (Cham Boulevard)	March - June
False Cypress (Cham Broomhills Gold)	March - June

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

False Cypress (Cham Ellwoods Gold)	March - June
False Cypress (Cham Ellwoods Pillar)	March - June
False Cypress (Cham Golden Pot)	March - June
False Cypress (Cham Goldsport)	March - June
False Cypress (Cham Minima Glauca)	March - June
False Cypress (Cham Silver Threads)	March - June
False Cypress (Cham Snow White)	March - June
False Cypress (Cham Springtime)	March - June
False Cypress (Cham Summer Snow)	March - June
Spruce (Picea alb Conica)	March - June

GRASSES PLANTS	AVAILABILITY
Assorted (including Pampas)	July - August

HERBACEOUS PLANTS	AVAILABILITY
Day lily (Hemerocallis)	May - June
Plantain lily (Hosta)	May - June
Bellflower (Campanula)	April - June
Stonecrop (Sedum)	July - September
Mullein (Verbascum)	May - June
Christmas rose (Helleborus)	February - March
Lady's mantle (Alchemilla)	April - June

HERBS PLANTS	AVAILABILITY
Bronze fennel	May
Chives	March - May
Marjoram	March - May
Mint	March - May
Parsley	March - May
Rosemary	March - May
Sage	March - May
Tarragon	March - May
Thyme	March - May

RHODODENDRONS PLANTS	AVAILABILITY
Dwarf	March - May
Yakushimanum	April - May

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

ROSES PLANTS	AVAILABILITY
Climbing rose	March - August
Climbing patio rose	March - August
Mini standard rose	April - May
Patio rose	May - August
Patio standard rose	April - July
Miniature rose	April - May

SHRUBS PLANTS	AVAILABILITY
Aucuba varieties	October - April
Bottle brush (Callistemon)	June - July
Box (Buxus sempervirens)	March - June
Cabbage palm (Cordyline)	April - May
Californian lilac (Ceanothus)	March - May
Euryops pectinatus	June - July
Firethorn (Pyracantha)	October - May
Gaultheria mucronata (syn. Pernettya)	October - November
Hardy Fuchsia	June - August
Hazel (Corylus contorta)	December - February
Hebe	All year round (depending on variety)
Holly (Ilex)	February - April
Honeysuckle (Lonicera nit Bagessen's Gold)	May - June
Lavender (Lavandula)	February - September
Magnolia	February - April
Mexican orange blossom (Choisya)	April - June
Mock orange (Philadelphus)	April - June
Myrtle (Myrtus)	May - June
Pieris	March - May
Phormium	May - June
Privet (Ligustrum)	May - June
Shrubby bindweed (Convolvulus Cneorum)	April - May
Skimmia	October - December
Spindleberry (Euonymus)	February - July
St John's wort (Hypericum)	March - July
Weeping pussy willow (Salix Caprea 'Kilmarnock') Willow (Salix Hakuro	May - June

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Nishiki 1/4 std)

Wormwood (Artemesia Powis Castle) May - June

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Curing an air lock in a hot water pipe.

(No hot water from the hot tap!)

If no water, or a spluttering supply, comes out of the hot tap when its opened, the likely cause is an air lock.

If you have an automatic washing machine, and have both the hot and cold supplies connected, an effective remedy can be implemented quite easily.

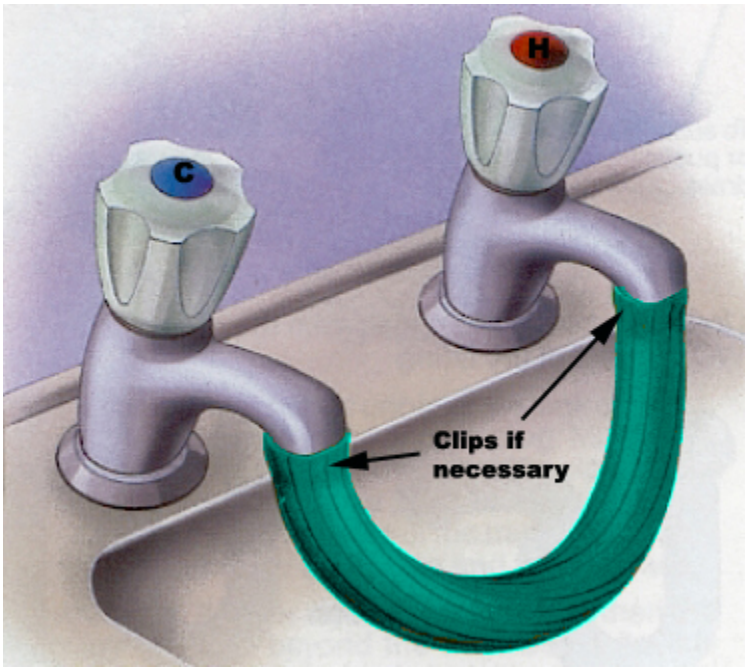
The cold water to least one of the downstairs taps will be connected directly to the mains (this is generally the kitchen sink tap). The washing machine will be connected to this run of cold pipe as it needs mains pressure to work properly. The mains pressure of the cold water is much greater than that of the hot water and we can use this greater pressure to push any air locks back to the hot water storage tank.

Disconnect the cold water hose from the back of the washing machine (Turn the valve off first). Disconnect the hot water hose from the valve on the hot water pipe. (Turn this valve off first also). Now connect the free end of the cold hose, to the free, hot valve. Turn on the hot water valve and then the cold water valve. This will now allow the greater pressure of the cold water to push any air back up the hot water pipe.

Leave both valves open for approximately 30 seconds and then close, cold first. Now check the flow from the hot tap at the kitchen sink and the air should have been dispelled. If not repeat above. If, after 3 attempts, the problem is still there, please contact a plumber from our directory (Locate a specialist). There may be a problem with your system.

If your washing machine only has the cold connected, another way of utilising the higher cold pressure to clear an air lock is by connecting the cold tap to the hot tap. This can be done, in most cases, with a piece of hosepipe and a couple of jubilee clips. Make absolutely sure the connections are sound and do not leave the taps unattended. If you have a mixer tap in the kitchen, the same method can be used, but you will need a longer piece of hose to utilise the cold from the mains tap and the hot from another tap.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



A Further method was sent in by a user, Dave Maynard:

When needing to pass mains cold water pressure across to air locked hot water supply using kitchen mixer taps: Easier than trying to find another tap and having to use a long hose which may, anyway, not fit the shape of some taps. Simpler than playing around with washing machine hoses.

Procedure:
1)Squeeze the single mixer tap outlet so that the palm of your hand covers it firmly.

2) Turn on the hot, then the cold, (this order is important to prevent confined mains pressure from forcing
your hand away from the tap outlet). The cold supply, now unable to exit from the hand blocked tap outlet, will instead flow across to the hot water pipe causing a backflow in the hot water system, clearing the airlock.

Note: If you have a similarly non-mains pressured COLD supply i.e. also fed from a header tank and which also has an airlock: Same as just described but this time you need to use the mains pressured water to purge the non-mains pressured COLD
supply, which, unlike the hot supply, is probably inaccessible from downstairs and therefore nowhere near any mains pressured water.

To do this you firstly need to create a path between the hot water supply and the non-mains pressured cold water supply.

Procedure:
Prior to starting the tap squeezing exercise, and if you have a non-electric shower mixer tap in the upstairs bathroom:

1) Unscrew the showerhead from the pipe
2) Place 2 or 3 layers of plastic bag over the end of the pipe to form a strong membrane

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

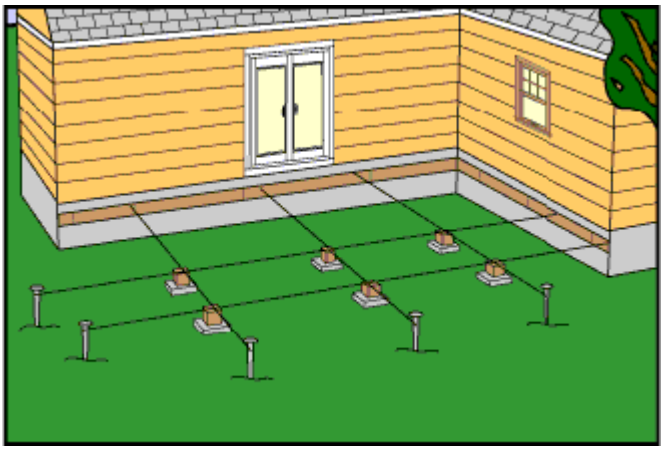
3) Re-screw the shower head with the membrane still in place
4) Go to the header tank and turn ONLY the hot outlet OFF. Leave the cold one ON.
5) Go back to the shower taps and turn both hot and cold ON, with the diverter in the SHOWER position.
6)Go back downstairs and carry out the procedure initially described i.e. using hand pressure over the mixer taps.

The mains pressured water will now back flow up into the hot water system but then flow across to the non-mains pressured cold water system via plastic bag blocked mixer in the bathroom thus clearing any air locks in the non-mains pressured cold supply.
If you don't have a shower mixer as described, but do have separate hot and cold taps e.g. sink taps, then steps 1) to 3) can be replaced by just connecting a hose across the two taps. Step 5) would omit the requirement to set the diverter.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Deck Marking & Layout

OVERVIEW



Introduction

Marking and layout is the third step in building your deck. The layout is possibly the most important step after you have made the decision to proceed. The placement of the footings is critical to the location of the support posts, which will ultimately make your deck a safe and enjoyable place to enjoy the outdoors, and keep it from falling down!

Even though there is room for error in measuring the location of the footings, success comes from striving for accuracy--measure to the 1/8th of an inch. This layout is simple and can easily be completed by any level of DIYer. Mistakes can be corrected at a later part of the project if necessary. These mistakes however, will add time and money to your deck project if left uncorrected.

To set up for this task, gather your drawings, tape measure, marking tools, level, all of your equipment, and put them on a site worktable for easy reference and a place to find them. A paperweight of tools and other heavy objects will keep the plans in place if the wind begins to blow.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

Time to complete this project depends on the size of the deck and the level of help available, the times listed here are for two people on a 10'x 30' deck with the house defining two sides of the deck.

- Beginner - 3 hours
- Intermediate - 2 hours
- Advanced - 1 hours

CAUTION Check for hidden utility lines before you start.

CAUTION Check local code restrictions to be sure that you comply with their regulations on deck height off the ground and limitations on the amount of lot coverage allowed.

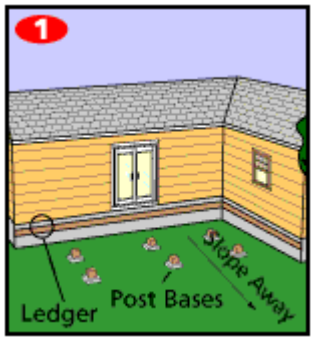
COMMON MISTAKE Rushing the layout can cause the deck to be built out of "square" which will make the final placement of deck boards and hand railings extremely difficult at the end of the project.

HELPFUL TIP A helper who understands the overall design and layout process will be invaluable in holding the dummy end of the tape and helping to line up marking strings.

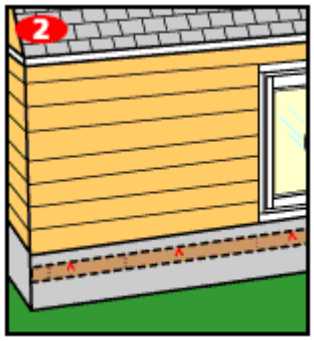
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

STEPS

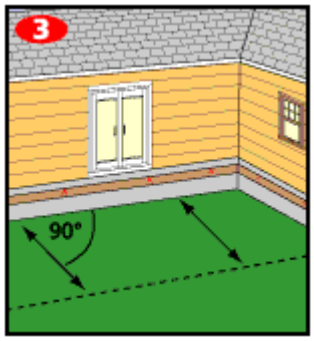
1. Your first measurements and marking indicate where your deck connects to the house. After the height of the deck is marked, move away from the house to locate the remaining deck supports. Your measurements should take into account that the deck is an outdoor extension of your indoor living space, and needs to slope away from the house to allow any water that collects on the deck to drain away from the house and the foundation of your home.



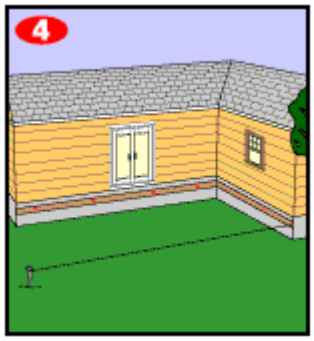
2. Begin by marking the top of the ledger, the structural deck support that will attach to your house, in several locations. Use your level to verify that the top of the ledger matches your structural drawing. Keep in mind that if your finished deck surface is 2x material, the top of the ledger will be 1½" below the finished height of the deck as most 2x decking material is actually 1½". Repeat this step on all walls that join the deck. Note: The drainage slope on the deck will show on any adjacent deck wall markings.



3. Now we will mark the outside perimeter of the deck foundation where the deck will be supported from the ground as indicated on your construction drawing. To establish this line, take two equal measurements, in separate locations, from the longest parallel house wall as shown, and mark the location with the nylon line. These measurements should indicate the centerline of the post base. The string line(s) should be directly over the center of the post base. Be sure that you keep the measurements parallel to each other and perpendicular (square) to the wall.

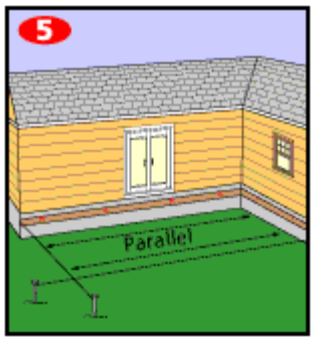


4. The string line can be attached at the ledger location with a nail or screw at one end and tied around a stake driven into the ground at the other end. Be sure to drive the stake "outside" the deck perimeter so it can stay in place until the support posts are set. Be sure to keep the string line above the top of the ledger height if possible so the footings can be dug, the concrete can be poured, and the vertical support posts can be placed, without moving them.

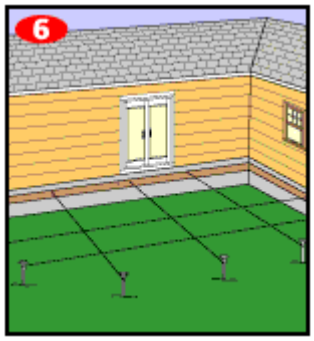


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

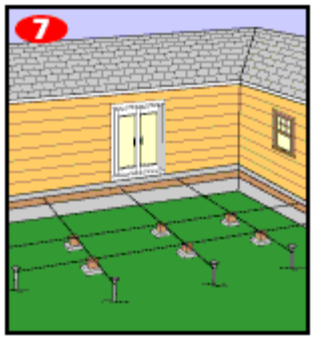
5. Measure the distance from any adjacent walls to locate adjacent sides of the deck (post base) and mark with nylon line the same way as in step 2. Remember to keep the measurements parallel.



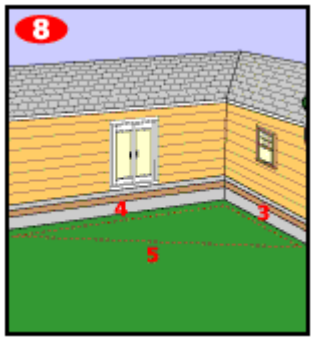
6. Layout any interior post bases using the same technique as the perimeter using two equal measurements and marking them with a string line.



7. The grid formed by the nylon line should be the same as the grid on your plans showing the structural members (girders) which will in turn support the joists, which support the finished deck boards. The intersection of the string lines indicates the center of the post bases.



8. Be sure to check your layout for square using the 3-4-5 right triangle method. Or you can check for square by measuring from opposite corners and comparing the dimensions, they should be equal: within 3/8 inch will be acceptable on this project In the next tutorial we will be pouring concrete in the post bases and attaching the ledger board to the house.



SHOP LIST

Materials Needed

- 24" to 30" stakes. (Use 1x2 wood or metal stakes) Two stakes per corner
- 16d nails

Tools Needed

- 25' tape measure
- Carpenters pencil or a permanent marker

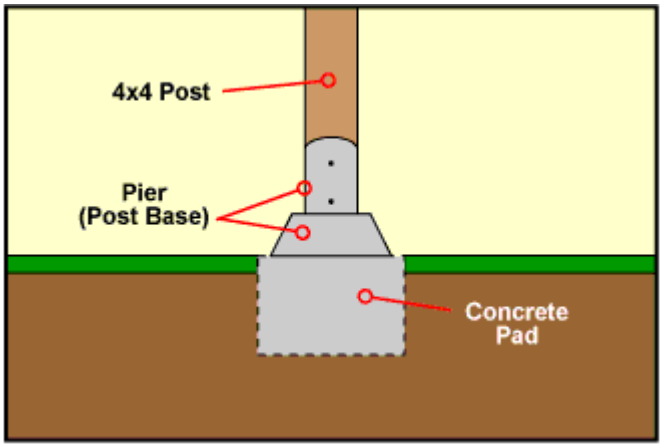
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- 100' "reel" tape, or longer if the diagonal measurement is greater than 100'
- 500' of nylon line (this "string" comes in highly visible colors and is good for laying out piers and footings for any construction project)
- Hammer
- Water level, string level or some other tool to find level.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Deck Post Holes & Foundation

OVERVIEW



Introduction

This tutorial will guide you through the process digging the deck post holes and then mixing and pouring the concrete. Before the concrete completely sets, you will then position the precast concrete piers.

You should have a fairly comprehensive list of materials for this project. If you have a pickup truck you can begin hauling the materials, otherwise, most home improvement centers will deliver. Be sure to inquire about delivery charges, if your order is large enough, the delivery may be free.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

Time to complete this project depends on the size of the deck and the level of help available, the times listed here are for two people on a 10'x 30' deck with the house defining two sides of the deck.

- Beginner - 7 to 9 hours
- Intermediate - 6 to 8 hours
- Advanced - 5 to 7 hours

CAUTION Check your layout from the Marking & Layout tutorial--check one more time to make sure the string lines are in the right place.

COMMON MISTAKE Follow the mixing ratios of dry concrete mix and water, the final strength will be reduced if the ratios are off.

HELPFUL TIP Order more concrete than you need, it is easier to have extra than go back for more.

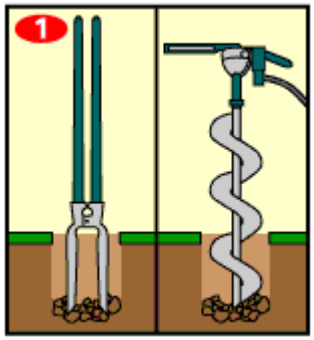
HELPFUL TIP Watch the weather, if it is going to rain or be below freezing, consider letting the sky clear and the ground warm up before pouring concrete.

HELPFUL TIP If you have more than a cubic yare of concrete to pour (27 cubic feet), consider getting a concrete buggy. If you have two or three cubic yards, consider a concrete truck, as the cost can easily be balanced by the convenience. Note, concrete usually comes bagged in 60 and 90 pound bags, a 60# bag equals 1/3 cubic foot, and a 90# bag is 1/2 Cubic foot.

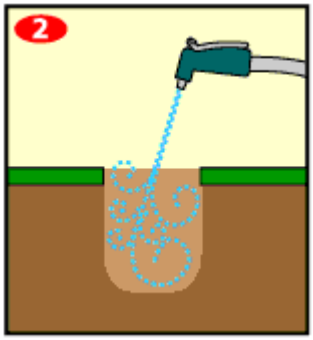
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

STEPS

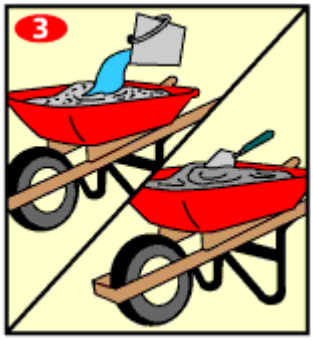
1. Gather your tools at the deck site and keep them close at hand. Dig the holes for the concrete pads and make sure the excavated dirt is kept out of the way. Dig all of the holes before starting the concrete. Be sure to remove all "crumbs" from the hole. If the soil is not firm, it might be necessary to build some forms to keep the holes at a reasonable size and shape. This form material must be removed after the concrete is cured and dirt should be packed in around the void left by the form. Another tip: put the dirt on plastic or plywood and it will be easier to haul away.



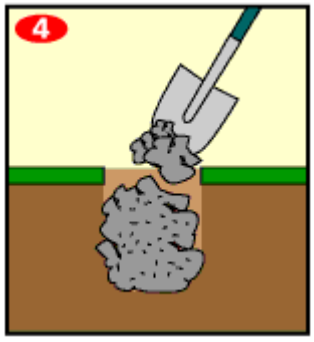
2. Set up your mixing station so that there you do not have to move the mixed concrete far as it becomes very heavy. If the ground is very dry, dampen the holes with the garden hose. This will keep the water from leaching out of the wet concrete into the dry ground.



3. Begin mixing the concrete with a gallon (not a critical measure) of water in the bottom of the mixing tub, and then add the dry mix. Add water slowly until all of the concrete is wet. When the concrete is completely mixed with water the mixture should be a little stiff, which means that when you take a scoop of mixed concrete and roll it back into the mix and it maintains its shape.

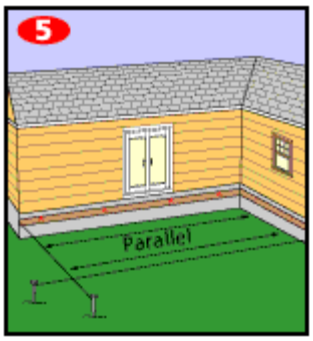


4. Pour or shovel the fully mixed concrete in the hole and tamp it down into the corners and edges with a rod or your shovel.

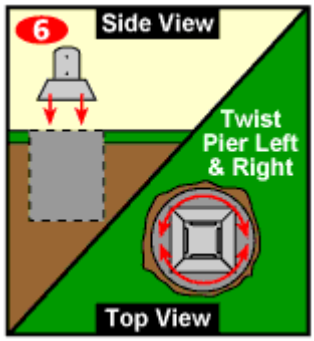


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

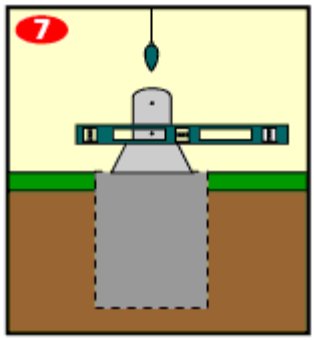
5. Once the hole is evenly filled, smooth the top surface so that it is level and even using a "wood float." The surface does not have to be as smooth as your driveway, just even it out.



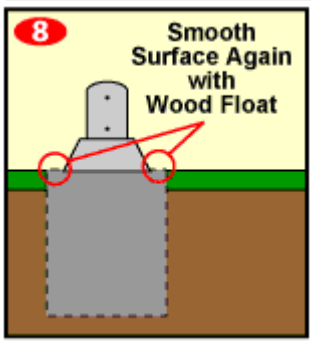
6. The concrete will begin to harden, however you have some time before placing the precast concrete pier. If the uncured concrete is too wet, you will need to wait until it is dry enough to support the pier and yet still allow the pier to sit down into the mix a bit. If the mix is a bit thick, set the pier in place on top of the wet concrete and twist the pier left and right a couple of times to force the pier into the wet concrete.



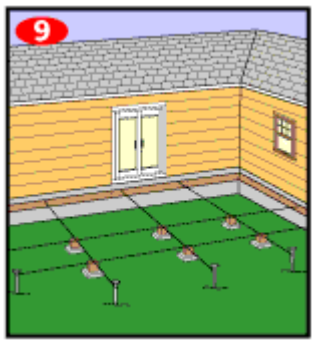
7. Once the pier is in place, check to see that it is level and use a plumb bob to position it directly below the location you have marked with the string grid line.



8. Go back to the uncured concrete and smooth out any bumps and wrinkles you created when placing the pier using the concrete float. Repeat the last few steps until all of the concrete pads and piers are in place.



9. When all the pads are completed, take a few steps back and survey your handiwork to make sure that everything is in place. You will be glad you did when everything sets and you move on to the next tutorial.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

10. When you finish the concrete, be sure to thoroughly clean all of your tools. It will be much easier now than waiting until you need the tools again and the concrete is set and solid.

SHOP LIST

Materials Needed

- Concrete
- Post Bases
- Fresh Water

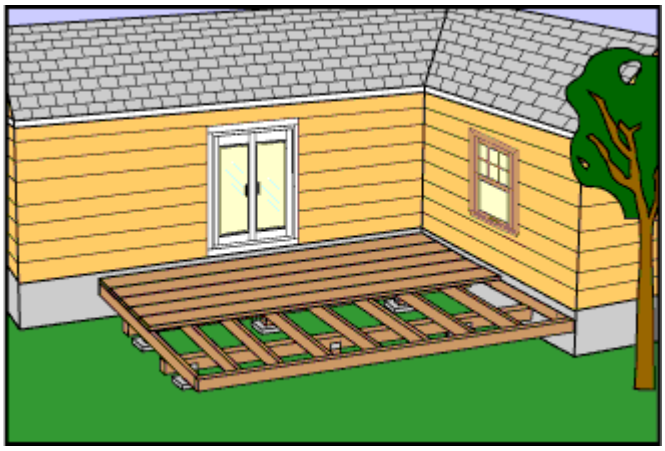
Tools Needed

- Spade and other shovels
- Breaker bar
- Concrete mixing hoe
- Concrete finishing tools, wood float
- Torpedo level
- Plumb bob
- Mixing pan or wheel burrow
- Garden hose with spray nozzle
- "Rod" for tamping concrete

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Deck Structural Design

OVERVIEW



Introduction

Now that you have the conceptual design for your deck, and you plan on doing this on your own, it is time to develop the structural elements and material specifications. No matter if you complete the project yourself or hire a contractor, this exercise will help you to get an understanding of the details of your deck. These specifications will be a part of the Construction Document you will either take to the building department for a permit, use to get bids on the project or use to build the deck yourself.

You might have already begun thinking about the construction details and possibly have a pretty good idea of the components that make up a deck or have some good questions. And, unless you have special conditions, we will answer most of those questions here. Special conditions include steep slopes, unstable soil and specific building codes. If you are unsure where your project fits, check with a contractor or the building department.

After you complete this tutorial, you will have a better idea whether to do-it-yourself or hire a contractor. So, grab your sketches and here we go.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

- Beginner - 3 to 4 hours
- Intermediate - 2 to 3 hours
- Advanced - 1 to 2 hours

COMMON MISTAKE Saving money by scrimping on materials or crowding the design tables will come back on you when the deck begins to age. Pay more now to save in the future.

HELPFUL TIP If you put this project out to bid, the estimates will be more "apples-for-apples" if the contractors have a detailed plan to bid from. The Construction Document you are creating here will help make this possible.

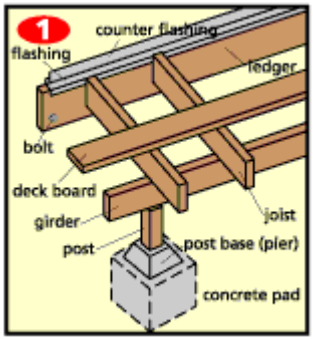
HELPFUL TIP Determine the direction the deck boards will run, this will influence the layout of the joists and girders. Most deck boards run parallel with the long dimension of the deck.

HELPFUL TIP Print out the Deck Spec and Materials list, which you can fill out in the following steps.

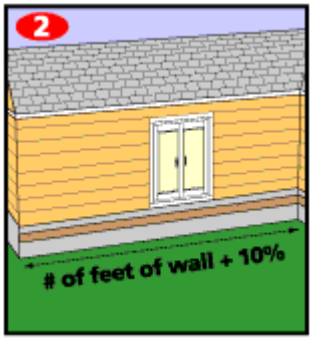
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

STEPS

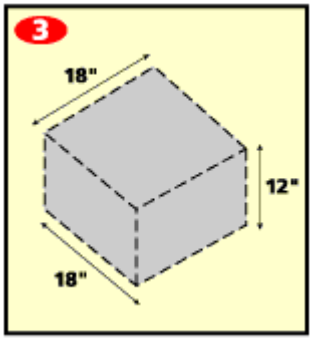
1. **Create a list:** Fill in the blanks on the Deck Specs form. This information will give you the basis for completing the materials list. You should get the measurements from the conceptual plan created in the previous tutorial. The following steps will help you fill in the quantities for each item. When this list is complete, you will be able to set a budget for your deck project by getting an estimate from the lumberyard or putting the project out to bid. Make your own copy of this list and let's begin.



2. **Estimate the ledger:** Measure from your plans how many feet of wall will support the deck and add 10% for waste. Note: Always add a "waste factor," use 10% as a minimum.

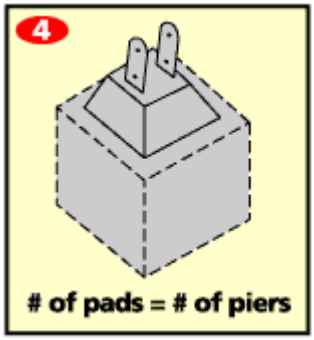


3. **Estimate concrete:** This project calls for concrete pads measuring 18 inches by 18 inches by 12 inches deep. That equals 2.25 cubic feet per pad, times the number of pads to figure the total cubic feet. Verify the standard in your area, as many areas, especially in colder climates, require deeper pads. The goal is to have concrete pads that extend below the frost line, which could be as deep as 42". For each set of stairs add 2 cubic feet to support the bottom of the stairs. Don't forget to add the 10% to the total for waste; and, there are 27 cubic feet in a cubic yard.



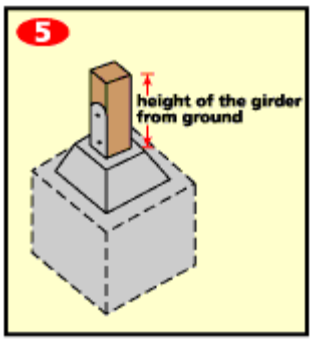
   Our 30 foot by 20 foot deck will have three rows of concrete pads with five pads in each row--15 concrete pads times 2.25 cubic feet (c.f.) equals 33.75 c.f. plus 2 c.f. for a total of 35.75 c.f. Don't forget the 10% waste factor. For this deck we will order 37.125 c.f. Be sure to round up to the nearest available quantity.

4. **Estimate concrete piers:** Simply count the number of concrete pads; you will need a concrete pier for each pad. It is not necessary to include a waste factor for piers.



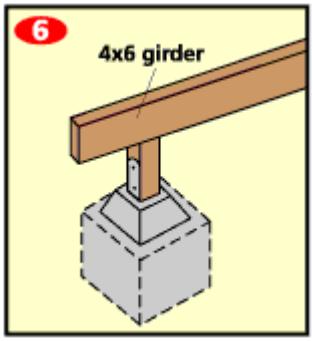
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

5. **Estimate posts:** You will need posts if your deck is over 18 inches above the ground. Count the number of concrete pads and multiply that number by the average height of the deck above the ground. Take care that the individual post heights fall evenly into a common 4x4 lengths; 4x4's come in two foot increments starting at 8 feet--8'-10'-12' and so on.

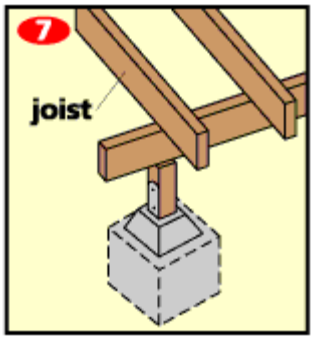


6. **Estimate girders:** The girders are 4x6's on this deck and will "run" the same direction as the deck boards. This plan calls for girders spaced 6 feet 8 inches apart and supported by piers every 6 feet (check applicable joist span tables). Girders should be supported on three piers where possible--this will make the minimum desirable length 12 feet, remember the piers are 6 feet apart. Therefore the best girder lengths are multiples of six, and the longest manageable length will be 18 feet. Also, the girders must be supported at the ends on piers.

   For our deck there will be three "rows" of girders, each 30 feet long, for a total of 90 linear feet of 4x6. For this estimate add 10 % for waste, be sure to check for availability of the required lengths.

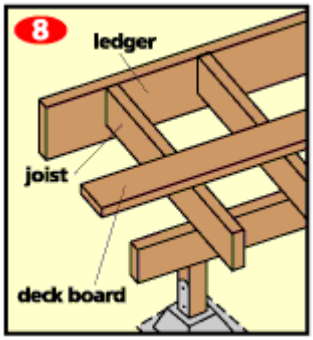


7. **Estimate joists:** The joists are spaced 16 inch on center and will run perpendicular to the girders and deck boards. To figure the number of joists, convert the length of the deck to inches (a 30 foot deck is 30 x 12 = 360 inches) and divide that by the 16-inch spacing (360 / 16 = 22.5) and round up (22.5 becomes 23.) Add 1 to that to figure the total number of joists. This deck will require 24 joists spaced at 16 inches on center. Multiply this number by the deck width (20 feet) to estimate the total linear feet of 2x6 joists, 460 linear feet plus 10% (46) equals 510 (round up.)



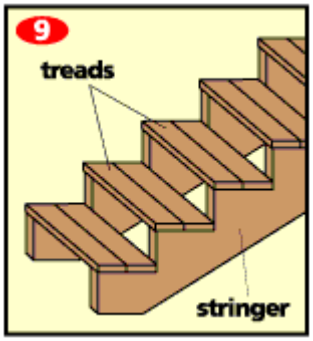
8. **Estimate deck boards:** This deck will have 2 x 6 decking, a 2 x 6 is usually 5 ½ inches instead of 6 as the name implies. So a standard 2 x 6 one foot long (a linear foot of 2x6) will cover .46 square feet.

   Our deck is 600 square feet (20 x 30) so there will be 600 / .46 = 1,304 linear feet of deck boards.Be sure to include a 10% waste factor (134 feet) and the total is 1434 linear feet of 2 x 6.



9. **Estimate stairs:** This deck is 30 inches above the ground and has one set of stairs 36 inches wide. To figure the actual number of steps, divide 30 inches by 6 inches--5 steps, the last one being the deck itself. Height of deck above ground divided by 6 equal the number of steps.

   To figure stringer length, multiply the number of steps by 16 inches for each stringer. Our deck has five steps times 16 inches--80 inches-6 feet 8 inches. Stairs up to 36 inches wide have two stringers, and stairs over 36 inches have three stringers up to 6 feet for the stringers. The steps (the steps are 2x6 the same as the deck) have two 2x6's, times the width of the stairs. In this case, each step will have two 2x6's by 36 inches. Five steps will require 10 x 36 inch 2x6's or 30 lineal feet of material. Add this to the deck material order.

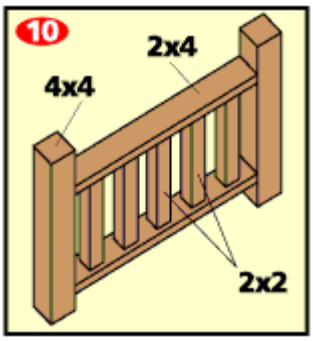


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

10. **Estimate railings:** This deck has guard railings on two sides and hand railings on the stairs. Measure the open sides of the deck and add the stair rail. Get the stair rail length from the stair stringer length in step nine.

Calculate one 8-foot 4x4 (post) for each 6 feet of rail, 2 feet of 2x4 (top and bottom rail) for each 1 foot of rail and 2.2 1x2 (baluster) for each foot of rail.

There are three parts of the railing, the posts, the top and bottom rail and the balusters.



11. **Hardware and fasteners:** You will need galvanized nails, metal connectors and bolts to connect your deck parts. Figure one pound of 16d galvanized nails for each 10 square feet of deck, use the double hot dipped galvanized kind.

Each joist will require two joist hangars. Each post should have a post cap to connect it to the girder it supports. Figure one pound of galvanized nails for each 10 metal connectors. The manufacturer will specify the size of nail for their product. Allow one bolt per foot of ledger, be sure to measure the length necessary to "run" the bolt through the wall framing and install a nut and washer on the other side.

Materials Needed

- Your design from previous tutorial
- Blank paper for lists

Tools Needed

- Calculator
- Span tables
- Material selection information

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Steps

How to Make Standard Exterior Timber Steps

In this tuturial we show you how to make standard exterior steps 900mm wide, coming off a deck 900mm high. **note:** All steps higher than one metre off the ground require a building consent and a council approved handrail.
As the steps we are going to build do not exceed 900mm from the ground, a building consent is not (necessarily) required. However we are going to go by the rules anyway:

Step Rules:
1 Treads must be at least 280mm deep.
2 Rises must be a maximum of 185mm high.
3 Front of tread must overlap the back of tread below by between 15mm to 25mm.
4 There can be no gap more than 100mm between the vertical distance of treads, therefore riser boards will be needed to close any gaps. **see Fig1 below**

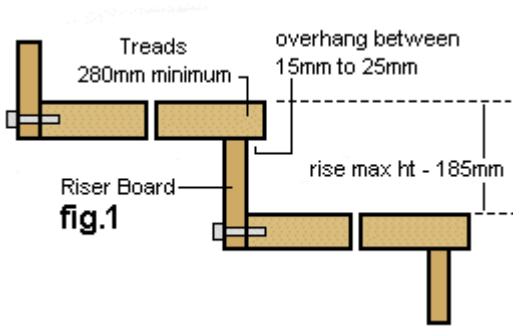
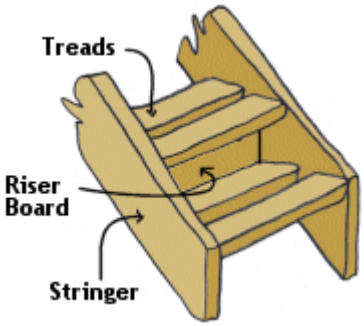


fig.1

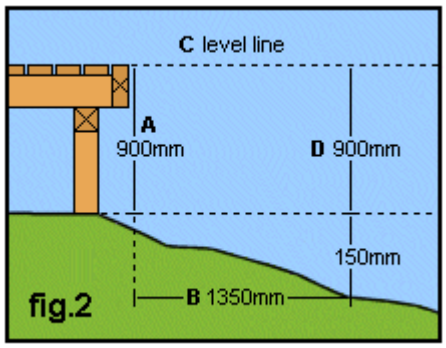


Getting Started:
To start off find the overall height from the top to the bottom of the steps.

We know the height of the deck is 900mm above ground, but the ground comming away from the deck might not necessarily be level and the slope of the ground will affect the overall height of the steps.

To find the true overall height of the steps first measure the height of the deck from the ground where the steps are to fit. (we know that measurement is 900mm). Then measure out from the deck (in the direction the steps are to go) in a level line, one and a half times the deck height measurement. (Approxamately). In this case, 1350mm.
See Fig 2

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



(A) Height of deck off ground. (900mm)

(B) Distance out from deck where steps will finish. This measurement is 1.5x measurement A. (900x1.5 = 1350mm)

(C) Level line from top of deck.

(D) This height is the overall height of steps. (900mm + 150mm ground slope = 1050mm) Now we know the overall height of our steps which is 1050mm. Next work out the height of each rise. This is the vertical distance from the top of one tread, to the top of the tread above it. We know the maximum height of each rise can be 185mm max. Knowing this we need to divide into 1050mm (overall step height) to get an even measurement of 185mm or less. In this case, the even measurement is 175mm, as 175 divides into 1050mm 6 times. This means that there will be six rises, each 175mm, which gives us a total height of 1050mm.

We have now established the dimensions of out steps.
Six Rises at 175mm and five treads across at 280mm. (Always make the treads 280mm regardless of the rise measurements).

The Timber to Use:
Stringers - Dressed H3 Treated Pine, 250x50 (finishes 240x46)
Treads - Dressed H3 Treated Pine 150x50, two per tread (finishes 145x46).
Riser boards - 150x19 H3 rough sawn, which is just standard fence pales.
All the above timber is ready available from any timber merchant.

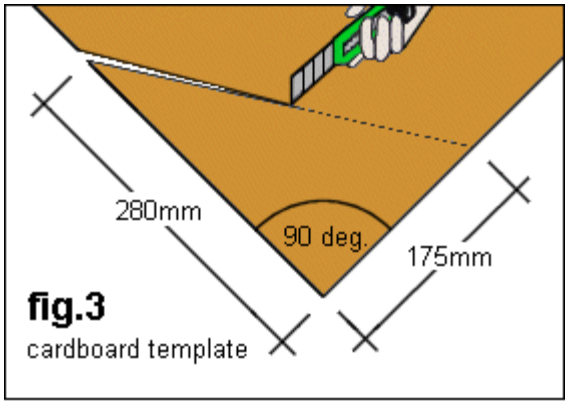
Quantities:
Stringers - 250x50, two at 2.1m
Treads - 150x50, ten at 0.9m
Riser Boards - 150x19, three at 1.8m (standard length)

Building the Steps:

Step 1: Make a simple template in order too mark out on the stringers, The tread positions.

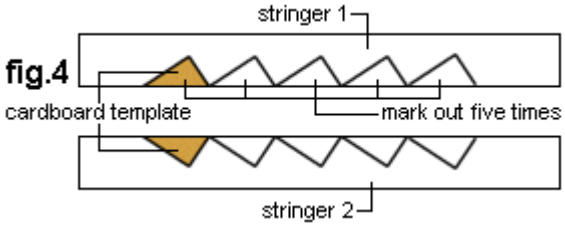
This is a relatively simple task, take a piece of cardboard 300mm square or larger (alternatively you can use hardboard, thin plywood or anything similar). From the cardboard cut out a triangular piece as shown in the following diagram. **fig. 3**

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Step 2: Lay out the two stringers (250x50 x 2400) flat on a couple of saw stools, on even ground or on the floor.

Hold the cardboard template, with its longest edge flush to one edge of the stringer, approx 300mm in from one end, and pencil mark around the template. Repeat this action five times on each stringer, as shown in the diagram below. **fig. 4**



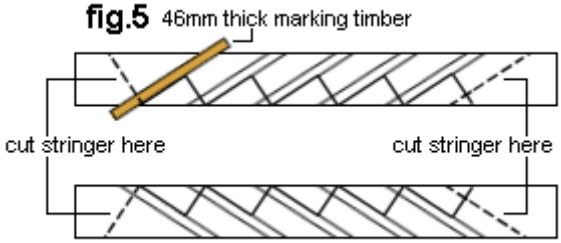
Stringer 1 must be marked mirroring stringer 2.

step 3: To continue marking out for the treads, use a piece of timber about 600mm long, and the same thickness as the treads (46mm) This piece of timber is to be used only for marking and can then be discarded.

Hold this piece of timber flush on one of the tread pencil lines marked on the stringer.

Mark each side of the 46mm thick timber accross full width of the stringers, as on fig.5 below.

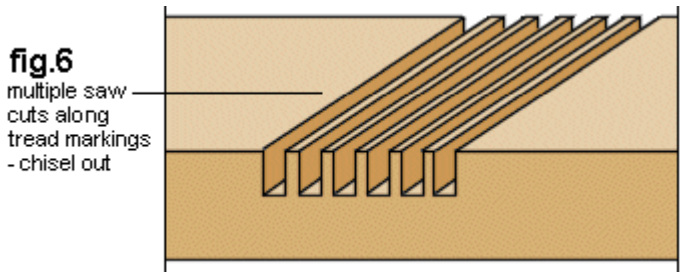
Repeat this action to all tread lines, on both stringers to get an effect as in the diagram below. **fig.5**



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Building the Steps Cont...

Step 5: Now that we have the tread lines marked out on the stringers, we need to check (rebate) them out. This can be achieved by setting the blade depth on our circular saw to between 15mm and 20mm, and making repeated cuts along and between the tread markings on the stringers. See diagram below. **fig.6**

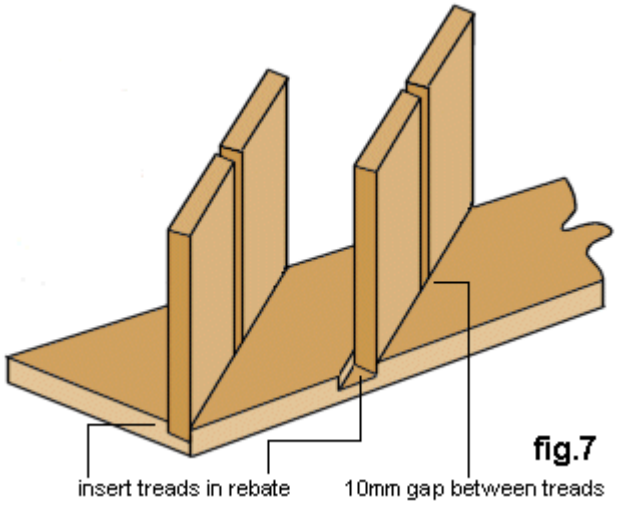


Repeat this action to all tread markings on both stringers.

Finish by chiselling out the grooves with a sharp chissel. The more saw cuts, the easier the chisselling.

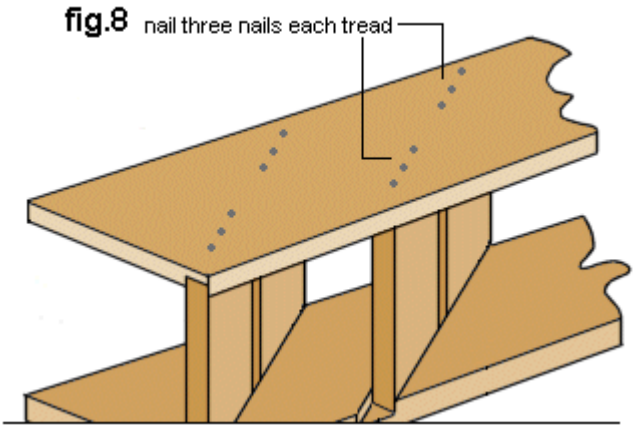
Step 6: Cut all tread timber, 150x50, to the required length, in this case 840mm. (10 in all, 2 per tread)

Step 7: Lay one of the stringers on even ground or the floor and insert the treads into the rebated grooves. **fig.7**

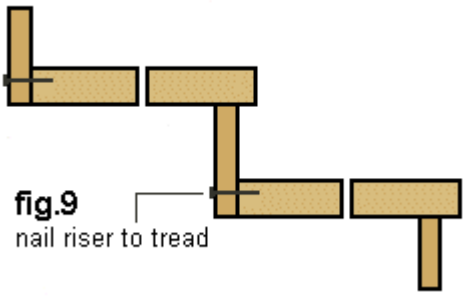


Step 8: Place the other stringer on top of the treads mirrowing the bottom stringer. Nail through the stringer into the treads using 100mm or 90mm galvanised jolthead nails. 3 nails per side per piece of tread timber. **see fig.8**

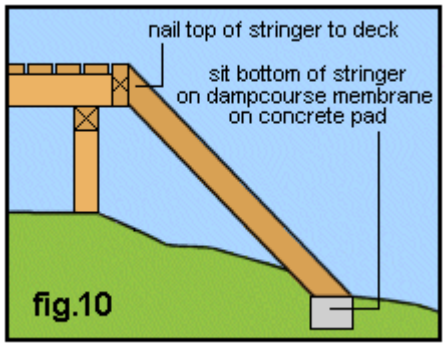
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Step 9: Cut riser boards and nail against back of treads. **see fig.9**



Step 10: Fix the steps in place. Nail the top of the stringers to the deck structure. Temporarily pack with blocks of wood under the bottom tread untill treads are level. Dig a hole 250x250x250 under each stringer and fill with concrete. Place a galvanised wire or bracket into the wet concrete against the the two stringers. When the concrete has cured (2 days) place a piece of dampcourse membrane, melthoid or similar under the stringer and on top of the concrete pad. This prevents moisture from the concrete pad going to the timber. **See fig.10**



Remove temporary packers from under bottom tread and nail or staple the galvanised wire or bracket to the stringers.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

DESIGN, PLAN AND FIT A KITCHEN

SKILL LEVEL

Fitting a kitchen requires a great deal of skill, and is most suited to the more advanced DIYer. There are a wide range of skills involved, and you will need to have knowledge in the following trades; Carpentry, Plumbing, Electrical and Tiling.

SAFETY FIRST

There are many safety factors involved in fitting a kitchen: always check for electrical cables and water pipes, using a pipe and power detector before drilling in to floors or walls.

When using power tools always use an RCD protection device, making certain that all power tool leads are in good condition. Always wear safety equipment.

INTRODUCTION

To fit a new kitchen you will need to be an advanced DIYer, as there are many different skills involved, however the results will be very rewarding, not to mention the amount of money you'll save by fitting it yourself.

2 - Planning and Design

Getting started

Carefully measure up your kitchen in centimetres making a precise scaled plan

Measure in a clockwise direction, starting from the door, and note which direction the doors open.

Be careful to check the following:

- Take the ceiling height at several points.
- Ensure the kitchen is square by measuring diagonally (or compare opposing walls).
- Carefully mark the location of existing power points, plumbing, gas supply, air vents and any permanent features such as windows, sills, radiators and boilers.
- Always check dimensions, if in doubt measure it

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

again.

- Note the space required for your kitchen appliances.

- Finally check what the walls are made of to ensure that you buy the correct fixings for your unit.

Planning your kitchen

It's important to design a kitchen that revolves around your needs. Creating a triangle between your cooker, sink and fridge will make a better working environment. This will ensure that your workspace is never cramped, allowing you to move freely between appliances.

The layout you choose will depend on the size and shape of your room - and the position of windows and doors. Plumbing and electrical points can usually be moved, so do not let these restrict your design.

Most kitchens fall into four basic designs, a single line of units, a double line (galley), and an L-shaped or U-shaped kitchen.

By combining cabinets imaginatively to these designs it is easy to totally transform your kitchen to suit your lifestyle.

Working out the detail

Using the dimensions of the cabinets you wish to purchase, sketch your chosen units to scale. Alternatively, cutting out the shape of the cabinets to scale allows you to move individual units around your kitchen plan and work out the best layout.

Hints & Tips

DO

- Try to position your sink by a window, so you have a view.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Position electrical sockets a minimum distance of 150mm above worktops.

- Position extractors or cupboards a minimum distance of 750mm above hobs.

- Use heat or fireproof cable on cookers or hobs.

- Locate dishwashers and washing machines close to sink to minimise plumbing work.

- Ensure that wall and floor units are of similar widths-so the doors line up.

- Keep tall units at the end of the worktop runs, to maximise the working area.

- Place your hob or free-standing cooker in position this minimises the distance needed to carry hot pans across the walkways in the kitchen.

- Allow at least 300mm of clear space each side of the hob to allow for protruding pan handles.

- Position extractor fans on (or close to) outside walls.

- Allow adequate space around free-standing appliances for easy access, (refer to manufacturers fitting instructions).

DON'T

- Locate a cooker or hob beneath a window where curtains could catch fire - or where it is dangerous to reach over to the window.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Plan a wall unit above a hob without an extractor fan.

- Plan a hob next to a tall unit, corner wall or at the end of a run.

- Plan appliances in a corner.

- Put an inset sink near worktop joints.

- Position a sink or cooker near or next to opening doors.

- Box in boilers or other gas appliances as these require air flow to operate properly and safely.

- Put a cooker hob under or near electrical sockets.

- Position cookers next to fridges or freezers.

- Block up existing air vents if there are gas appliances in the kitchen.

Everything you need to Take Away today

Once you have decided on your units and worktops don't forget the other exciting accessories that can add those finishing touches - such as plinths, pelmets, cornices, handles, decorative legs and wirework.

Consult a plumber if in doubt about the positioning of a sink or dishwasher as it is not *always* possible to reposition them - you will need to take into account the positions for waste pipes and drains. It is also important to consult a Corgi registered fitter about air vents and an electrician about electrical work.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Useful phone numbers:

Corgi - 01256 372200

Institute of Plumbing - 01708 472791

Institute of Electrical Engineers - 020 7240 1871

3 - Removing your old kitchen

You should only start to dismantle your old kitchen when you have purchased your new Take Away kitchen and appliances - just in case you can't get everything you want.

Getting ready

First of all clear everything out of your kitchen. Be sure to empty all the cupboards and clear all worktops. Turn off the kitchen electricity and water supply - then disconnect all lines to the sink and drains.

Next, disconnect any appliances. You may want to use another room as a temporary kitchen - an electric kettle and microwave are particularly useful while your kitchen is out of use.

Safety tips

Remember, it is law that gas appliances should only be disconnected or connected by someone with CORGI Registration. Take care when working with electricity. If in doubt call in a qualified electrician.

Removing old cabinets

First remove all the drawers and doors from the cabinets. Next remove worktops by looking underneath to locate the attachments to the base cabinets.

Wear safety gloves and goggles when removing the cabinets - two people will be required to remove the wall cabinets.

Remove any screws and fasteners and ease the worktop off. If it has been glued down, you may need to use a crow bar to pull the worktop off - remember to protect the wall by putting a piece of waste wood between the wall and the crowbar.

Now you simply have to unscrew the cabinets, detach and clear the kitchen.

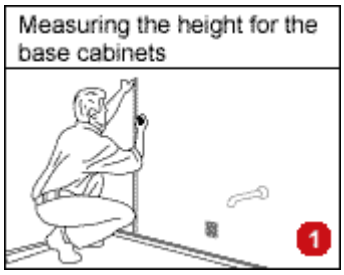
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Making good

This is a good time to make any repairs to the walls, or even apply a first coat of paint. Re-flooring, boxing in pipes or getting any professional help such as an electrician or plumber should also be considered at this stage.

4 - Installing your new kitchen

Starting in the corner where you plan to begin your installation, use your spirit level to ascertain if the floor is level. If not, mark the highest point of the floor on the wall (1).



From this mark, measure up 870mm for the height of your Take Away base cabinets (includes 150mm to allow for plinths or legs). Then make a level line for the top of the base cabinets - mark level lines for the top and bottom of the wall cabinets at the right height for you.

Double check your level lines to make sure they are straight and level. This will ensure that your cabinets are straight, even if your walls are not.

5 - Cabinet assembly

Although the units are easy to put together, do read the assembly instructions before you start work as you'll be more familiar with the task in hand.

In the unlikely event that you ever get stuck, call the B&Q helpline on 01769 575500 from 8.30am - 5.30pm Monday to Friday.

Hints & Tips

- Clear a large area to assemble and store new cabinets.
- Do not attempt to lift or carry boxes alone.
- Open one box at a time and assemble each cabinet before moving on to the next.
- Avoid scratching surfaces by assembling on a carpet

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

or on an empty cardboard box.

- Match each assembled cabinet to the corresponding door by sticking on masking tape and then numbering.

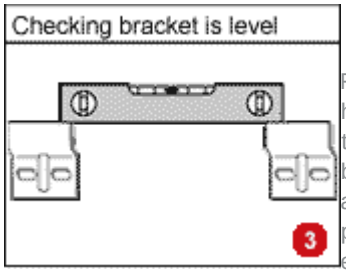
6 - Installing base and wall cabinets

Installing wall cabinets

Work methodically, starting with a corner cabinet and working out in both directions. Make sure someone is there to assist you and steady the cabinets while you check levels and fixings (2).

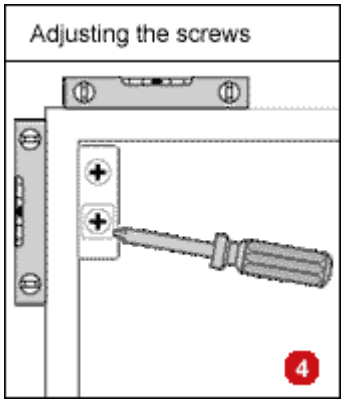
Hints & Tips

- Make sure the unit is pulled out from the corner to match your layout plans and template lines.
- On plasterboard walls, use cavity wall fixings to attach cabinets if the fixing positions do not coincide with wall studs.
- Check adjoining cabinets are level and straight before moving on to the next cabinet.



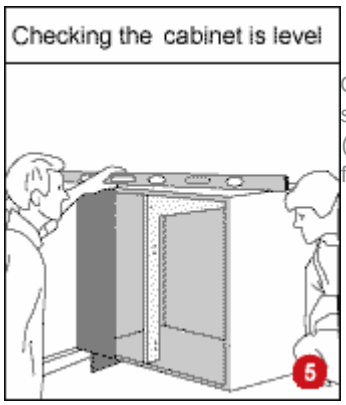
Fix the bracket to the wall (3), hang the cabinet and then adjust the screws that affix to the bracket to ensure it's level (4) and as close to the wall as is possible. Your spirit level is essential!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Installing base cabinets

Begin in the same corner as you did when fitting your wall cabinets. Make sure the cabinet matches your plan - and is correctly positioned according to the wall cabinet.

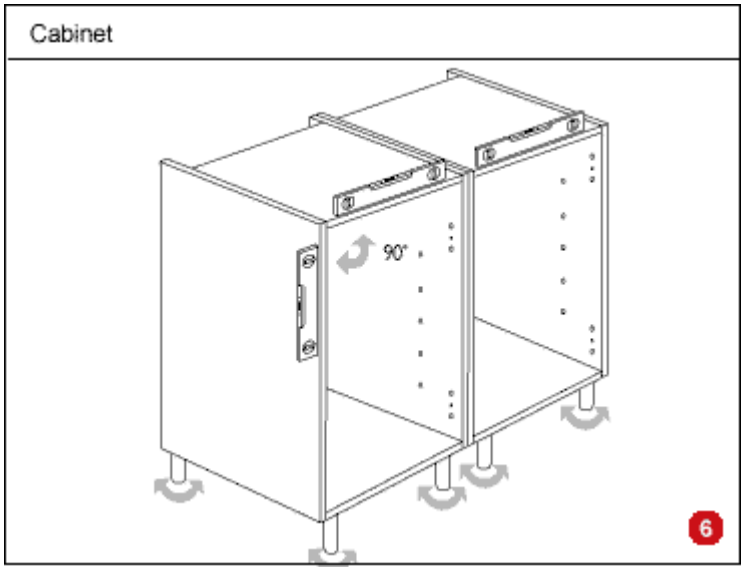


Once again, you need to make sure that the first cabinet is level (5), even if your floor isn't - follow the marking lines.

Leave the doors and shelves until last, as it is easier to adjust an empty unit!

Before affixing the cabinet to the wall, rotate the legs to adjust the height (6), making sure the units are level. Once the height matches the marking line or other units and is level then use the appropriate fittings to secure cabinet to the wall.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Hints & tips

- Do not screw cabinets tight to wall until levels of adjoining cabinets are checked.
- Drill holes for pipes before installing the sink cabinet.

7 - Installing worktops

If the kitchen is fitted with three worktops i.e. one at the end and the other two running at right angles to it, you will need to install the end one first.

Measure the distance from the wall to the edge of the cabinets and cut the worktop to the required length, allowing for any defects in the walls or awkward angles. If in doubt cut a template of any odd shapes.

When all the worktops are cut, fit the joining strips to the worktops using silicone sealant to seal the ends and edges of the worktops. Position the worktops on the base units and check that they all fit.

Fix the worktops down using suitably sized woodscrews and check the joints to make certain they are level and square.

You will need to cut out areas for hobs and sinks etc. before finally fixing the worktop.

Worktops can also be jointed with mitre joints and connecting bolts. However this is best carried out by a carpenter as it requires special tools and a high level of skill.

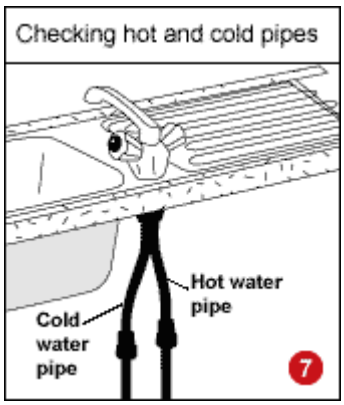
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

8 - Installing an inset sink and taps

The tools you require and the amount of plumbing needed will vary depending on the type of sink and taps you have chosen.

Start by carefully measuring up, marking out the sink outline - a template is usually provided with the sink. Remember you're not measuring out to the full width/length of the sink as a lip around it will hold it in place. Once marked out, carefully cut out with a jigsaw.

With the sink on its face, seal around the rim. Fit the securing clips to the sink - this ensures the sink is firmly attached to the worktop. Now is the time to fit your taps, following the instructions you receive in the packaging.



Mixer tap tips

- Look to see whether the hot pipe is on the left as you look at the sink (7).
- When undoing the cap nuts of each connector and you've slipped the nut and olive onto each pipe, use a spring-clip clothes-peg below each pipe to stop them slipping off.
- Read and fully understand the instructions before you start.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

DESIGNING YOUR GARDEN

SKILL LEVEL

INTRODUCTION

A well designed garden, tailored to your own particular needs, will not only be beautiful and productive, but will give you and your family pleasure throughout the year.

You don't have to be a design wizard - or even particularly artistic - to create a beautiful garden. The concepts of good design are simple to understand and straightforward to put into practice.

Whether developing a new garden from scratch, or reshaping an existing one, understanding and developing basic design skills will help you achive good results, and more importantly, develop a garden with exactly the layout that is best for you.

Changes in your garden's design need not be profound. Repositioning a tree, for example, erecting a screen, or changing one of your garden surfaces may be small adjustments, but each of them can have a profound effect on the overall appearance.

2 - Decide what you want out of your garden

The first and most important step is to decide exactly what your garden means to you, and what you expect from it. You may want:

Somewhere to sit. Examples might be a terrace or patio.

Somewhere for children to play. Sandpits, swings and climbing frames could all be incorporated into your garden's design, perhaps to be altered later, when they've grown up.

A source of food. More and more people want to grow fruit and vegetables. In a small plot, a kitchen garden can be beautiful as well as productive.

A special plant collection. A plant enthusiast's garden should offer different habitats including hot dry spots and cool shady ones.

A showcase. Why not enter your local 'Best Front Garden' contest?

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A wildlife refuge. With increasing threats to natural habitats, our gardens are becoming important sanctuaries.

Never be afraid to borrow ideas. Visit other gardens - there are thousands open to the public nowadays. Look at books and magazines and consider how features that appeal to you could be adapted to your own garden.

3 - Assessing what you've got

Once you have decided what you want from your garden, the next step is to assess what is already there:

Surrounding influences. Features of the surrounding landscape will influence your design. Objects of beauty - a church spire, perhaps - could become backdrops to your vistas; an ugly building, or noisy road will need concealing behind shrubs.

The shape of your plot. Your design must lie comfortably within the dimensions of your plot. If the area has a strange shape - a triangle perhaps, or irregular boundaries - make sure you use the space efficiently.

Soil, aspect and climate. The greatest enemy of any garden is wind. In an exposed area, therefore, your design must include shelter, such as fences, hedges or shrubs. Likewise, heavy shade, poor soil or a local frost problem will all influence your plans.

Existing layout and design features. You must decide whether to keep these and incorporate them into your new design, or whether to remove them and start afresh.

Make a list of your garden's strongest natural advantages - good soil, perhaps, or beautiful views. Your design should make the most of these advantages and thus help to neutralise any disadvantages.

4 - Setting up your basic design

Begin by making rough plans. Use graph paper and develop your plan to scale, but don't get too bogged down in the technicalities. Instead, plan a general layout and begin to arrange the various features within it, first on paper, then pacing them out in the garden. You can mark the areas out with sticks and string. Illustration (1) demonstrates an example garden.

Prioritise your features in order of desirability. There may not

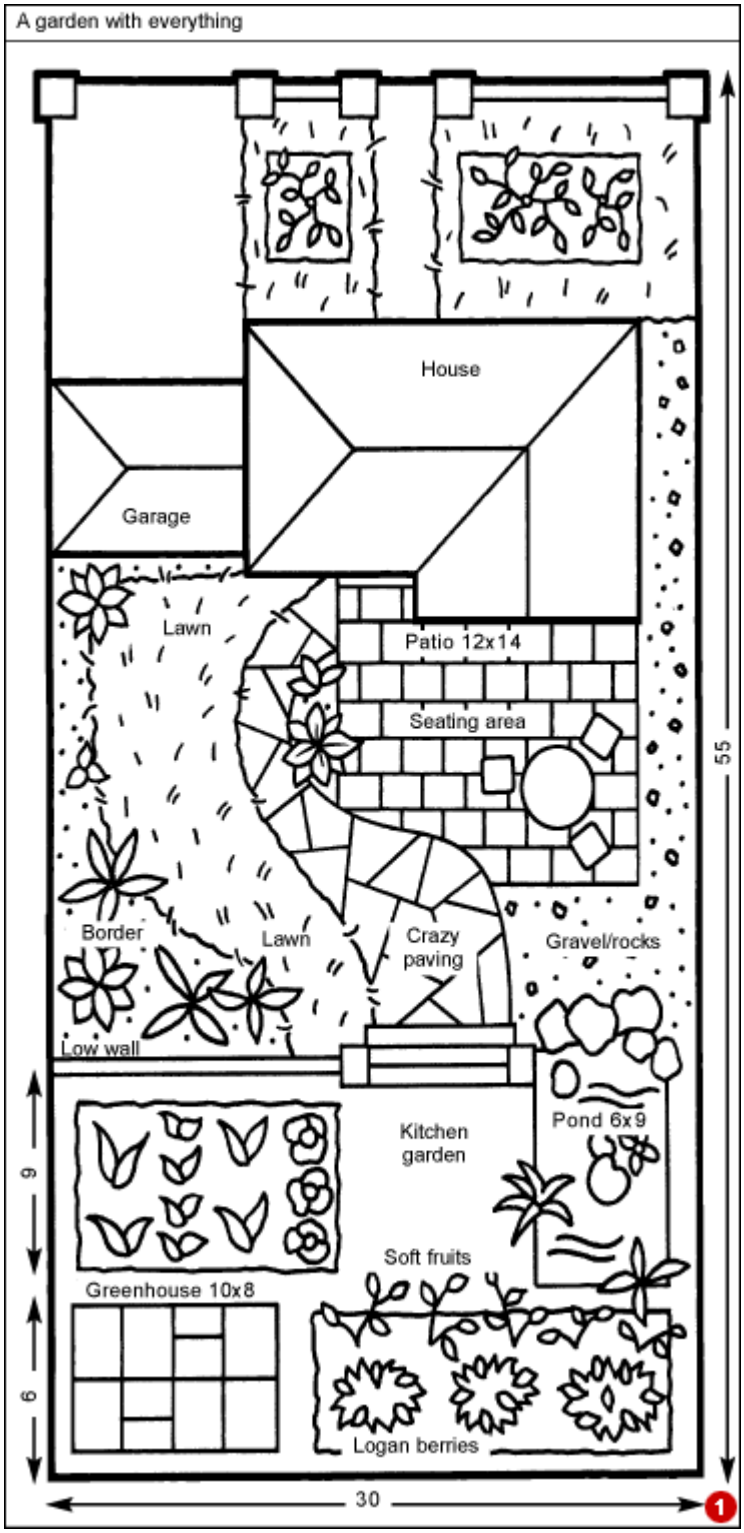
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

be room for everything, so decide which to sacrifice, or which are to be scaled down.

Try to think of trees and shrubs in terms of their final size, rather than a couple of seasons after planting.

If you have access to a photocopier, draw a general plan to scale, and make a number of copies. This will give you plenty of scope to experiment with different layouts.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

5 - Creating a framework and forming the layout

It is important, when designing your garden, to consider the area as a whole, and to mark out a general framework. The dimensions of a whole plot will make up a main frame, almost like a picture frame, and within that, you must decide on important factors such as internal divisions, pathways and entrances.

Try to arrange for several interesting vistas, since these will make your garden a pleasure to stroll around, as well as providing optimum views from the various key points.

Some aspects of your framework will be pre-decided, and you must work with them: the position of the house, the main gate, where the doors and windows are situated etc.

Final layout will depend on these, and on existing conditions. You will probably want your sitting area, for example, in sun, near the house, but with maximum privacy.

Within these constraints, position such key features as archways, ponds, a lawn or borders where they will create the most pleasing effect.

Never underestimate the importance of a view through the window - especially a window frequently used. Pathways that lead into the distance, attractive borders that change through the seasons, a thoughtfully sited pond - all are examples of garden design that can be enjoyed every day from indoors.

6 - Making internal boundaries

Internal divisions and screens can be as important as boundary fences, since they divide up parts of the garden for different uses and allow for changes in mood and style from one to another. Surprises are valuable in a garden's design. Route pathways round corners or through mysterious archways, leading them to a hidden feature - a rustic seat, perhaps, overhung with a fragrant climber.

7 - Disguising unsightly objects

Eyesores can be disguised in various ways. Often, designing a prominent vista so that it leads the eye away from any unsightliness will be enough to effect a disguise. Screens, especially those that can be furnished with growing plants, work well, as do hedges.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Grow low shrubs or trailing plants over manhole covers, or create a special manhole cover feature.

Fuel tanks, or other large objects need hiding. Make the screen a feature in its own right, however, rather than simply erecting it directly round the object.

Unsightly gaps between buildings can be disguised with trellis.

Hide awkward paving or ugly concrete with a layer of gravel, arranged with containers full of plants.

Long grass, grown for wildlife or meadow flowers, can look untidy without a close-mown boundary around its edge. The neatly-mown strip will create a pleasing, contrasting line. You could even close-mow pathways through long grass.

8 - Extra styling

Once you have developed your garden's basic design, you may want to develop some special styling. Here are some simple ideas:

Soften hard edges. Plant alpines or dwarf shrubs at wall bases and in paving cracks; allow perennials to spill over onto paving. Permit some plants to seed in pathways.

Make sure you've maximised opportunities for climbers and wall plants.

Keep adding containers to your garden. They do so much to enhance its interest.

The garden floor - be it lawn, paving, concrete or gravel - is an important part of styling your garden. Gravel and grass allow for a very naturalistic approach, but with old stone paving, or perhaps wooden decking, you could develop a stylish garden surface which is both useful and beautiful.

9 - Water features

Water, though not essential, can be the making of a good garden design. As well as providing a beautiful and restful focal point, a water feature changes the light in a garden, is wildlife friendly, opens up opportunities for entirely new kinds of planting and is a constant source of fascination. Whether large or small, formal or informal, still or moving, a water feature can be the most valuable asset your garden has.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If children or pets are likely to use your garden, you must consider their safety before deciding on a water feature. Unfenced pools of water are particularly hazardous, but a raised pebble pond, in which the stones protrude above the water, is usually an attractive and far safer alternative.

10 - Blending functionality with design

With the limited size of most gardens, it is important to put every square inch to good use. Apart from main beds and borders, there will be a whole range of other planting opportunities:

The centre of a driveway can carry a good selection of low, mound forming plants.

Your patio will look best if it is generously furnished with containers, not only of summer flowers, but with others, planted more permanently, for winter interest.

Ensure that your fruit and vegetable garden is planted as attractively as possible, with plenty to fill gaps made by harvesting crops. Flowers among the vegetables can be welcome additions. If these are yellow, they will help to attract beneficial insects.

11 - Planting as part of design

Specific planting is discussed in other B&Q gardening leaflets, but here are some general rules when selecting plants for your newly designed garden.

Only select plants that look attractive for much of the year. A spring-flowering tree should also have good autumn leaves, and perhaps a crop of colourful berries. Repeat-flowering shrubs, such as roses, have more to offer than short-lived species like Forsythia. Evergreen shrubs are prettier, in January, than most deciduous ones.

Plant for structure. Make sure your borders carry a good arrangement of structure plants - trees or shrubs - which will give the garden its backbone, winter and summer.

Try to achieve a changing picture. Spring bulbs will ensure a cheerful beginning. Early summer perennials like Lupin and Poppy should give way to later displays of Phlox, perhaps, and Penstemons. Aim for a final climax in autumn, with Dahlias or Michaelmas daisies, and be sure to include winter treasures such as Witch hazel or Snowdrops.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Plants will grow, so space them with the future in mind. Trees may need to be 20ft (6m) or more apart, shrubs up to 10ft (3m), if they are large and vigorous. Perennials can be more crowded, because they can be lifted, divided and replanted every few years.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Different types of Hammers

A wide range of Hammers are available, varying in shape, size and weight. The different styles reflect different uses. Around the house, the average diy'er only really needs one or two type.

The shape of Hammer heads has not changed much over the years although some modern materials are now used in both the head and handle. Traditionally handle were made of wood fixed through a hole in the head; this allowed the handle to be easily replaced if required. Modern hammers use modern materials and the handles are often built into the head - often with a form of built-in shock absorber to make them easier to use.

Claw Hammer

The most popular hammer for general work, available with a wooden (often hickory), glass-fibre or steel handle; with or without rubber grip. The most popular weights are 455-680g (16 to 24oz). The claw is normally curved, and incorporates a 'V' cut-out to draw nails from timber. The claw can be used to lever up floorboards or where other places where a lever is required; care must be taken (especially with cheaper models) as the force applied can easily weaken the joint between the handle and the head.

Ball Pein

Normally used by engineer's, the pein in this case, is rounded and is usually used for shaping metal and closing rivets. Ball pein hammers are available from 55 - 1100 (4 oz upto 2 lb.), 110 - 165g (8oz 12oz) are the most suitable for general use. Handles are normally wood, usually Ash or Hickory.

Cross and Straight Pein

Again, mainly used for shaping metal, the pein can be at right angles to the handle or parallel with it. The most useful domestically is the cross pein, where the pein can be used for starting panel pins and tacks. Handles are normally wood, usually Ash.

Cross Pein Pin Hammer

A lighter version of the Cross and Straight Pein hammer, ideal for light joinery and cabinet work. Weight 55g (4oz).

Club Hammer

Sometimes called a Lump Hammer, it has a double faced head, and is useful for light demolition work, driving steel chisels and masonry nails. As debris is likely to fly, the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

wearing of safety glasses and working gloves is recommended. Weight 1135g (2 1/2 lb) being best suited to domestic work. Handles are normally wood, usually Hickory, or synthetic resin.

Sledge Hammer

Used for the heavier jobs, such as driving in stakes or to break up concrete, stone or masonry. For lighter jobs just the weight of the head may be used for blow's, but for heavier work, the hammer is swung like an axe. Wear suitable protective clothing, including safety glasses. Weights 7, 10 and 14 lb.

Joiner's Mallet

Used to drive chisels or to tap wood joints together, where a metal-faced hammer would cause damage or bruising. Note that the head is slightly tapered to ensure correct contact with the work. Both the handle and head are wood, usually Beech or Lignum Vitae.

Soft-faced Hammers

Various types are available, with hard and soft rubber, plastic or copper faces. Some come with a choice of faces which are interchangeable. Useful for striking materials such as chrome wing outs, where a steel face would cause damage. In some cases, can replace a mallet for cabinet work.

Special Hammers

From here on, there are specialist hammers developed to meet the needs of various trades. These include a Brick Hammer for striking a bolster or splitting bricks; Woodcarving Mallet, with rounded body; Veneer Hammer, for pressing and tapping veneers into place; Upholsterer's hammer for driving tacks and nails in confined spaces, and Sprig Hammer, used by picture frame makers.

Power Hammers

More often referred to as 'powered nailers', these take the hard work out of fitting nails, staples etc. They are ideal where a large number of nails need to be fitted, such as fixing floorboards. They range from light duty (for use when fixing edge mouldings, picture frames etc) to heavy duty nailers, used to fix floorboards and garden decking etc.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Advice for using hammers

Always use the right hammer for the job, it will make the job easier and avoid possible damage to the hammer/workpiece.

Never hit nails with the side of a check or a hammer head. The metal at these points is not hardened as the striking face and could be damaged.

When assembling delicate work, use a piece of scrap wood between the work piece and the head of the hammer. This will prevent damage to the workpiece.

Use a nail punch to sink nails into the timber, again this will prevent damage to the work piece. A nail punch has a flat end (or slightly, concave) to fit the nail head rather than the pointed end which other punches have.

Where the handle is held in the hammer head by steel wedges, check regularly to ensure the wedges are tight. Timber handle can shrink in dry conditions.

If a timber handle does start become loose, place the head in water overnight, the water will cause the handle to expand and tighten in the head.

If a hammer tends to slip off nails, roughen the face of the head using a medium abrasive paper.

Always wear safety glasses when driving masonry nails or breaking up concrete

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

18 Pages of Questions and Answers

About painting a new house.
Q. We are moving to a new house that we've decided to paint ourselves, and are wondering if the new plaster on the walls and ceilings should be given a coat of primer or is there any products that you recommend for this. The house is 1,080 sq feet, 3 Bed. Would you have an estimate or a guide to the amount of paint needed for the whole house? E.McGowan

A. Two coats of emulsion over all the walls and ceilings would be standard practice.
Your first coat of emulsion with 10% Floetrol emulsion paint conditioner mixed in will take care of the priming / first coat.
Irrespective of what colours you choose for the various walls, you could paint them white on the first coat together with the ceilings to make it easy on yourself. You will find that the paint additive mentioned above will also make a huge difference when added to your second coat as well. Easier to do and looks better, no roller marks etc.
Mask all edges you don't want paint on for best results; 2" tape works pretty good.
Use dropcloths / old sheets etc on all floors to prevent mess.

Here's more food for thought plus a great **tip**: If there is a likelihood of posters etc being stuck with sellotape or the like to some of those painted walls up the road, you'd better make sure that paint is stuck on real tight in the first instance. The best way to do this is to add in 25-30% Emulsa-Bond (also known as E-B) into your first coat of emulsion and this will make sure that paint will stay put, even after being pulled with tapes etc! If you go this route, you can still use the Floetrol in your second coat.

If you are going to stay with the paint choice, you will need about 5 buckets of good quality interior emulsion, 2 for the ceilings and the rest for the walls. The Floetrol emulsion paint conditioner (1 litre per 10 litre bucket) will ensure a lovely smooth, roller mark free job with minimum effort. You may get away with 4 buckets but better get enough. You might like to pick up a bunch of paint sample testers in a paint store and experiment with the colours before you make final choice.

If you are up to it, you could hire an airless sprayer fitted with a, emulsion tip for a day and spray all the ceilings and first coat on the walls. I am reliably informed that you will do it in about a quarter of the normal time it takes to roll. If you do this, just cover glass / wood etc to keep off overspray.

You did not say how you plan to finish the doors etc, but assuming you are going to paint them, you will probably need about 5 litres of gloss, about 7.5 litres of undercoat / primer, box of filler like Pollyfilla, 3 sheets each 80 & 120 grit sandpaper and a litre or so of Owatrol oil for the paint and undercoat.

Mix about 20% Owatrol into the undercoat and about 10% into second coat. This will help grip, hiding and finish. You may also need a litre of varnish for the door saddles and a reasonable selection of brushes, 1, 1.1/2, 2, 3" should do, but invest in good ones while you're at it and don't forget a can of white spirits for cleaning them up. Good luck with your project.

Sea facing walls shedding paint?
Q. I live right on the seafront and am fed up to the teeth with paint peeling off most of the sea facing exterior walls. We've had several different painters do re-paints over the years, and despite each one criticise the work done by their predecessor, and assurances of a successful job this time, it still returned to the same old peeling paintwork.

A. Yes, we've heard it all before.. "you can be sure we will get it right ma'am" etc.
Problem is, to make money, the painter must be able to get in and get out of the job as quickly as possible. Sometimes when there is a bad wall needing what used to be a serious amount of time consuming and back breaking preparation… corners will be cut, i.e. get some colour up there on the wall and hit the road.
There have been huge strides in paint adhesion technology over the years and nowadays there is no excuse for peeling paint in your kind of situation.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

There is a way to paint your walls properly with no more peeling paint. First, all the old remaining paintwork must be properly removed, usually a power washer is best and quickest, but if at all possible, wash at a 30 to 40 degree angle to the surface to avoid too much water penetration while achieving maximum old paint removal. Leave it for a few weeks of good drying weather, and then you are ready for a paint job.
Choose a high quality exterior (water based) paint and mix in about 30% of a very strong gripper like E-B (also known as Emulsa-Bond and available in most good paint outlets) into the first coat only and apply. Apply your second coat **without** E-B. This process will ensure your paint will stick because the E-B will soak deep into the wall providing serious grip and it should not peel off. I've seen what can only be described as desperate situations totally cured using this process.
The wall must also be checked for mould, mildew etc and if present kill same with 50:50 bleach and water mix. (There is also a useful mould preventative paint additive now available called VC 175 Mould Stop which is quite useful in preventing the return of the mould etc)
A very high percentage of the smarter painters now use this method because it is reliable, and from their time point of view, very fast and easy also.
If you would like to help the finish coat you could add 10% of a very useful emulsion paint conditioner like Floetrol. So, next time you are having your wall re-painted let the contractor know what you want done, (whether he likes it or not) and this bit of useful info will make him take great care to do it right this time! If possible ask around among your friends or neighbours for names of some reliable painters rather than just take a chance.

Can I repaint the ceramic wall tiles in my kitchen?
Q. Can I repaint the ceramic wall tiles in my kitchen, as I would like to change the colour to match some new cabinets. S Greene.

A: Yes you can. All you have to do is get yourself a one litre tin of a preparation product ESP which you've probably seen lauded on numerous home TV DIY shows, about 2.1/2 litres of each good quality oil based undercoat and gloss and a decent paint brush or small smooth roller from any DIY or paint store, and you are half way there.
For an extra special, smooth finish, pick up a litre tin of Owatrol oil as used by most of the professional decorators, (in the old days people used white spirits to thin the paint which was very detrimental to the paint quality and ruined hiding power) as this will help the paint flow out beautifully without ugly brushmarks or streaks. It also helps the paint adhesion, hiding power and gloss retention. Add about 20% Owatrol to the undercoat and about 10% to your top coat. About £60 or so should cover all the paint materials, which gives you an extremely cost effective colour change!

Start the job by cleaning the surface properly with warm water & sugar soap. Wipe on the ESP to the tile surfaces thoroughly with a clean lint free cloth. Leave it 10 minutes or so at normal room temperature, and then wipe off gently with another clean lint free cloth taking care to turn the cloth repeatedly as a certain amount of dirt will come off in the cloth. (Follow instructions carefully – there is a new water based version of ESP out now which has slightly different instructions to previous solvent based version which I've noticed here & there)
Usually you can do one wall at a time, wipe on and then the wipe off.
After 90 minutes at normal room temperature, apply your undercoat with the 20% Owatrol oil added. Next day when it has dried, apply your gloss top coat, this time with about 10% Owatrol oil and leave it for about 24 hours at least to dry. Take note, oil based paint can take a week or more to cure properly so don't start poking at it with your fingernails (if you have that strange tendency!) for at least 10 days. Also try to avoid giving that area a hard time for as long as possible. In fact the longer the better.

Smoke Damage on interior walls?
Q. We had a fire in a sitting room which left a lot of smoke damage on one of the walls, I tried painting over it but the stain keeps oozing back out, any solution? Margaret Heffernan.

A. Smoke or fire damage can leave very hard to block out stains on the wall. There is a product I've come across called Seal Lock which works quite well on this type of nagging problem.
All you do is paint on the seal lock, and after about half an hour, apply your next coat. Do bear in mind that this product is very fast drying and if you need to clean brush etc you need a bottle of meths.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Making paint Stick to bedroom walls?
Q. Is there any way I can make sure emulsion stick on the wall of my daughters bedroom as she is always changing and pulling off posters etc and the sellotape pulls the paint off at the same time. Jim Byrne.

A. The only way I know is to apply an emulsion which has a very strong bonding agent like E-B (Emulsa-Bond) mixed in to it.
You need to stir in about 25% E-B into your first coat of emulsion, (it does not matter whether it is matt, vinyl or whatever)
Then apply the paint with a roller or whatever and I would be fairly certain based on my experience that you will not pull that paint off, even with repeated pulls of tape etc.
This is a great idea for anybody that wants to paint a wall that may be used for sticking up posters etc.

Rusty Edwardian Gutters?
Q. I have old Edwardian cast iron gutters and down pipes that are quite rusty but otherwise intact, is there any way I can protect them from further deterioration? May Kirby.

A. Yes, remove all debris and clean them as best you can. A power washer would be ideal to shift the old ground in dirt. If you don't own a power washer, you can rent one in your local hire shop for a few quid a day.

After the gutters have dried fully, get your hands on some that old ever-useful Owatrol oil and a can of exterior quality oil based gloss paint, whichever colour you choose.
Mix them up half owatrol and half paint, and apply directly to the rusted gutters with an appropriate paintbrush. For your information this mixture will do two things at the same time, i.e. it will penetrate deeply into the rusty steel, getting into all the small nooks and crannies, pushing out any remaining moisture and air while giving it colour at the same time. This idea also makes a solid colour oil based stain that works great on wood, concrete etc.

Leaking attic tank caused bad water stains.
Q. I have a very badly stained ceiling, the result of a water leak from the attic tank. I would appreciate if you could advise me how to treat the problem as the stain is still coming through. Dympna.

A. This is a fairly easy problem to fix. All you need is to apply an appropriate stain blocker with a brush and finish off with a coat or two of paint. These stain blockers come in various types, generally water based, oil based or alcohol based. The best type for water stains is the alcohol type, and next best would be the oil based. Note that a water based stain blocker is no good on water borne stains but would work well on oily stains. Its almost like opposites work best.

There are a few types of stain blockers on the market and one of the better ones I've come across is a product called Seal Lock. (**Tip**: Seal Lock dries extremely fast and you might not be able to wash out the brush afterwards unless you have a supply of metholated spirits)

How to avoid streaks in paintwork

Q. The articles are great. A few weeks ago you wrote about how to avoid streaks in paint and you recommended two brands of mixture. As I've mislaid the article could you please let me know the names and where they can be purchased? George O'Halloran.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A Thanks for your kind comments. We've had many requests like this so here's a tip regarding same. If you find these articles useful, or any other similar articles for that matter, just cut them out as soon as possible and pop them into a folder marked DIY or Home Improvement Tips etc. Keep the folder in a safe place, like your garden shed hanging up on a nail and it will always be there when you need it. Great also for essential home maintenance phone numbers, web sites etc.
The products I mentioned a few weeks ago were called Owatrol Oil and Floetrol. Here's just a brief reminder again of what they do.
Any time you are using oil based paint such as household gloss, undercoat, satinwood, varnish, eggshell etc, when the paint gets a bit tight and the brush starts to drag a lot add a few teaspoonfuls of the Owatrol oil. Just enough to make it flow easily. It will give you an enviable finish every time.
You will also find that you can even paint in very low temperatures using this method, and still get a great finish, that is assuming you don't mind the cold!
Any time you are using emulsions, either indoor or outdoor and the paint starts to dry too quickly etc, add about 10% of Floetrol and stir in. This will result in a much easier application and a streak-free finish. It is especially useful in deep colours and low hide colours like yellows and reds etc. Great also for rag rolling, colour washing, sponging etc.

Can I change the colour of my PVC windows?
Q. I was hoping to change the colour of my PVC windows and doors, but don't know how to go about it. M Crehan.

A. You can paint those PVC windows and doors any colour you like thanks to a clever product called ESP (short for easy surface prep) now readily available in practically any hardware, or paint store.
I would suggest you choose an oil-based satin or gloss paint to do the job for maximum durability.

Wash the areas to be painted with warm water and sugar soap and allow to dry.
Now, to do the job all you have to do is get some clean lint free cloths, soak with ESP and wipe it all over the surfaces you wish to paint. Do one window at a time. Read the instructions carefully.
Leave that to cure for at least 90 minutes at normal room temperature and after that you are ready to apply your gloss or whatever.

In case you are unsure if the paint will stick, you will know as soon as you start to apply the paint, i.e. if the paint starts to crawl or run away from the brush you have not applied the ESP properly. If this happens, just wipe / wash off the paint in that area and re treat that area with ESP. On the other hand, if the paint goes on in the normal way, everything should be ok.

When you are finished applying the ESP, dispose of the cloth properly as per instructions on the tin.

Another tip to ensure you get a lovely smooth, brush-free finish is to add some Owatrol oil to the paint if it feels draggy or heavy. This will also help with paint adhesion.

Painting a dark house in bright colours?
Q. We just bought a house that is painted a very dark grey and want to paint it white. The surface is flaking in many areas what is the best way to get this job done? Ann McBride.

A. Sweep off all the flaking bits with a stiff brush or you could power wash it off. I prefer sweeping because you don't wet or soak the wall.

Generally speaking, if you try to paint white on top of a dark, you would require three good coats to get the proper hiding power, but there is a quicker and less labour intensive method used by many contractors.

After you've done the most important part, the preparation, apart from tools etc you will need a good quality exterior water based paint, E-B, and some Floetrol, and here's a real neat trick on **how you should be able to do it in just two coats instead of the usual three.**

Mix in 25% E-B into your first coat of paint and apply. The E-B will deal with the flaky condition as well as help with hiding power.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

When your first coat is nice and dry, apply the second coat, and this time mix in the Floetrol emulsion paint additive (do not put E-B in your second coat) at a rate of 10% +/- and apply.

You should have the equivalent of a good three-coat job done at this point.
Tip:
For readers who have exterior walls that look a bit tired but you don't want the expense of a two coat paint job, you can get a tremendous one coat job done with a combination of E-B and a high quality exterior masonry paint as mentioned above.

Paint spill on roof tiles?
Q. Emulsion paint got spilt on to the roof tiles of my front porch, I've done everything and I cannot remove the paint from the tiles, as it seems to have soaked in. Do I have to replace the roof tiles? B McNally.

A. If you wanted the paint to stick it probably wouldn't, but there you go. My suggestion is to re-paint the porch roof tiles. Simple as that.
Choose a superior quality exterior masonry paint that matches all the rest of the roof and mix in a product called E-B (Emulsa-Bond) 50:50 into the paint. E-B acts like a stir-in glue that makes paint stick to otherwise questionable surfaces.

Pick a reasonably good day and apply one good coat directly to all the tiles. When that dries, if the 'bad tiles' are adequately covered you are finished. (Usually one good coat does the job)
If you can still see some of the offending paint looking through, apply another coat of the exterior emulsion, but this time without the E-B. (only use E-B in your first coat). You should end up with a fresh looking new porch roof. Lots of people actually repaint their faded and tired looking old roof tiles using this method. (Please bear in mind, working on roofs can be very dangerous, so don't even think about it if you are not very capable and have all the proper access equipment, ladders etc)

Q. I have loads of decorating to do, but I hate the smell of paint, any ideas? R Moran

A. Actually there is a clever little product I've come across from Australia of all places, called Paint Odour Eliminator. It is an additive that you add in to your paint. Just a few drops. The bottle has graduations to indicate the mix ratio for different kinds of paints, solvents etc.
I'm reliably informed that it works very well in gloss, varnish, cellulose, even two-pack floor paint which gives off quite a strong whiff. It is stocked by most of the better specialist paint outlets and sells for about €10-00. Well worth a try I'd say.

Varnish peeling off my teak windows
Q. My teak windows and doors were varnished but they have peeled and faded and look awful, what can I do? M McCarthy.
A. All is not lost, but a bit of elbow grease will be required to get them back to looking good again. Try the following which should deliver a satisfactory result.

First you must strip all the remaining varnish off and you can do that relatively simply using a paint stripper like Nitromors. Follow makers instructions carefully.

When all the old varnish is removed, wash off all traces of the stripper thoroughly, a power washer at medium pressure would be ideal if you have one, or maybe you could just rent one down the road for a few quid.

When all traces of old varnish and stripper have been removed, you can restore the original colour of the wood with Net-Trol. Wet the wood first, then apply the Net-Trol with a brush. Agitate the surface slightly with a stiff brush shortly after application. Leave it for about twenty to thirty minutes and then rinse off. A power washer would do the best job. You will be amazed at how new the wood will look after you've done this.

Now you are in a position to re-coat the wood to preserve that look. If you want to keep the natural look I would recommend two coats of Textrol which is applied wet on wet. This stuff penetrates

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

deeply and gives a nice matte, anti-U.V. finish. Allow at least four good drying days before applying Textrol. (Tintable and now available in two ready to use tints Golden Oak & Rustic Oak)

Another alternative if you want something really upmarket is Deks Olje (*O-lea*) D1, normally used on wooden boats, yachts etc this is another deep penetrating oil which leaves a matte finish, or if you would prefer a lovely high gloss finish, you could apply several coats of Deks Olja D2, preferable on top of a coat of D1.

How to transform those boring, dreary kitchen presses, cabinets, wardrobes or tiles on a shoestring budget.

If you have a kitchen full of dull presses or cabinets, boring tiles in the bathroom, or weary wardrobes in the bedroom, take heart... you don't have to take out a big loan to refit the whole place, just freshen it up with a few tins of paint and a little bit of TLC. (tender loving care)

"Oh, but surely its impossible to paint kitchen presses, tiles and other shiny surfaces, because the paint will just peel off" you say!

Well, believe it of not, you can! with the help of an amazing new product called E.S.P. (short for Easy Surface Prep)
I first came across it on T V shows such as, Beyond the Hall Door etc where it has been rightly hailed as one of the best new painting or decorating products ever seen and I fully agree.

E.S.P. will make it possible for you to change the look of all those tricky, and normally very difficult surfaces without sanding, dust or hard work.

Transform the look of your presses, tiles, wardrobes to any colour under the sun with any oil or water based paint for the price of a few cans of paint, and probably for well below £100.

Paint the fridge to match the presses, or the wardrobes to match the new curtains or whatever. The possibilities are endless and limited only by your own imagination.

In fact, you can even use E.S.P. to change the colour of all those other doors, architraves and so on. Gloss over gloss, varnish over varnish, all are now possible, and at minimal cost to you which is always welcome news.

It is a good idea to use an oil based paint in the bathroom because of the moisture etc. If you use a water based paint elsewhere, bear in mind whether its needs to be washable etc. (Note: give the paint time to cure properly before you give it a hard time)

More helpful ideas.
Here's two more interesting items that will be a huge help in any or all of the above scenarios. If you are using a water based paint (emulsion) add about 10% of another amazing new product called Floetrol. This will ensure a streak-free lovely even finish, especially on deep colours or vinyls, and it is also a dream in yellows, reds etc. Saves a coat or two also which is no harm work-wise!
If you are applying an oil based paint, add some Owatrol oil and this will ensure a really smooth, brushmark-free, rich finish making your work look like it was done by a pro.

Faded wooden garden furniture
Q. My wooden garden chairs and table have faded terribly and look very dry, should I varnish them or is there another option. I never put anything on them since I bought them?
James Moran.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A. Some people like to simply leave garden chairs etc out there in the wind and rain and forget about them. Others treat them with the wrong finish resulting in the finish peeling off. Here's a few simple ideas to get your furniture looking lovely again.

Firstly, you need to get the wood cleaned up and its colour restored, you should be able to pick up a new product out there called Net-Trol that is capable of doing this job really well. I use it to bring back the original look to faded wood and even fibreglass. Its great also on faded teak windows or doors after first stripping with Nitromors.

First you must wet the surface thoroughly and then apply the Net-Trol which can be diluted up to 4:1 ratio depending on how dirty or faded the deck is.
Leave it for about 20 minutes and then give it a quick light scrub with a stiff brush. (Follow instructions) Rinse off thoroughly with a hose or better still a power washer at low to medium pressure. When fully dry, your wood will be back to how it looked on day one, amazing but true! If you spot any rust present near screws etc, spot prime before going any further with a drop of Owatrol oil and let dry.

Next, to keep them looking at their best with a nice natural look, you could apply something like Textrol, a clear, anti-UV penetrating oil that is easy to apply. Let the wood dry out fully over three or four average drying days. Just two coats wet on wet one after the other and you end up with a lovely natural looking matt finish that will not peel or flake. Wipe off any excess and do not allow it to pond.

If you are really fussy, you could apply several coats of Deks Olja D1 that penetrates the wood deeply and leaves a nice, matte finish. This stuff is used a lot on wooden boats. If you want a highly durable, yet flexible glossy finish, apply a few coats of Deks Olje D2 afterwards.

For a completely modern or different look, you could also use a "stain" of any colour oil based paint, gloss or matte mixed up to 40% with my old favourite all-rounder Owatrol oil as mentioned in this column last week. In that case a 4:1 wash with Net-Trol will suffice just to clean the surface before staining. This durable finish would be expected to last up to 6 years or even longer without any peeling or flaking. This type of finish would be very easy to wash if needed.

Q. I have badly rusted gates and railings which I've painted with all sorts of stuff but with very poor results, help please! G Meehan.

A. There is now available to the general public a super method for treating rust on gates, railings, fire escapes, and so on.

This stuff, I am reliably informed, is used mostly by professional painters, decorators and also semi-state bodies like Dublin Corporation on many of the parks railings etc. Owatrol oil (*O-WA-TROL)* as it known, has many very useful applications, one of which has been found to be the treatment of rust. (It also works great making oil based paint stick to sills, wall cappings, facia boards etc.)
To sort out the rust all you have to do is, apply the Owatrol oil with a brush or whatever all over the metal surface (even seemingly good areas) with particular emphasis on the big lumps of rust. Saturate those areas and leave for at least a few hours to soak in.
Owatrol works in a most unusual, but yet common sense way, i.e. it soaks right in through the rust into the base metal and forces out any hidden moisture and air, otherwise known as the food for rust.

Next, use a scraper to remove the heavy flakes of rust, brush away any loose particles, and you are ready to paint. No need for tedious wire brushing or sanding. It does not matter if you don't paint right away or even for several weeks after, as the Owatrol will have sealed up all the rust pores.

All you need to do now is apply a coat (or two) of **any** good quality **or colour** oil based primer with about 25% Owatrol added to it, (this helps the primer level and flow out properly) Then finish by applying an oil based topcoat of any colour with about 10 to 15% Owatrol added for better flow and finish. This relatively simple exercise will result in a job that should outlast anything you've ever seen before. I used it on a rusty aerial bracket 4 years ago and it still looks as good today only for a little less shiny, but it held the rust back.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Painting effects
Q. I would like to do some painting special effects like sponging etc around the house, what is the best way to go about it? Martina Caldwell.

A. This is an area where you can really let your creativity run wild. Anything is possible such as breathing new life into an otherwise dead room, or even doing up old furniture to match this or that. With a little bit of practice and a few very simple tools you too can design your own masterpiece, be the envy of your friends while adding value and beauty to your home. With faux finishing techniques you can do all this and more.

This decorating technique has been around for a long time. Faux finishes, as they are described can be applied using different techniques such as "sponging" for giving a deep textured rich look to walls, ceilings, or furniture; "ragging" where a crumpled rag is used for soft and delicate effects as a backdrop for furniture or artwork; "combing" for subtle contrasting lines; "marbling" for a distinctive appeal with a luxurious feeling; or "woodgraining" to create the rich patterns and colours of fine wood without the high price- tag.

Sponging is perhaps the quickest and easiest way to go faux. It lets you create colourful walls from a dappled, mottled look to one of marble. Subtle or bold design variations are limited only by the number of colours, the contrast between different shades and the variety of application techniques used. Here is a quick run-down to get you started.

Apply a base coat using any good quality interior satin or semi-gloss oil-based or acrylic, water based paint in the colour of your choice. Most people go for the water acrylic-based version nowadays.
Once the base coat is dry you are ready to sponge. Mix 3 parts of oil
Based paint with one part Owatrol oil **or** 3 parts of acrylic with 1 part Floetrol. Dampen a large sea-sponge (synthetic sponges leave hard-edged identical impressions that don't flow together very well) in water and squeeze out the excess. Lightly dip the sponge into the paint and blot off any excess on a paper towel.
3. **Now press the sponge** lightly against the wall, repeating this in an overall pattern and texture, making sure the base coat is showing through.
Rotate and twist the sponge (except when touching the wall) so you are not creating repetitive patterns or marks.

4. Work the edges of the wall first. Balance the finish on the wall to match the edges. Stand back once in a while to judge the uniformity of the pattern or finish. (If your acrylic is drying too fast and you are losing the "wet edge", add a little more Floetrol) You can make corrections by using the base coat colour and a new sponge. Whilst the pattern will be quite irregular, try to keep the amount of paint applied consistent for a uniform appearance. Finish one wall before starting the next.

Important note: ***Always experiment on sample boards to find the best colour combinations using tester bottles, and practice your sponging technique before starting on the actual wall. Sponge one square meter at a time.***

Always use the darkest colour (or the lightest if sponging over a dark base) first. Use the least amount of this colour. Dab a bit more with the second colour, filling in blank areas with some overlap onto the first colour. The third colour should overlap everything, leaving no glaringly blank areas. A third colour close to the base coat colour will blend in the first two colours and even-out the overall visual texture. Always let the paint dry thoroughly between applications. When sponging only one colour over the base coat, go for close in value for a rich subtle look. For a starker effect use contrasting colours such as blue or green over yellow.

It is a good idea to thin acrylic (but not with water) when sponging to achieve more translucent, softer colours and avoid premature drying. The Floetrol will extend your "working time" in acrylics or the Owatrol will do the same in oil based paints.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Painting MDF with emulsion

Q. I've made a big dolls house out of MDF, and as I would like a realistic flat finish, I'd like to know if I could paint it with emulsion in different colours? John O'Mahony.

A. You can paint it straight with any emulsion but I would not be too sure about it adhering! However, there is a commonly available stir-in primer called E-B, a great favourite of mine that will make sure your emulsion sticks to the MDF. I used it once on MDF when I painted it with a navy blue emulsion, and after only one coat with a medium roller, I had a perfect finish which hung on for dear life. Well worth a try I'd suggest. By the way if you or any reader would like to use MDF outdoors, you can by using E-B, but this time mixed in to an exterior quality masonry paint.

Give that tired garden furniture a whole new lease of life.

If your PVC or wooden garden table, benches or chairs look like they've been dragged up from the bottom of the sea don't despair, a simple, and highly cost effective solution is at hand that the average DIY'er can easily take on.

Let's take the wooden type first.

Firstly, If you've just bought new wooden garden furniture, I recommend two coats of Textrol to keep them right in the first place. Every other year or so, just apply one top-up coat and that's it. It's a dead easy to apply.

All too often, tables, chairs and benches etc are either treated with the wrong finish resulting in peeling, etc. or not treated at all leaving them to the mercy of the elements.

Here are a few simple steps that will breathe a new lease of life back into them. Test for porosity first by placing a few drops of water on the surface and see if they go in, if they do, Net-Trol will work very well. I got this great but simple tip from a woodcare friend of mine a while back and it works a treat. If the water does not penetrate there may be an old stain or oil still lurking about beneath the faded wood surface and that should be removed first for best results. You may need something stronger that Net-Trol to take out old oils/ stains etc.

If coated with an old varnish, remove it with a stripper following maker's instructions. Next wet surface completely and apply a coat of a great new product called Net-Trol. Leave the Net-Trol for about 10 minutes and then agitate with a stiff brush. (Read instructions) After about 20 – 30 minutes, rinse off with a hose or a power washer (at low to medium pressure) and when dry your wood should be back to how it looked on day one more or less.

Note: If any rust present near screws etc, spot prime with Owatrol oil and let dry. (After wood dries out)

Next, to keep them looking good, apply 2 coats of clear, penetrating Textrol one after the other for a lovely natural matt finish. (wipe off any excess and do not allow to pond". If you are really fussy, apply several coats of Deks Olja D1 as used on wooden boats which also gives a matt finish, and if you want a high durable, yet flexible gloss finish, apply a few coats of Deks Olje D2 afterwards.

For a totally different look, you could also use a "stain" of any colour oil based paint, mixed with up to 40% with Owatrol oil.

Plastic garden furniture.

You can clean them up really well with the Net-Trol used in the same way. When completely dry, apply a light coat of Owatrol oil with a clean cloth and buff to a shine. If you can get your hands on a product called Polytrol it will buff a bit easier than the Owatrol. If you want to change the colour, use E.S.P. followed by any oil based paint that takes your fancy. The same applies to plastic downpipes, gutters etc. Now you've got no excuse, just get to it, and then sit back and enjoy.

Gas heaters and old bikes.

Q: Its my daughters birthday in 2 weeks, and we have bought an old bike for her, as new was out of our budget this year. Some of the chromework is a bit rusty, but other than that it's not too bad. Hubby reckons you can't paint over chrome, but I think that there must be something we can use to fix it

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

up. Any hints? Thanks in advance, for some quick responses, as we really only have this weekend to fix it up. Angela Flanagan.

A:
It's time for our old friend "ESP" again! Gawd, I wish I had shares in that stuff! Seriously, this is the thing to use before painting chrome, I actually asked this question of my local hardware store genius as I intend to renovate an old chrome dining suite by painting it matt black like the modern ones & he definitely said.. use ESP first..
I painted my old Superser gas space heater with gloss black engine enamel
(its heat resistant) and prepared the surface with ESP. It has stayed on for 5 years and no sign of peeling etc. I took the panels off and used the spray can enamel to get a good finish. Hope this helps

Can I paint the tiles in my bathroom?
Q: Can I paint the old wall tiles in my bathroom and kitchen?
Maureen Hickey.

A: The answer is yes, and it is very easy to do if you are handy type. All you have to do is get yourself a one litre tin of that remarkable preparation product ESP which you've probably seen lauded on numerous home TV DIY shows, about 2.1/2 litres of each good quality oil based undercoat and gloss and a decent paint brush from any DIY or paint store, and you are half way there. For an extra special finish, pick up a litre tin of Owatrol oil as used by professional decorators, (in the old days people used white spirits to thin the paint which was very detrimental to the paint quality and ruined hiding power) as this will help the paint flow out beautifully without ugly brushmarks or streaks. It also helps the paint adhesion and hiding power and gloss retention. Add about 25% Owatrol to the undercoat and about 15% to your topcoat. About £60 or so should cover all the paint materials, which gives you an extremely cost effective bathroom change! You can do similar small budget miracles in the average kitchen with old presses or cabinets and old boring tiles.

Clean thoroughly first with warm water & sugar soap. Wipe on the ESP to the tile surfaces thoroughly with a clean lint free cloth. Leave it 10 minutes or so at normal room temperature, and then wipe off gently with another clean lint free cloth taking care to turn the cloth repeatedly as a certain amount of dirt will come off in the cloth.
Usually you can do one wall at a time, as usual follow the instructions on the can.
After 90 minutes at normal room temperature, apply your undercoat with the 20% Owatrol oil added. Next day when it has dried, apply your gloss top coat, this time with about 10% Owatrol oil and leave it for about 24 hours at least to dry. Take note, oil based paint can take a week or more to cure properly so don't start poking at it with your fingernails (if you have that strange tendency!) for at least 10 days. Also try and avoid using that area for showers for as long as possible. In fact the longer the better. Have fun.

Mould on tile grout.
Q. The grout on my kitchen and bathroom tiles looks awful no matter what I do to clean them, any suggestions? Deirdre Mannion, Stillorgan.

A. Wash the area first as best you can and rinse thoroughly. I've only recently come across a couple of amazing new products made by an American company called Homax. One is called Tile Grout Coating It comes in a small bottle that has a sponge applicator on its lid.

All you do is, move the sponge along the grout line, and it leaves a coat of "paint" which impregnates the grout. Any "paint" that gets on to the tile surface can be simply wiped off with a cloth. Truly amazing stuff!

There is a sealer, called Silicone Grout Sealer, made by the same people, which locks in that look for up to four or five years or so I'm told.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

These two little wonders can be bought for about £12 for the pair in various DIY or paint outlets.

Bungalow walls peeling paint
Q. Our bungalow's exterior walls are shedding paint that we painted only one year ago with a well-known exterior paint, what is the cure? Jim Keating.

A. This is not altogether an uncommon problem, and there is a relatively easy and low cost solution. First of all, it is fairly safe to say that the reason your paint is peeling off is because of inadequate surface preparation, and not bad paint.

You must first remove all traces of loose paint, preferably with a stiff sweeping brush or with a power washer, which you can hire at your local Tool Hire shop, if you don't own one. This is best accomplished by aiming the washer water jet at a sharp angle to the surface rather that direct. Paint comes off easier, and you are not "injecting" the wall with water, which must dry out properly prior to any painting. (Allow at least a week of good drying.)

After wall has been properly cleaned, you must ensure the new paint sticks properly to the wall, and this is best done by using a stabiliser. There are various well known makes available such as Sandtex, which you apply like a coat of paint prior to applying the actual paint.
Alternatively, there is a stabiliser that I've used successfully many times, called Emulsa-Bond (or E-B), which is mixed into your first coat of paint only. This saves you the job of applying the stabiliser altogether. E-B is a more expensive option, but it saves you the time and hard work!

After your first coat has fully dried, apply a second coat of paint and your job is finished. To sum up, clean wall thoroughly, apply stabiliser (or mix in E-B in first coat, see above) and two coats of good exterior paint.

Q: **My concrete path turns green after rain, any cures?** Mary Farrelly.

A: Thanks Mary. This is a form of algae that thrives happily in a damp environment. Lots of trees or shrubs nearby does not help, and it has, as you well know, a habit of coming back again and again. You can control it fairly well with a product called Net-Trol, mentioned on previous occasions in relation to other un-related problems. You could also use a bleach and water mixture 50:50 but it would be generally considered very harmful to any surrounding vegetation, etc.

I would suggest you do the following. (a) Wet the concrete path
(a manageable area) thoroughly. (b) Mix one part Net-Trol with two parts water; apply with an old sweeping brush or the like. (c) After 10 minutes agitate the wetted surface with a stiff brush of some sort, and leave then it for about twenty minutes. This is best done on a damp day as the chemical action will not take place if it dries before it has a chance to act.
(d) Rinse off fully. Don't worry about it getting on to clay nearby, as it is totally environmentally friendly. If you have a power washer, you could use that to rinse the Net-Trol off for an even better job.

Q. I have a 90-year-old cast iron bath that is in bad need of restoration. I was thinking of getting in one of those companies who do baths but a friend told me you can get a special paint to renew baths and that I could treat it myself in my spare time. Have you heard of it and what would you recommend? Jim Higgins

A. You have two choices basically. The easiest one being as you mentioned to call in a bath re-surfacing company which you can easily find in the Golden / Yellow Pages under the same heading,

They are totally geared to come in, do all the relevant preparation, and generally they spray on a brand new surface of any colour within reason, in no time at all, leaving your bath just like new. Not cheap usually, but the upside is they do all the business from beginning to end.

Alternatively, if you've got some spare time, like doing a bit of DIY and are reasonably competent with a paintbrush; you can do the job yourself with a new product I recently came across. It comes from the U.S A, and its called Tough as Tile Sink & Tub Finish.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

As with all paint jobs, you must first prepare the surface properly for it to work. This product is a two-part epoxy coating designed especially for refinishing and restoring sinks, baths and tiles. If you are not prepared to clean the bath thoroughly, don't even bother doing it because it will probably peel off and you will have wasted your time and money.

To prepare the bath you need to remove all flaky bits, use a very fine wire wool and sugar soap to really get into the pores and to remove all traces of scum that tends to gather. I would suggest you do this at least three times and give it a final rinse of hot water to finish it off. It would be an idea to mask off any areas you don't want to paint also. Don't spare the elbow grease!

When you apply the paint (if you go that route) keep the room warm and dry and leave it for a few days as per the makers instructions to cure properly before using the bath again. (Use somebody else's shower meanwhile!)

The product mentioned above, is a self levelling, brush-on finish that won't leave brush marks and leaves a high gloss porcelain-like finish that remains beautiful for years or so I'm told. Tough as Tile is designed to stand up to hot water.

It is available in white & almond only. (I understand it can be tinted, but you would have to consult your paint stockist about that.)
One U.S. quart will do the average bath for about €45 inc VAT. It is available in the more specialised paint outlets and I don't think the big DIY stores have it yet, but I am open to correction.

General Aerosol Spraying Tips
SURFACE PREPARATION:
Surfaces to be painted should be clean, dry and free of oil, grease, rust, wax, loose paint and other contaminates.

Extremely slick glossy or previously painted surfaces should be lightly sanded to provide better paint adhesion. If aerosol contains either a water or oil based coating you could use a great time and work saver like ESP, an easy surface prep primer to act as a gripper instead of sanding.

Areas with exposed rust should be scraped clean with a scraper or wire brush and treated with a good rust inhibitor like Owatrol oil, that penetrates the pores and cavities and gets in to the steel behind rather than just sit on top which tend to be not so effective.

Always apply a good-quality primer before painting over wood, bare metal or when changing the colour dramatically.

Cover adjacent areas to protect them from overspray. You can use old sheets on the floor or over furniture etc. There are many different varieties of masking products available now that will make life very easy on the preparation side. Masking tape is available in several widths usually 1, 1.1/2 and 2". Another very useful product are the rolls of brown masking paper with the masking tape already stuck on one end overlapping so that you can attach the pre-taped paper directly to where you want it. Usually it is available in 2, 6, 9 and 15" widths. You can also obtain rolls of pre-taped plastic masking material, which open out to about 6 feet and are very handy.
Paints should be applied under dry conditions at or near room temperature. Humidity and temperature conditions can have a significant impact on drying times.

APPLICATION: Shake can vigorously for one minute to ensure that the contents are mixed thoroughly. Make sure agitator ball is rattling inside the can. Shake occasionally during use.

Hold can approximately 12" from surface to be sprayed and apply finish in several thin coats for best results. Depress the spray nozzle only while moving and let go at the end of each pass to avoid double application of paint at end of each pass. For better results avoid spraying in an arc pattern because you will get a heavier coat in the middle and less at side / end of each pass. Overlap each pass by about 25% to maintain even finish. Applying a single, heavy coat may result in unsightly runs or drips.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The second coat of paint should be applied either immediately after the first coat or after the first coat has completely dried. Always refer to the product packaging for specific application procedures and dry times. **CLEAN UP & STORAGE**: Clean aerosol nozzles by **turning the can upside and pressing the nozzle until only gas emerges**. Store in a cool; dry place away from heat sources and direct sunlight.

CLOGGING: If a spray nozzle becomes clogged, rotate the nozzle a quarter turn and back. If this fails, pull the nozzle off the can and run your thumbnail through the slit at the end of nozzle stem. Rinse nozzle in lacquer thinner. NEVER STICK ANY SHARP OBJECT INTO THE OPENING AT THE TOP OF THE CAN. Prevention is always better than cure, so I'd recommend you do the following after every spraying operation.

Do I need to treat my new pressure treated deck?
George, a few weeks ago you did an article regarding treatment of decks etc. I recently purchased some good quality pressure treated deck timber that I'm planning to install myself. Do your comments on Seasonite refer to pressure treated timber as well as non-pressure treated timber, or is there another process I should follow. I am anxious to treat it properly in case it gets damaged by rain etc. Any advice you may provide would be greatly appreciated. Thanks in advance, regards, John McCarthy.

Thanks John. Sorry if I did not make it clear about whether pressure treated wood needs protection. The simple answer to your question is yes, it should be protected. The pressure treatment provides protection against rotting and insect damage etc, It does not save the wood from the effects of constant rain, and wind driven rain, freeze – thaw cycles etc. Rain will get into the wood after a while if left untreated. As soon as that rare bit of sun appears, the water inside the wood causes the boards to swell, which it turn, can cause cracking, splitting, cupping etc. So the trick is to keep that water out in the first place and save all that hassle and potential damage to your pride and joy investment. As I mentioned in this column before, there is a lot of confusion and mis-information about this whole issue. Some deck installers / sellers say that 'my decks are pressure treated' and don't need any after care. Maybe they genuinely don't know themselves, and in turn cannot tell their customers. I suppose, if you don't mind your deck looking like a bunch of old pallets laid out side by side, then you don't need after care. If you left your new car with its €2000 +/- paint job out there without the odd clean up or polish it wouldn't look well for long and the same applies to your wooden deck or wooden garden furniture. (Common sense says - take care of it and it will look fabulous for years and enhance your home for years to come.)

However, I would doubt if that's what you or anybody else would want. Some die-hards out there hold the view that decks are not suitable for this climate. If you don't know how to take care of your deck properly to suit our less than perfect climate, you may have some problems, but none that cannot be addressed or solved. If you do know the various tricks you will have no problem, simple as that. Products have been developed over many decades that are capable of withstanding all sorts of climates ranging from tropical to semi- artic and by some of those standards; our relatively mild climate is very easy to handle deck-wise.

On a new wooden decks, cladding and wooden garden furniture, I would usually apply one good coat of Seasonite. If you know of something else out there the same as it fine, but I have not come across anything similar as yet. I found that this stuff penetrates new wood very well, and it acts like a one-way valve in the wood's pores, i.e. it allows existing water or moisture to escape but will not let 'new' water in. The result of this is your deck / timber will be protected from the very damaging effects of all water and moisture related problems. Another important point is, the Seasonite will protect the new timber from algae and stuff like that. These organisms can, and do make deck surfaces very slippery when wet and you don't need to land on your back out there. The method described above is what I would describe as only the first part of a proper treatment for your new deck etc.

If you simply go ahead right away and prematurely oil the new deck or whatever with one of those oil treatments, even the deep penetrating Textrol, they generally cannot penetrate the pores of the new wood, because they are closed from the planing process at the sawmill, and as well as that, there is usually an oily kind of film on the newly planed timber called mill glaze which tends to not let most treatments penetrate properly, and if they don't penetrate properly they are not going to last.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Both of those factors prevent proper penetration by the ‘oils’ and as a result they don’t do a proper job and you are wasting your money in my humble opinion. That’s why, I suggest using the Seasonite as the first part of your new deck'' treatment. Another point worth mentioning is I don't think Seasonite is intended to beautify your wood per say; that comes later after it has settled down properly. You need to be patient. Again, like a new car engine, you need to 'run it in' and later on, after about six months to a year, you can think about making it look pretty. Any fading that does occur can be totally removed with something like Net-Trol, Deck Rins or Prep Deck and after that you can finally apply your Textrol or whatever. At that point, the timber’s pores will be more receptive and will allow proper treatment. My thinking is, if you are going to do anything with it, do it right first time, because it will pay you in the long run.

P.S. Here are three good deck tips you may find useful.

If you're having a bar-b-que out there on your deck, pick up a sheet of aluminium about 4 x 4 ft and place it on your deck beneath your b-b-q. This will catch any hot ash or grease etc from spilling on it. When you are finished with it just slide it in underneath the deck for use again.

Secondly, If you do have potted plants etc on it, move them around a foot or so every week or so and this will help prevent strange looking shading rings from different exposure to sunlight, dirt etc.

If you do decide to powerwash your deck, be very careful; keep your pump pressure down to about 500 p.s.i. maximum and wash with the grain, board by board. Personally I'd prefer to clean the deck properly with Net-Trol, Deck Rins or Prep Deck and better still powerwash it off after the cleaner has done its job. If you wash it at too high a pressure, or wash it against the grain you may damage the wood fibres and cause splinters which can be most unpleasant if walked on by bare feet.

I got a shed built thirty years ago, the concrete floor is thick with dust and the more I sweep it, the worse it seems to get. How can I treat it? M Forde.

Concrete floors can be a pain, especially when they've been down a while like yours has. New concrete floors frequently have a smooth troweled finish and tend to be a bit better dust-wise. Here's what I would suggest, having done a similar job a few years ago in a converted garage.

First you need to remove any obvious dirt and then vacuum the entire floor. If there's any blobs of oil or grease etc on the floor, try removing it with some cellulose thinners and a stiff brush.

If need be, hire an industrial vacuum from your local hire shop, in case your own home unit cannot cope. Don't even think about sweeping it because you need to clean it properly, and right now, and a good strong vac is the way to go.

When cleaned, you have two choices depending on whether you would like a clear concrete look or whether you would like a colour.

If you would like the clear look, all you have to do is apply one good coat of Owatrol oil which you can get from most of the better paint outlets. This will sort out your dust problem and will last for years and years. The Owatrol oil binds the concrete thereby preventing the re-occurrence of the dust, at least for a very long time.

You can do it another way also, (my favourite idea) i.e. colour the floor with a colour of your choice. Say you want the floor a nice red, just add about 40% of the same Owatrol oil to the red gloss, or a matte finish if you'd prefer that. Apply, and the colour will soak into the floor leaving a lovely, easy to maintain surface that again will last for years and years. By the way, you can apply either of the above with a standard, relatively smooth-haired, clean sweeping brush not a yard brush.

For any reader that's interested, you can do the same colouring trick on wooden floor boards, concrete driveways or even roof tiles that are a bit off colour.

Paint flaking off sills.

Q Can you please recommend a removal agent for old concrete external sills having layers of flaking white paint? I also intend re-painting them black. How should I retreat (if necessary) and what paint will I use? Also what paint would you recommend for newly plastered (3 years) reveals and plinth. This is for a renovated cottage. I intend to paint the sills and plinth

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

(top/btm/sides) black with white reveals in order to brighten up the front façade and your advice would be appreciated. E Scott
Thank you. You didn't say if the old paint was gloss, but I suspect it is. I think the handiest way to remove the remaining paint is with a blowtorch and a 3"scraper knife.

My suggestion would be, remove all the loose stuff with the scraper and wire brush the rest as best you can. Sweep off any remaining particles with a dry paintbrush or a hand brush.

If you absolutely want a super smooth surface to work on, you'll need to put in more effort and sand the surface as well, but from an adhesion standpoint there's no need to go over the top about all this, because you can get a first class result if you follow the following tips.

Prepare as outlined above, and when clean and dry, assuming you are going to paint with gloss, add about 30% Owatrol oil (paint conditioner) to your first coat and apply to the sill. That will ensure the paint will stick tight. On your second coat add in about 10 to 15% Owatrol and apply, & this will suffice. As regards the plinths etc, you could do the same as you did with the sill. Or, if you would prefer a matte appearance, choose an emulsion black and add about 30% E-B (Emulsa-Bond) to your first coat only and apply. That will take care of the adhesion and you will get excellent hiding and coverage as well. Note: If you decide to apply a second coat of that emulsion, apply without the E-B.

Q. When is a roller better to use than a paintbrush? Jim McKenna.

A. Use a roller where possible when painting larger areas, as this will provide a much more even finish and will also be quicker than a brush.
Where a roller may be unsuitable use a 4" inch or 6"inch emulsion brush.
Radiator brushes and rollers are available to help paint hard to reach places. Also Brush and Roller extension poles are available to assist painting ceiling and high walls.
Paint brush sizes 1/2" to 4" can be used to paint gloss etc on to wood surfaces.
To speed up the painting of door frames, window frames and skirting low tack masking tape can be used to protect the surrounding painted areas.
When finished don't forget to wash out brushes and rollers ready for the next time. Emulsion can be washed out with water, but glosses etc require a sprit based cleaner or a Brush Cleaner.

Swollen wooden window frames and chipboard worktops.

Problem: Here's a problem that several people have asked about, i.e. water or moisture getting on to wood, chipboard etc causing it to swell and become both unsightly, and in many cases needing replacement.

Solution: Allow the wood, or chipboard to dry for a couple of days, you can aid that process by removing or turning off source of moisture, ventilate, heat room, etc.
After wood has reasonably dried out, sand off the main swelling using a medium wet & dry sandpaper.

Next saturate the wood with several coats of Owatrol oil within a one to two hour period. (i.e. feed the wood's pores with the oil)

Next use 240 to 320 grit wet and dry paper using your Owatrol oil as a buffing liquid to smooth the area off to a nice even finish. Left as is you will have a nice matte finish. If you'd rather have a glossy or painted finish, use any good Polyurethane varnish with about 20% Owatrol oil mixed in or a Gloss paint ditto.

Wooden window frame bottoms can be a major problem area because of gathering moisture from condensation etc. Usually they swell and rot if not dealt with properly. Here's how to deal with a bad window frame.

First, remove any putty, and dry out the wood for a few days as best you can as above. Sand and then saturate the wood with several coats of Owatrol oil (as above). (Some people drill a small hole on the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

inside about 6mm at a 45 degree angle down through the bottom of the frame allowing any water etc to escape to the outside - if you decide to do this, after wood is dry, inject the hole well with Owatrol oil to prevent moisture or water ingress)

Make sure you get the oil well into the joints and end grain areas. When the oiled wood dries after a day or so, apply your putty and smooth it off properly.

Next you need to paint or varnish it, (oil based) and a good tip here is when repainting the whole window frame, apply an extra coat or two to the bottom third of your frame for extra protection. Adding about 10 to 20% Owatrol oil to your paint or varnish will help adhesion and levelling.

If you want to have a clear finish on exterior wood you could use the Owatrol oil as your main prep step and then topcoat the wood with three or four coats of a Scandinavian marine clear flexible varnish called Deks Olje D2. Most of the better paint speciality stores will carry those products.

Wood Finish: Know Your Products

There is a lot of confusion about the types of products that are available for the treatment of exterior architectural woods. Treating new wood can be a tricky procedure, so you need to know exactly what you're talking about. The following may help.

Stabilising treatments are a new type of protection. They are generally recommended as protection during the first year of exposure. This can be very practical, because finishing during the first year is not always recommended with some of the pressure-treated woods (PTW). PTW can also be prone to cracking and splitting while it's drying out. Stabilising treatments such as Seasonite etc offer a type of protection that is inexpensive and can be coated later with any type of finish.

Wood preservatives cover a wide range of products. To use the term, a company must register its product with the EPA and completely disclose its formulation. The active ingredients and their percentages must be listed on the label, although this is no guarantee that the product will actually be effective for its intended use. These active ingredients are almost always mildewcides and fungicides. Many clear finishes and stains also have mildewcides and fungicides, even if they do not register with the EPA or make pesticidal claims. As a class of product, wood preservatives do not offer the protection of a finish or stain, and they are generally less expensive. If a wood preservative is to be used, however, it will not be effective unless all existing mildew is first removed.

Water repellents. To be a water repellent, the product must pass a standard water repellency test. A simple test of water repellency is whether the water will bead on a surface after it is treated. Again, many clear finishes and stains are also water-repellent.

Exterior clear finishes technically refer to any finish which is non-pigmented and protects and beautifies the wood. This would include clear varnishes (now in limited use), as well as penetrating clear wood finishes. Exterior clears should offer all the advantages of water repellents and wood preservatives, but they also should hold a natural wood colour for a reasonable length of time (two to three years, depending on the climate and exposure). Naturally, they are more expensive than wood preservatives or water repellents. They are also quite easy to touch up and maintain as they wear out.

Lightly pigmented stains are similar to exterior clear finishes in that they should offer all the same benefits, but they also offer colour. But beware: Not all exterior stains offer the protection they should. Some products rely too heavily on the pigmentation to provide the protection against sunlight and moisture. Many exterior stains are difficult to touch up, because they are too heavily pigmented and the pigment changes colour with exposure.

Black Mould on bathroom ceiling

Q Could you give me any advice on treating a bathroom ceiling to eradicate black mould which spreads all over. I use Dettox Anti-Bacterial Mould & Mildew remover once or twice a year and keep two windows open when having a shower. Also there's no heat in the room. Do you think a

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

fan would be effective and would you recommend one on the ceiling or wall or would an extractor fan on the windows be best? F O'Reilly

A. Thanks You. The excess steam is the prime cause of your ceiling problem. The damp ceiling after a shower creates a perfect home for mould spores etc and your fan installation idea is the way to go I would suggest. Yes you can get fans that are mounted right in the windowpane, probably would be the easiest to install. I'd suggest a good quality wall mounted fan, about 6" to10" diameter located fairly high up on your perimeter wall as near to the steam source as possible. Ideally it should be wired to come on automatically when shower in action, probably linked to the light switch. Your electrician will be best able to advise you there. The wall-mounted unit will necessitate a bit more work but it probably be the better job in the end.

A ceiling extractor is not really that practical unless you have a flat roof situation and even then, you'd have to bore a hole in your roof which I would not recommend at all. That could open a whole new can of worms. There you have it as regards the fan situation.
To deal with the existing mould etc I would suggest the following: Wash the area thoroughly with a 50:50 bleach / warm water mix taking care of your clothes, skin etc as the bleach can be rough stuff. Re-paint your ceiling etc, and stir in some paint additive called Mold Stop VC175 available from lots of paint stores around the place. A 10ml bottle will treat up to 10 litres of paint. Just follow instructions on package. It works in all paint oil or water based, and I found it to really useful in preventing mould coming back on paintwork irrespective of whether it is woodwork or walls, ceilings etc.

There are a few great wood cleaners now on the market. These can have a wide variety of active ingredients, or can merely be detergent-type cleaners. The best ones on the market both clean and brighten the wood to give a better appearance before a clear finish or lightly pigmented stain is used. The one I've used with great success many times was a product called Net-Trol. They will also be effective in removing most types of mildew -- there are so many strains of mildew that no cleaner will kill all of them, I usually suggest to use a 50:50 mix of bleach and water.

Bad plaster on old interior walls
Q. The inside walls of our old summer house in Wexford, seem to bubble out and burst, and on other walls the plaster is being eaten away and flaking off in patches. The house has been checked for water leaks but none found, some people say the problem is caused by sea sand used in initial construction. Would you know of any ways to deal with the problem? We enjoy your column very much. A O'Reilly

A. They could be right about the sand. I would suggest you scrape or brush off all the loose stuff and then apply a good heavy coat of E-B (Emulsa-Bond) which penetrates deep and binds the loose sandy particles together. If you want to have some colour on the wall, throw in about 25% emulsion into the E-B and it will colour the wall to some degree. If the job needs another coat to bring up the colour, apply it neat without E-B. If you wish, try this suggestion on one area before going full hog.

Q. Have you come across anything that will take biro ink out of a white woollen sweater.
P Kelly

I get lots of new products in here from different suppliers to try out, and when I read your post card, I decided to try out one such item in my samples box aptly called Oops! on an ink stain like you mentioned, to see for myself what might happen. Normally I would have thought ink on a woollen sweater would not be too easy to remove successfully without possibly damaging the wool itself.

I found an old woollen, pure white pullover and squeezed out a blurb of ink from a ball point refill onto a section of the sweater. I rubbed it in and spread it around as much as possible. This was as good a mess as you are ever likely to find. The ink went right through to the other side. I left the pullover for a day or so to let the ink dry in fully.
Next I got my bottle of Oops! and applied the cleaner directly on top of the ink liberally, I then got a kitchen paper towel roll and pressed a few sheets of that on to the ink stain several times. I re-applied the Oops! and repeated the exercise with the kitchen towel.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The result was quite amazing… about 80% of the ink was taken out. After that, while the wool was still wet I washed it in a normal woollen wash, and when it came out of the washing machine, there was not a single trace of the ink!
Yep! I'm impressed with Oops! And it might be the answer to your problem. Oops! is also said to be highly effective removing dried in emulsion paint, shoe polish, oil, grease, crayon, and is safe to use on furniture, hardwood floors, carpet, fibreglass, vinyl, metal, glass, Formica and more.
Interestingly enough, one friend of mine, when I mentioned it to her, said she used Oops! recently to remove white dried in emulsion paint spatters from her new wooden deck, and she said it did a perfect job!

How do you make a rectangular room look more square?
Q. George, How do you make a rectangular room look more square? I'm moving into a new apartment and my bedroom is long and narrow. Is there a colour I should paint it to make it look bigger?
O Mannion

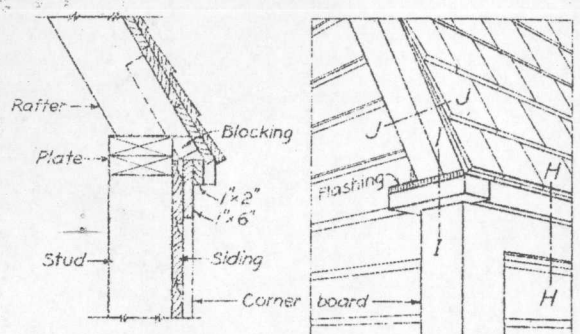
A. The main way would be by using special effects, or as some people call it Faux Finishing. (Faux comes from the French word and means something like false) There are a variety of Faux effects, but the one I would recommend in this instance is called ragging.

Assuming you want your room looking bright and airy, I would suggest the following:
If you want to try out all this stuff, you could experiment on a sheet of board like melamine or something like that, rather than going 'live' straight off.

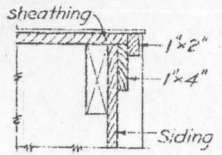
Choose a medium base coat like a creamy yellow / vinyl silk or a soft sheen finish and apply to the wall, and allow it to dry. Next get yourself about six old, but clean, dry cotton tee shirts.
Next, mix up about one litre of the base colour (above) with one litre of vinyl matte or soft sheen white and mix into that about one a half litre of a paint additive called Floetrol. (The Floetrol is used to keep the 'wet edge' open and can be increased or decreased depending on how long you want a wet edge)
Now, starting at the top right corner or the top left hand corner of the smallest wall (depending on your yourself) apply the mix to about a three square foot area.

Now, get one of the tee shirts, ball it up and apply it vigorously to the painted section creating a pattern. Apply the paint to the next three square foot section and repeat the above, taking care not to have straight lines and overlap the earlier ragged area. An important point about the rags is not to wet them too much., the whole idea here is that the cloths are used to remove - by absorbing, some of the paint you've actually applied already, so if the cloth is too wet your finish will be inconsistent.
If you discover that the first area has dried, or lost its wet edge before you catch up – add more Floetrol. Again, you can discover all that first on a test piece.
When you have that small wall finished, repeat the exercise on the opposite wall, rather than the wall beside where you started. Then do the remaining walls and blend in the corners.
One important tip is, after you start, don't stop and mix up enough material to do the whole room. In that regard the average paint requirement is about three litres for a 12 x 12 ft room. This type of painting is actually great fun and you can do all sorts of things, just let your imagination run wild!

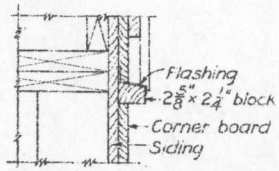
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



SECTION H-H

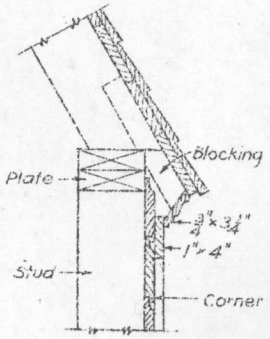


SECTION J-J

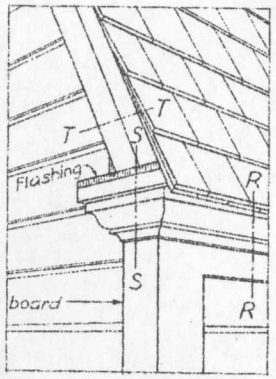


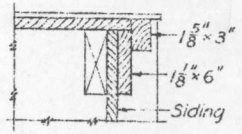
SECTION I-I

CORNICE NO-1

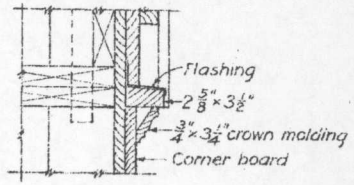


SECTION R-R



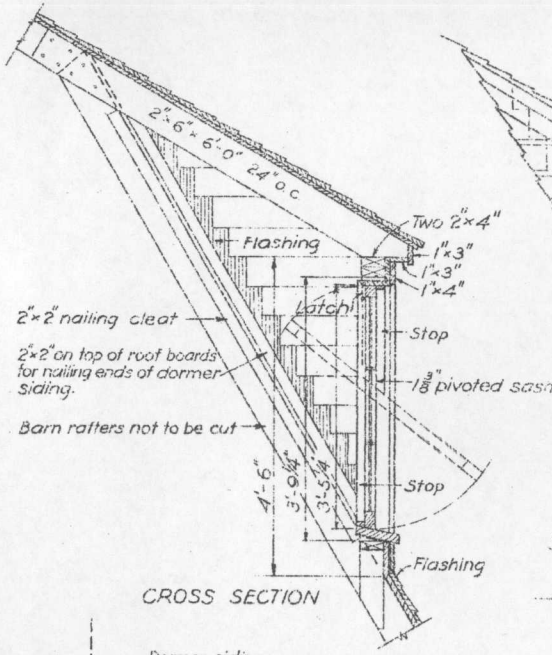


SECTION T-T

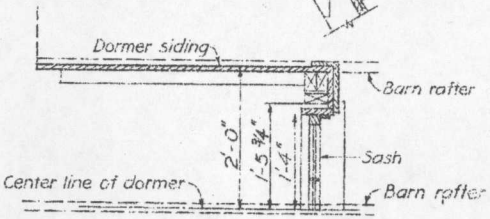


SECTION S-S

CORNICE NO-2

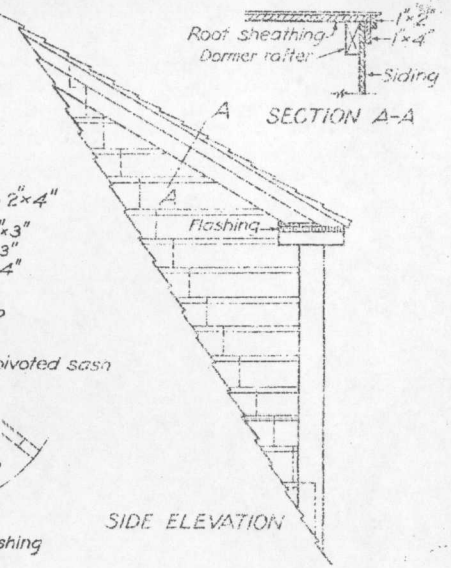


CROSS SECTION



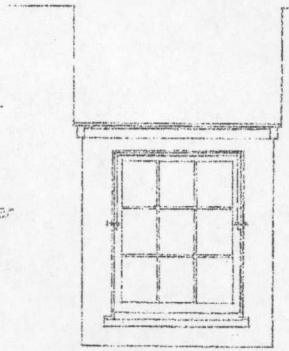
HALF PLAN

DORMER DETAILS
Scale ¾"=1'-0"

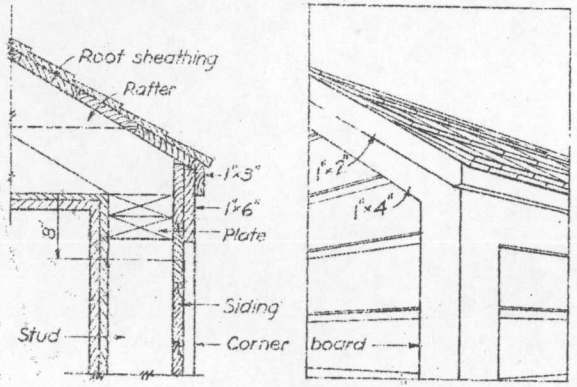


SECTION A-A

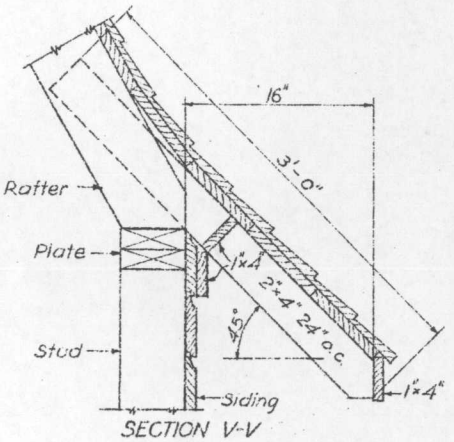
SIDE ELEVATION



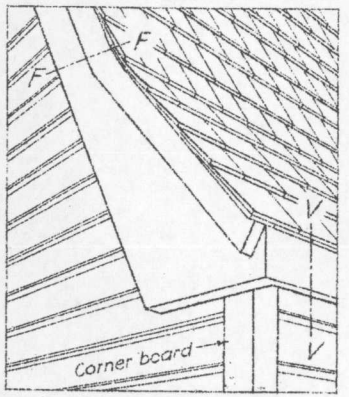
EXTERIOR ELEVATION
Scale ½"=1'-0"



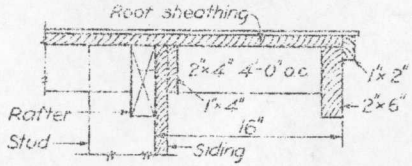
CORNICE NO-3



SECTION V-V



CORNICE NO-4



SECTION F-F

Scale 1½"=1'-0"

COOPERATIVE EXTENSION WORK IN
AGRICULTURE AND HOME ECONOMICS
STATE OF NORTH DAKOTA
NORTH DAKOTA AGRICULTURAL COLLEGE
AND
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

BARN EAVES DETAILS

USDA	EX. 2199	SHEET 1 OF 1

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Timber - rotting problems

wet rot

Every house uses timber in its construction or decoration, and while it can last a long time, it is a died material and nature has various methods of making it decay unless it is looked after. Providing it is well maintained, timber will last many life times. Below two areas of timber rot found in the UK are addressed - dry rot and wet rot.

Dry Rot

Dry-rot fungus is often thought of as a building cancer, rampaging through buildings and rapidly destroying any timber in its path. The fungus, which thrives in moist unventilated conditions, will penetrate brickwork to get to more timber and can cause widespread destruction of structural timbers, skirting boards and door frames, and wood flooring.

In short, the fungus can be thought of as 'living in masonry and eating wood', and because the fungus thrives in damp, unventilated conditions, it can occur in the areas of a property that are not often seen, such as floor voids, or behind timber panelling, so damage may be extensive before the attack is discovered.

What to look for:

Initially the fungus appears as off-white felt-like or cotton-wool like sheets on brickwork and timber, and, in later stages, can develop fungal strands as thick as your finger. Where the fungus is exposed to light, it often has a lemon-yellowish tinge.

Damage is often confined to timber but large flat mushroom-like fruiting bodies can easily grow through finishes such as plaster or paint. These fruiting bodies may be the first visible sign of a problem, and they produce numerous spores which are normally brick-red in colour.

Entirely dry-rot decayed timber can be crumbled between your fingers. The fungus leaves deep cracks running across the grain, and there is often evidence of off-white sheets of the fungus on the wood.

Treatment:

The term dry-rot came from the belief that the fungus is able to transport moisture from a source many metres away, to attack dry wood. In fact, although the fungus can transport moisture over several metres, it cannot transport anywhere near enough moisture to attack wood that is otherwise dry.

Treating dry-rot can involve removal of the affected timber (including all timber for a metre beyond the visible signs of the fungus), and extensive chemical fungicide treatments for all adjacent timber and the brickwork of any contaminated walls and plaster. However, this approach is expensive and unnecessary.

The modern approach is to use environmental controls, such as isolation and ventilation, which ensure that the damp, unventilated conditions required by dry-rot do not occur. The techniques are simple ways to ensure that the timber in a property does not become damp enough for dry-rot to attack, for instance replacing dry-rot decayed joists with new timber using joist hangers, instead of building them back into the brickwork, or by using ventilated skirting board details to encourage ventilation of a floor void.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Replacement door frames should have a strip of damp-proof membrane around the outside, to fully isolate them from damp or potentially damp brickwork, so the timber would never become damp enough for dry-rot to 'eat'.

If you have dry rot, it is probably best to have the problem looked at, and corrective action taken by a reputable specialist firm, so that you have a guarantee if the problems were to return.

If you would like further information regarding dry-rot, wet-rot, woodworm or damp problems in your property, please contact: Nicholas Clifford, Managing Director, Checkwood Environmental Solutions Ltd. Tel: 0208 393 7997, Email: info@checkwood.co.uk or web-site www.checkwood.co.uk

Wet Rot

Compared with dry rot, wet rot is hardly a problem ! It is basically the timber decaying naturally in the presence of high levels of moisture. There is almost always a structural defect causing the problem, it may be that the wall adjacent to the timber is suffering from damp, or water collecting on the timber. Any structural problem must be tackled at the same time as the timber is treated otherwise the problem is likely to reoccur. The problem may just be damaged paint finish on the timber allowing the actual wood to absorb excessive moisture. Damage is normally limited to the timber although the original structural problem may also cause other areas to be affected by damp (such as plaster or just decorations).

What to look for:

Check vulnerable areas of timber, such as window and door frames, for signs of rot. The bottom of frames is more susceptible to rot where water can collect or the wall/floor is suffering from damp. If the paint finish is damaged, this can increase the risk of wet rot. However, although the paint may look sound, the timber underneath may be rotting from the back. You will often see a professional builder push a thin bladed knife into painted timber frames, the blade should stop after a very short distance; if it goes in upto the handle, it is a almost certainly a sign of rot behind the paint. Timber suffering from wet rot will feel spongy (even through a coat of paint) and look darker than the surrounding timber. When dry, the timber will easily crack and crumble into fine particles. Timber in the roof can also be at risk especially where there is roof damage allowing rainwater to run onto the roof timbers.

Prevention:

Ensure that all external timber frames are adequately painted to protect the timber from frontal ingress of water.

Be aware of any damp walls and address the problem, it could be a missing/damaged damp proof course (dpc), a bridged dpc or a bridged cavity. If necessary seek expert advice as the symptom may be just a sign of a bigger problem.

Make sure that any soil and other debris is cleared away from around the bottom of timber frames.

Check the roof space for the ingress of water, you may not see daylight through a hole in the roof, the water could be running down the underfelt behind the tiles onto timber some distance away from the hole. When it is raining, go into the roof with a torch, the shining of water on a timber or felt normally stand out very easily.

Other favoured places for wet rot are under the kitchen sink, bath, shower, washing basins, toilet and behind the washing machine etc.; all areas where a small leak from

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

either a water supply or drain could go unnoticed for a long time but where timber could become saturated with water.

Treatment:

First of all treat any structural problem, there is no point in repairing the damage to the timber if it is going to reappear.

If wet rot occurs in structural timbers (such as roof trusses, floor joists), expert advice should be sought as the implication for structural integrity must be established.

In other areas, the rotten timbers should be removed and replaced; if the damaged area is fairly small, it can be cut away and a new piece of timber joined to that remaining. If the damage is confined to a very small area, an epoxy based repair kit can be used to fill the damaged area once it has been cut back to sound timber and the new surface of the wood treated with a suitable primer. Preservative tablets are available which are inserted into the timber adjacent to the repaired area to protect the timber 'from within'. If there is any doubt that the structural problem has been eliminated, the new and adjoining timber should be treated with a proprietary wet rot treatment before redecorating.

After repair, external timbers should be protected with adequate coats of paint or some other suitable timber treatment/preservative.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Earth bonding & electricity in the bathroom

Make sure you have isolated any circuit you are working on and see our electrical safety project

What is earthing?

The earth, or ground in America, in electrical terms, carries no current, and it is this that electricity will make a dash for when it is allowed to escape from its secure home in an electric cable or flex. This is because one side of the electrical supply, the neutral, is intentionally connected to earth. If someone touches a live conductor then a current will flow through the person, their shoes, the floor, the wall, via earth and back to the supply transformer via one or more earth connections of the transformer neutral. The person has completed the electrical circuit. Should any fault develop in an electrical system the electricity will always head for earth, taking the easiest route there. The electrical appliances and supplies in the home are of a much higher potential and if any of these become available to touch and are electrically charged at a different voltage to earth the possibility of an electric shock exists, with the current passing through the connection between the charged parts and earth.

If, for instance, a person comes into contact with a conductive part that is at a potential difference to earthed metalwork and
that metalwork; then a very serious shock can result. In order to eliminate this possibility, all electrical earths of circuits supplying equipment in the bathroom and all extraneous conductive parts are bonded together. In this way, even if a potential does develop, such as during an earth fault on one of the electrical circuits, all the conductive parts that someone could touch will be at substantially the same voltage. No dangerous shock current can then flow.

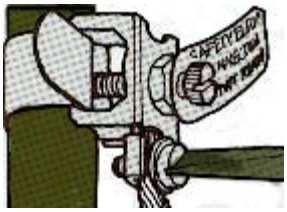
On its way to earth, leaking current may pass through walls, floors or anything capable of carrying it. This is made much easier when the connecting substance is wet. Water is an excellent conductor of electricity which is why special care must be taken in the bathroom.

Bathrooms carry special rules as far as electricity is concerned. Water and electricity do not mix, so the utmost care has to be taken when electrical supplies run in or near the bathroom. To this end, in the 16th Edition of the IEE (Institution of Electrical Engineers) Bathrooms carry their own, very specific, rules. We will deal with the use of earth bonding first and the rest later.

Should any electrical " leakages occur" in the bathroom the leaking current will try and find a passage to earth. It will travel down any damp in the walls or any metal or other conductors available. It is therefore important that precautions are taken to ensure these parts are not allowed to retain this current and diffuse it.

This is done by connecting all of the metal parts together with an earth cable. This will collect the current/voltage from the leak and equalise it around the pipes and metal parts. Each metal part in the bath or shower room must be connected by one of the following means. We suggest the use of a specific 4mm earth cable for these connections. This is a minimum requirement without conduit and larger earth cable can be used.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

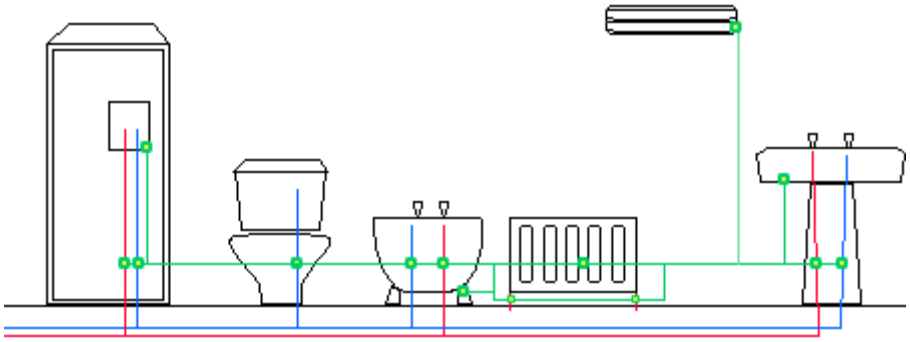


The earth tags (above right) should be connected to all pipes and can be bought from most diy stores and electrical merchants. They are proprietary connections reading ELECTRICAL CONNECTION DO NOT REMOVE.

The earth wire, after all bonding is complete should be connected to a local earth which could be a close socket, immersion heater or the connection unit for a heater or shower. This is in accordance with BS7671 which reads:

All electrical earths of circuits that
supply equipment in the bathroom should be connected to the equipotential
bonding, not just one local earth.

The cable should not be taken back to the main fuseboard or consumer unit as this can be dangerous.



The above layout shows a typical bathroom and its cross bonding layout. Red = hot water supply. Blue = cold water supply. Green = earth bonding cable. Plastic pipes and casings do not need to be bonded. The earth bond required to metal parts of a bathroom heater and shower can be very unsightly if taken to their next connection in the line, and it is permissible to connect the earth wires from these directly to the earthed electrical connection from which they are wired. Please note that if a bath is used for medical treatment or disabled people special considerations may apply and expert help should be sought.

Under IEE regulations the bathroom is now divided into zones for electrical purposes. The zone qualifications are quite complicated and professional guidance should be sought for any proposed electrical work in the bathroom. The basic rule is that no source of electrical supply should be accessible from a position where one can be in contact with water at the same time. Insulated operating cords of pull switches are permissible but they must be in accordance with BS 3676, which is most cases will be stamped or labelled on them.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

CHECKLIST:

- ***overall safety***
- ***how it works***
- ***cables***
- ***fuses***
- ***ceiling rose***

Please remember when attempting any electrical installations at home that you are obliged to get the completed job tested by a fully qualified electrician and obtain a minor works certificate. Failure to do this may render your house insurance invalid and you may have difficulty selling your home.

Over-all Safety

Check all walls for wires and pipes before cutting out for any new cables and boxes. A detector such as the one below can identify cables in the wall. Click on the image to buy.

If in any doubt whatever consult a qualified electrician. There is a legal requirement to obtain a completion certificate from a qualified electrician, for any work you do that requires a mains connection. For any work within circuits a minor works certificate should be obtained.

- Turn off the power and remove the fuse from any circuit you are working on.
- Make sure no-one can turn the power on by mistake.
- Use only approved materials.

How it works

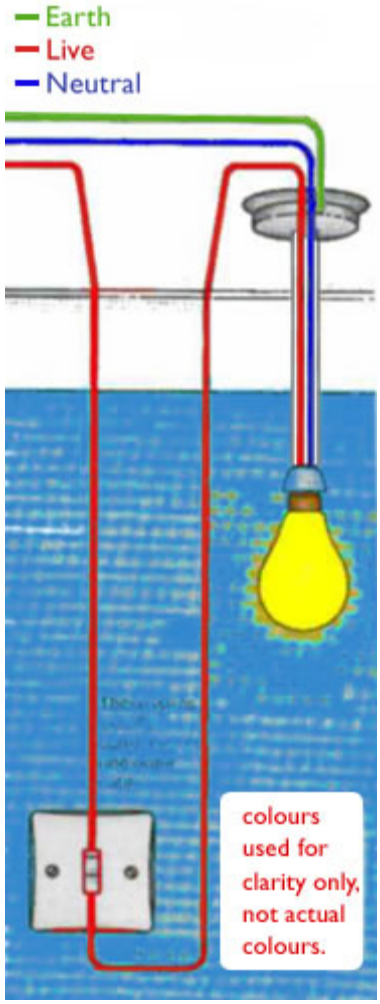
An electrical supply will come to your home your home at a main, sealed fuse called a service head and from there will go to your meter via one large red and one large black wire. The meter measures how much electricity you use. At no time should you touch either the service head or the meter.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

From here the electricity will go to your consumer unit, from where it is distributed around the house. Each circuit is fused at this box either by an amp rated fuse wire, or a trip switch if you have an RCD. (Residual Current Device) (Below, right)

The amount of electricity available to you is measured in Volts, and the rate at which it flows along its conductors is measured in amps. The power required by any appliance is measured in Watts. the formula for working out the correct cable and fuse is; Watts divided by Volts equals Amps

Electricity flows along the live wire, feeding whatever is required and then returns along the neutral wire to its local transformer. The flow can be stopped by the insertion of a switch, which for all practical DIY purposes is placed in the live wire.



Switches, most often, will be linked from your ceiling rose through a separate cable, even though one of the wires in this cable is black it is still live.

Electricity will always find the shortest or easiest route and you may represent it, so be careful

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Cables

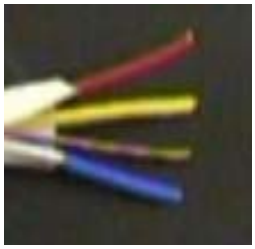
Fixed wiring is done in cable. This consists of individual conductors (wires) sheathed separately, by insulation to prevent leakage. The earth or "ground" wire is normally bare. The wires are then jointly covered by the outer sheath. The wires are colour coded, red for live, black for neutral and green/yellow striped for earth, where this is covered. Modern cables are sheathed with PVC which has an indefinite life, older cables were rubber with about 20/30 years life. If your home has these cables do not attempt electrical extensions with them. When installed, bare earth wires should be covered with an "earth sleeve" which can be bought in all sizes at an electrical store or most diy stores.

2 core & earth, 1.5mm cable

1.5mm is most common in lighting circuits. When installed it must not exceed 110m in length and carries a fuse rating of 5amps. (6 amps if used in conjunction with a miniature circuit breaker). It is acceptable to run 1200 Watts on this cable, the equivalent of 12 x 100 Watt bulbs, but lighting circuits are normally run independently on each floor of your house.

2.5mm (as above but larger) is usually used for the installation of power sockets on a ring main. The circuit uses a 30 amp fuse at the consumer unit (32 with a MCB). Cable length must not exceed 60m or 50m with an MCB.

Three core and earth is used to interconnect switches with more than one operation:



Flex, is simply flexible cable and is used for connecting appliances. The colour coding is different using brown for live, blue for neutral and green/yellow stripes for earth.

Appliance flex

There are many more cables for connecting cookers etc, but these are generally run directly from the consumer unit and require a professional electrician for their installation.

Fuses

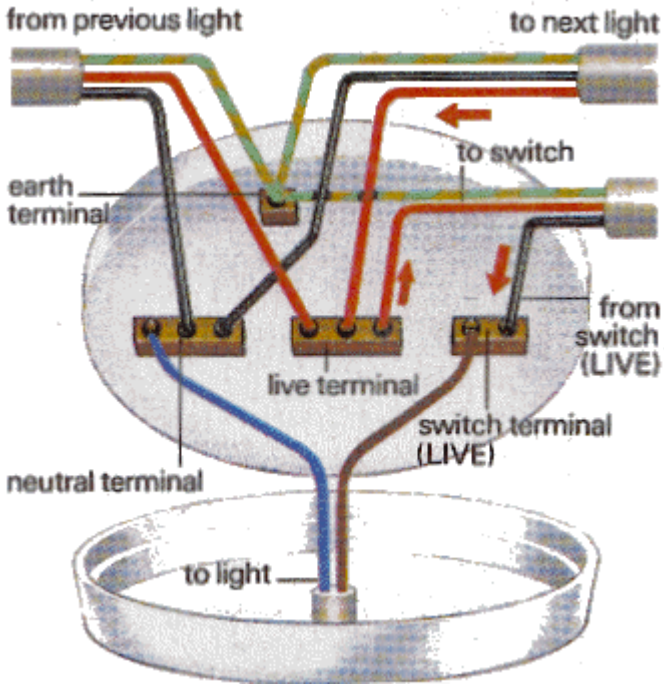
Fuses are placed into a circuit as a deliberate weak point. If anything goes wrong within your circuit, the fuse will "blow" first. With the modern RCD boxes, the trip switch will go. BUT BEFORE YOU PUSH IT BACK ON, LOCATE THE REASON WHY IT TRIPPED. Most of the time it is because the circuit has been overloaded or there is an earth fault. If you are in doubt

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

contact an electrician.

Ceiling Rose

We have included ceiling roses in this section because it is the most misunderstood fitting of all. Many people think they can take the old one off, do not mark the wires, and connect a new fitting, black to black, red to red. It is not that easy, because in the majority of cases your light switch will be wired to the rose, and in that case, at least one of the black wires will be live. Below is a diagram of a wired ceiling rose showing you what to look for when working with one.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

This is an excerpt from the book

Fireplace Mantels

by Mario Rodriguez

Copyright 2002 by The Taunton Press

www.taunton.com

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Simple Federal Mantel

This mantel is typical of those found in many rural farmhouses in the early 19th century. Almost always made of wood and painted, the style was taken directly from classical architecture and imitated the design of basic shelter: columns supporting a beam and roof. The simple moldings and joinery indicate that it could have been built by a local carpenter instead of by a furniture joiner. But its simplicity doesn't diminish its appeal in any way. The mantel's flat relief and plain treatment perfectly frame the Federal-period hearth opening and provide a focal point for the display of family possessions and a backdrop for social gatherings and important events. The mantel's design shows elegant proportion, restraint, and balance. And the simple moldings cast bold shadows that highlight its timeless appeal.

The federal mantel is structurally straightforward and can easily be built in a weekend. Three boards joined together with biscuits form the foundation, which is fastened to the wall. Plinth blocks (doubled-up 1-by stock) support the plain vertical pilasters, which support the horizontal architrave. Add a few moldings and the mantel shelf, and you're ready to paint.

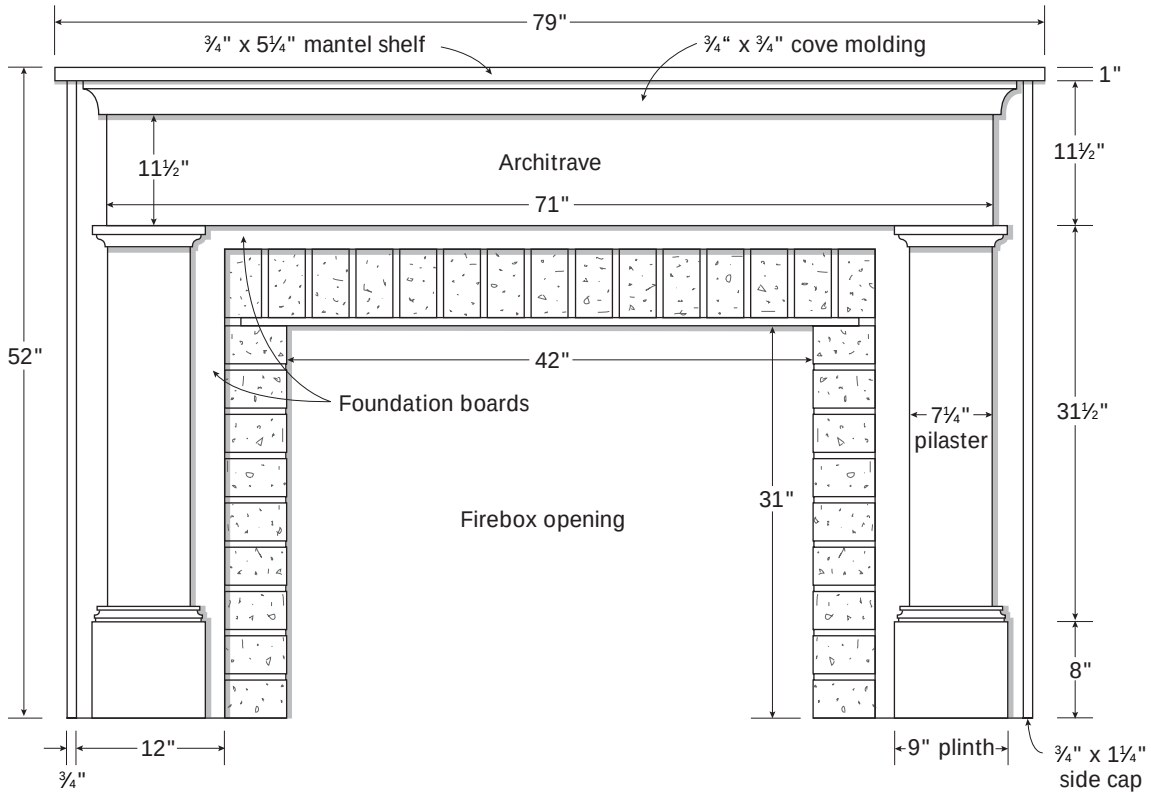
373

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Simple Federal Mantel

PROVING THAT SIMPLICITY DOESN'T PRECLUDE ELEGANCE, this mantel design is anchored by ideal proportions and perfect symmetry with the brick firebox opening it adorns. Built with readily available materials and moldings, it's easy to build as well.

FRONT VIEW



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Building the Mantel Step-by-Step

Begin by preassembling the foundation board and laminating the plinth blocks, you can move directly to installation. I chose to preassemble some of the molding elements as well.

The Foundation Board

The foundation board is the backdrop of the mantel. It provides a flat surface for the mantel proper, and bridges any gaps or irregularities between the masonry and the adjacent wall surface, while exposing only the neatest brickwork. The mantel foundation was designed with the lintel section fitting between the columns. That way the mantel parts would overlap the foundation joints, making the whole construction stronger.

1. Cut the two columns and lintel that will form the foundation. The firebox opening in this project is 32 in. high by 42 in. across, and an even course of bricks is left exposed around the sides and top. Using a 14-in.-wide lintel (horizontal section) and 10½-in.-wide columns (vertical sections) produced the balanced proportions that form the basis for the mantel's design. You should adjust these dimensions based on the size of your firebox opening.

Choosing Materials

During the 19th century, pine was abundant and readily available, and carpenters used it for most interior trim, including fireplace mantels. So a meticulous reproduction would require large, wide boards of clear pine. However, the use of solid pine for this project would present problems (besides price) for the modern woodworker that 19th-century carpenters weren't concerned with.

At that time houses weren't insulated, so warm and cold air passed through the structure freely. In a particular room, it wasn't unusual to experience surprising differences in temperature. With a fire blazing in the hearth, the warmest spot in the room would have been a seat in front of it, while other areas of the same room might be as much as 15º colder. These conditions surely played havoc with human comfort but spared furnishings and interior woodwork from drastic changes in temperature and humidity. In a modern ultra-insulated home, wood is subjected to extremes of temperature and relative humidity created by efficient central heating and air-conditioning. The use of wide, solid boards and true period construction methods in a modern home would probably cause unsightly checking and splitting. Miters would likely open up, and flat sections would cup.

A better approach for today's woodworker would be to construct this mantel using lumbercore plywood instead of solid wood. I used ¾-in. lumbercore plywood for everything except the plinth blocks and the moldings. (See chapter 1, pp. 9–12, for a detailed discussion of materials.)

375

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Join the foundation boards with a couple of biscuit slots.

Tip: You'd think pieces of molding stock at a lumber store are all identical. But if there are pieces from different batches, there could be slight differences, which will result in miters that don't line up perfectly. To avoid this, I try to cut all my mitered pieces from the same length of stock so there's no doubt that the profile is the same on all the pieces.

2. Lay out and cut biscuit joints to connect the lintel to the columns—three or four #2 biscuits should do the job.
3. Glue up the foundation assembly, making sure the columns are square to the lintel. When the assembly is dry, remove the clamps; but before moving it, attach two support battens across the front. The battens reinforce the joints, maintain the dimensions of the foundation opening, and keep it flat during installation.

The Plinth, Pilasters, and Architrave

Laminating the plinth blocks

The plinth blocks at the base of the pilasters are made with two pieces of ¾-in.-thick solid pine laminated face-to-face. The net 1½-in. thickness is needed to support the pilaster and the plinth molding. You could use a chunk of 2-by stock, but the approach here resulted in a more stable block, plus it made good use of scrap material I had on hand.
1. Cut the plinth block pieces slightly oversize.
2. Saw or rout two grooves into the back face of each piece, about 1½ in. from the edges.
3. Fit a spline into each groove, and glue the mating surfaces together.

Cutting the parts to size

1. Arrange the main mantel parts (pilasters, architrave, and plinths) on the foundation.
2. Center the parts and cut them to length.
3. Cut biscuit joints to align the top of the pilasters to the architrave.
4. Cut the plinth blocks to size. (Depending on the condition of the hearth, you may want to leave the plinth blocks a little long so they can be scribed to the hearth at installation.)

Selecting the moldings

I purchased stock moldings from the local building supplier. The simple profiles I needed were readily available, in quantity. By choosing

376

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Laminating two pieces yields a more stable plinth block. A pair of splines keeps the pieces from sliding around when clamping up.

available profiles instead of choosing special-order profiles, I could pick through the inventory and select the straightest and cleanest material.

There were three distinct profiles I needed: a large and simple cove for the cornice molding, an ogee with fillet for the torus molding (at the base of the pilaster), and a large ogee with quirk (space or reveal) for the capital molding. These last two moldings are both sold typically as "base cap" profiles.

Priming the parts

To achieve an attractive painted surface, the wood components must be carefully prepared. This involves filling any holes and dents and repairing cracks. I do some of this after installation, but it's easier to do a first go-over now. Also, on this mantel I primed the moldings before cutting and fitting them to the mantel.

1. Fill any holes, dents, split seams, tearout, or cracks in your material with a water-based wood filler. On lumbercore plywood, I usually apply filler on the exposed edges, paying par-

The flexible blade on a good-quality putty knife will fill any voids in the material and not further mar the surface.

377

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The finger joints, visible on the edges of the lumbercore, should be filled and sanded before you attach the parts to the mantel.

Use a large half-sheet sander or a sanding block to level any primed surfaces. Break square edges slightly but don't round them over too much.

All moldings should be filled, primed, and sanded for the best appearance.

Tip: If a water-based filler dries up, you can easily rehydrate it with a little tap water. You can even change the consistency if you prefer a thinner filler.

ticular attention to the finger joints where the solid material was spliced.

2. When the filler is dry, I use a medium-grit (120 to 150) sandpaper to remove any excess and then level the surface.

3. Clean off the filled and sanded boards with a tack rag, then apply a water-based paint primer. For a fluid coating that lays down nicely, I thinned the primer about 20 percent. It can be applied with either a brush or a roller. The primer fills and levels the wood and raises the grain slightly.

4. When the primer dries, look for any flaws that might have been missed the first time around, and fill them. Apply a second thinned coat of primer, and when dry sand again with 150-grit to 180-grit paper. Now the surface is ready for paint.

Installing the Mantel

Anchoring the foundation

Unless your walls are flat and plumb and you can determine the location of the studs behind, attach furring strips to the wall first, then attach the foundation to the strips. That way the principal method of attachment, no matter what you choose, will eventually be hidden by the mantel parts. In this case the brick masonry surrounding the opening was ½ in. higher than the surrounding plaster wall. In order to make up this difference and give myself a tiny margin, I cut my furring strips to ⅝-in. thickness.

378

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

1. Attach furring strips to the wall. The furring strips can be secured with lead anchors, masonry screws, or cut nails.
2. Position the foundation against the wall, and center it on the opening.
3. Check the foundation for plumb and level, then screw it to the furring strips with #8 wood screws. Locate the fasteners so they'll be covered over by the other mantel parts later.

Building up the mantel

With the foundation securely in place, you can apply the next layer of mantel parts. Working from the bottom up may seem more logical, but I worked from the top down and scribed the plinth blocks to the floor last.
1. Attach the architrave to the foundation with 1¼-in. screws. Make sure the top edge is even

Furring strips, shimmed plumb as needed and attached to the wall surface, provide good solid support for the foundation. Use the appropriate fastener based on the wall material.

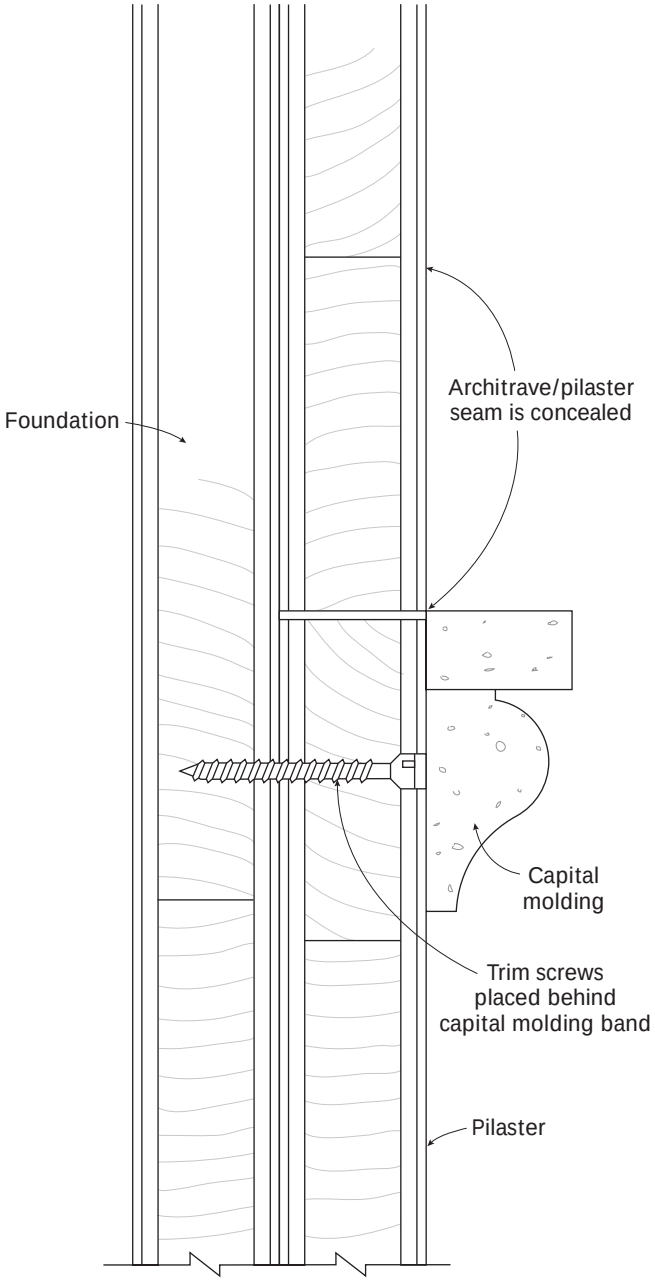
Position the braced foundation against the furring strips. Make sure it's plumb and leveled, then screw it to the strips with #8 by 1½-in. wood screws.

This detail shows the capital molding that caps the pilasters.

379

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

ARCHITRAVE-PILASTER JOINT



The capital band (molding set at the top of the pilasters) is placed over the trim screws attaching the pilaster to the foundation.

With the architrave in place, set the pilasters, using biscuits for alignment and added strength.

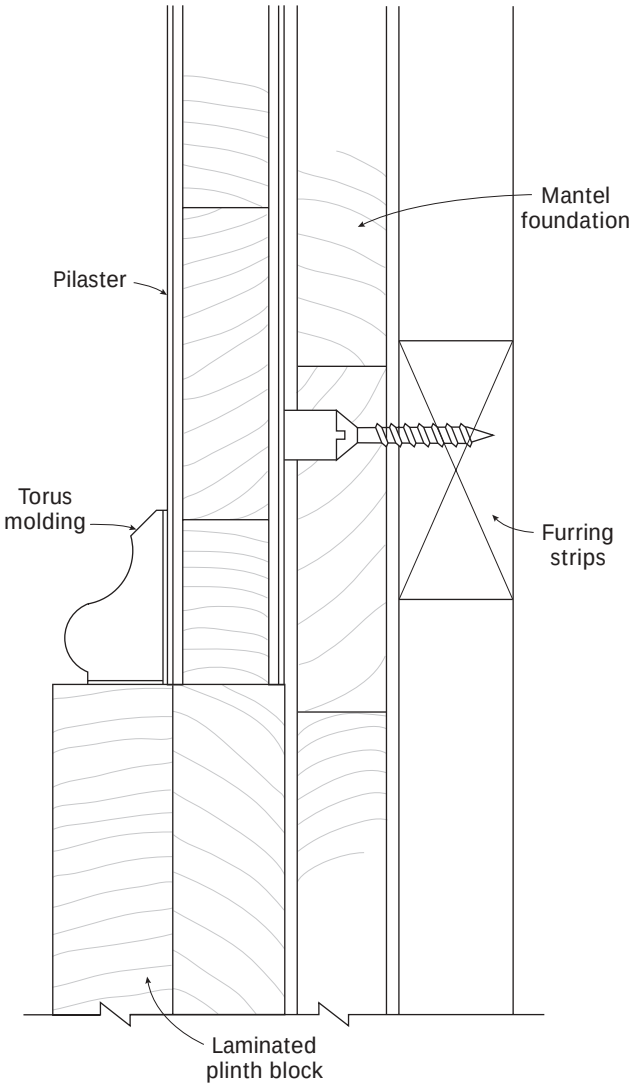
with the foundation board and that the spaces at the ends are equal.

2. Position the pilasters under the architrave, and add the biscuits and glue to reinforce the joint. Secure the pilasters to the foundation with 1¼-in. screws. Locate the screws at the bottom and top of the pilasters, where they'll be covered over with the capital and torus moldings.

3. Fit the plinth blocks. Once the pilasters are in place, measure the remaining space for the plinth blocks. On both sides of this mantel there was a small discrepancy between the wood floor and the slightly raised brick of the hearth. So I scribed the ends of the plinths to fit, made the cut with a jigsaw, and attached them to the foundation with countersunk trim screws.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

PLINTH



The torus band (molding set at the bottom of the pilasters) creates a pleasing transition from the plinth block to the pilaster and helps to visually anchor the mantel.

381

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

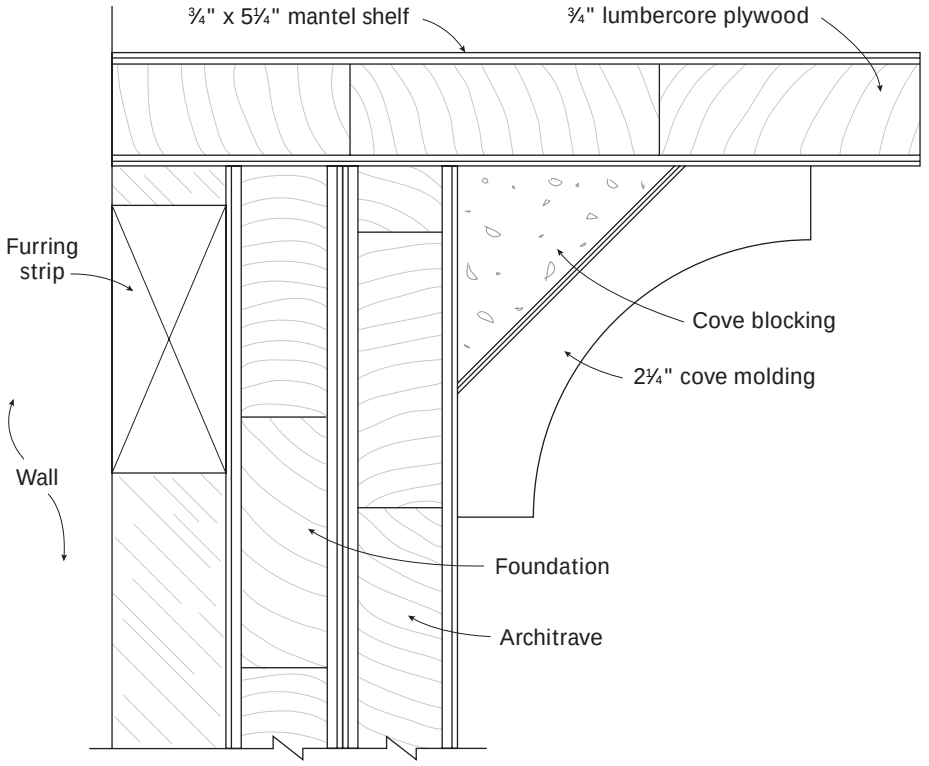
After the plinth blocks are scribed to the hearth, screw them to the foundation with trim screws.

Blocking for the cove molding

In order to provide a stable bed for the cornice molding, I made up some blocks to be placed along the top edge of the frieze and under the mantel shelf. The 45-degree face of these blocks supported the cornice molding at a consistent angle and ensured that the miters would line up properly. To support the small return sections of the cornice, I added a small piece of wood to the back of the angled blocking.

1. Saw the cove blocking from a piece of 2-by stock. Make sure the angle of the blocking

DETAIL OF CORNICE/ARCHITRAVE



The cornice blocks, set under the mantel shelf and screwed to the architrave, provide support for the cornice molding. Together the blocking and cornice support the mantel shelf.

382

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A small block is glued to the angled cove blocking. This supports the cornice molding return piece.

Screw angled cornice blocks along the top edge of the architrave.

Preassembled Molding Bands

On any project, moldings attract my attention. I always look to see whether the profile matches up and wraps around the corner cleanly. And of course, I like to see tight miters. If you're laying down the molding as you go, this is sometimes difficult to achieve. To make the job easier, I often build my bands first and then attach them to the mantel.

By mitering, gluing, and nailing the bands together first, you can coax tight joints at the corners, allow them to dry, and then fill and sand them. All of this critical work is a lot easier if you can freely adjust the molding band. In addition, once the band is dry, it will flex slightly and conform to its position on the mantel—while the miter remains tight. And the constructed band will stay in place with fewer nails than if it were laid up one piece at a time.

I cut the sections on a miter saw to within 1/32 in., then I plane them to fit with a low-angle block plane. When I'm satisfied with the fit, I glue the miters and nail them together with a pin nailer. I use a fixed block as a guide to assemble the pieces.

A preassembled band of molding can be gently coaxed into place—while the miter remains tight.

383

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

This detail shows the plinth with the torus molding.

After setting the legs of the compass to the widest gap between the mantel shelf and the wall, drag the compass along the length of the shelf. Here the mantel shelf is still oversize, so the scribed amount is a full inch larger than the widest gap.

face matches the angle of the cove molding you're using.

2. Attach the cove blocking through predrilled holes with trim-head screws.

The Moldings and Mantel Shelf

The conventional approach to installing moldings is to work your way around the mantel from one side to the other, fitting one piece to the next. (For an alternate approach, see "Preassembled Molding Bands" on p. 61.)

The mantel shelf

In the 18th and 19th centuries, woodwork was attached to the studs, then the walls were plastered, with the woodwork acting as a gauge or stop. The finish coat of plaster was then brought up to the woodwork. This method produced an interesting junction where the woodwork and plaster met that was soft and easy on the eye. But today's woodworkers and finish carpenters scribe their work to conform to the walls.

1. Set a compass to the width of the widest gap between the straight edge of the shelf and the wall.

2. With the pin leg of the compass resting against the wall and the pencil leg on the mantel shelf, pull the compass along the wall and shelf. This will result in a pencil line on the shelf that will mimic the wall surface.

3. Cut along the pencil line, then use a plane or rasp for final fitting.

The cove molding

I cut the cove molding on a miter saw outfitted with a special support carriage to hold the molding at the correct angle.

1. Cut the cove molding to fit.

2. Nail the cove to the cove blocks and mantel shelf with finish nails. Add some glue to the miters to help hold the joints closed.

3. When cutting the short return miter, make the 45-degree cut on a longer piece, then make the square cut to release the return from the longer stock.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The capital and torus moldings

1. Cut and fit these moldings around the pilasters.
2. Use a finish nailer for the long pieces and a pin nailer (or just glue) for the short returns.
3. Cut the side cap molding, and nail it to the edge of the foundation board. If necessary, scribe it to fit cleanly against the wall.

Painting the Mantel

Final preparations

With the mantel primed, sanded, and installed, there might be small gaps where the various sections of the mantel meet. Although they don't appear unsightly now, these gaps will stand out later and will work against a clean and unified appearance when the mantel is painted.
1. Fill any exposed screw or nail holes with putty.
2. Use a high-quality water-based caulk (Phenoseal® brand takes paint beautifully) in an applicator gun to apply a small continuous bead anywhere there is a gap. Within minutes of applying the caulk, wipe away any excess with a damp rag.

Applying finish coats

I used a water-based latex paint for the final coating of the mantel. For a project like this, I don't think oil-based paint offers any great advantages. I wanted a smooth surface with just a hint of brush marks that would imitate the finish on period woodwork.

The secret to a good job is to take your time, so I decided to apply the paint in several light coats. A thin coat levels nicely and dries more quickly and completely than a single heavy coat. I thinned out the paint about 20 percent and used a good-quality 2-in. synthetic brush. I started on the edges, then did the inside corners, and finished up with the large flat areas. Wait until each coat is thoroughly dry before proceeding with the next coat. The whole mantel required three coats of paint and a couple of 15-minute touchup sessions.

Nail on the capital molding with a pin nailer. Don't try to nail the miter or the wood may split.

The finish coat of paint should be applied in several thin layers. A thin coat of paint will level out nicely and dry quickly.

385

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

FIT A BATH AND WASH BASIN

SKILL LEVEL

A good knowledge of plumbing techniques and some understanding of building construction would be an advantage.

SAFETY FIRST

Be careful not to strain yourself whilst manoeuvring the appliances. Ensure that all metal pipes and fittings are cross-bonded with 6mm squared sheathed earthing wire. Protective goggles, gloves and ear defenders may be needed for some operations.

INTRODUCTION

Changing your bath and washbasin gives you the ideal opportunity to re-style your whole bathroom.

Plan your new installation thoroughly. If you only have one bathroom in the house, the work must be carried out efficiently to minimise the time that the amenities are unavailable. If you have any concerns, ask professionals to carry out the work. The methods described here refer to the separate removal and installation of each fitting. However, in practice it is more convenient to strip out the room first, then carry out the new installation.

2 - Preparing the room

Clear the room of all storage units and fixtures, such as towel rails and blinds. If the bath has a shower screen, remove it. Take up carpeting, but leave sheet vinyl in place until all the fittings have been removed. If you plan to install new lighting or an extractor fan, make the alterations at this stage.

The bath and basin are connected to the plumbing by water-supply pipes and wastepipes. These pipes must be disconnected before the fittings can be removed. First shut off the hot and cold supply.

If your house has old lead pipes, make the most of this opportunity and ask a plumber to replace them with copper or plastic plumbing.

3 - Removing the old bath

Remove the bath panels to reveal the plumbing. Open the taps to drain them, then disconnect the supply pipes. Place a shallow bowl under the bath trap to catch the water, then disconnect the wastepipe.

If the connectors cannot be unscrewed, saw through the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

pipes. Also, cut through the old bath overflow.

If the bath has been sealed against the wall with flexible sealant, cut through this with a craft knife. Pull the bath out from the walls. If the bath has adjustable feet, it may help to lower these first.

Unless a heavy cast-iron bath is worth salvaging, it is easier to move it by first breaking it up into manageable pieces. Cover the bath with an old blanket and strike it with a club hammer. Protective goggles, gloves and ear defenders should be worn during this operation.

Once the bath has been removed, extract the old overflow pipe from the wall and repair the hole with mortar and plaster. Also, remove old wall tiles and prepare the walls for retiling.

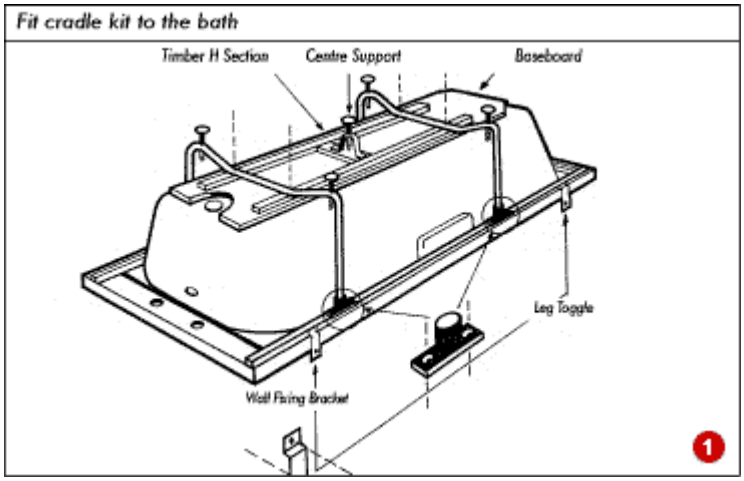
When applying new wall tiles, measure out and cut a groove in the plaster to inset the rim of the bath. This ensures a good waterproof joint.

4 - Fitting the new bath

Before fixing a new bath or its panels, remove the protective covering and check thoroughly for damage or colour faults. Any claims made after the bath is fitted will not be accepted by the manufacturer.

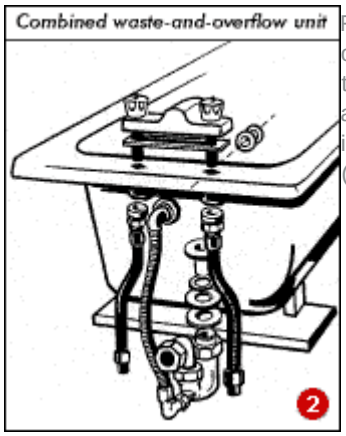
To add stiffness, most moulded plastic baths have a baseboard bonded underneath and a wooden frame bonded beneath the rim. A cradle kit is usually supplied for self assembly. Following the manufacturer's instructions, fit the cradle legs to the frame and baseboard. Also fit the centre support leg, if supplied (1).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Attach the wall-fixing brackets to the underside of the rim-support frame. Fit hand grip(s) to the rim if supplied.

Set the bath upright and fit individual hot and cold taps or a mixer-tap set. Attach flexible connecting pipes to the tap tails - this allows for any misalignment when you connect up with the supply pipes.

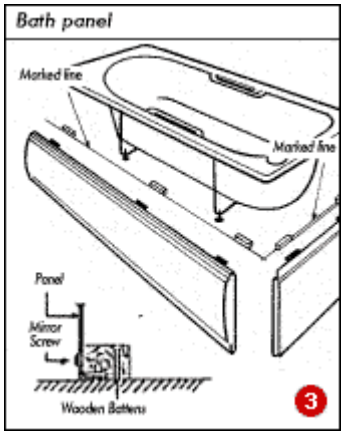


Fit the overflow outlet and waste outlet into the bath. Connect them with a combined waste-and-overflow unit that incorporates a deep-seal trap (2).

Place the bath in the required position and adjust the screw feet to set the height and level of the rim so that it can accommodate the side panels.

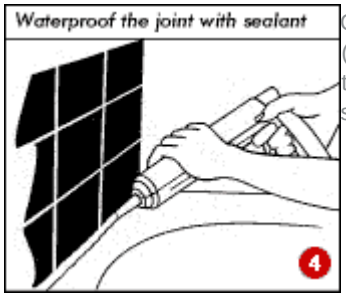
When everything is in place, screw the brackets to the wall and the feet to the floor. Connect the supply and wastepipes (see below).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Fit the bath panels according to the manufacturer's instructions (3). Use a fine-toothed saw to shape the panels around pipes or to fit the skirting.

If you are constructing your own bath panel, make it easy to remove, so that it provides simple access to plumbing and some useful long-term storage.



Once the walls have been tiled (4), waterproof the joint around the rim of the bath with silicone sealant.

After using an acrylic bath, clean it while it is still warm, using soapy water. Then wipe it dry. Do not use organic solvents or abrasive cleaners.

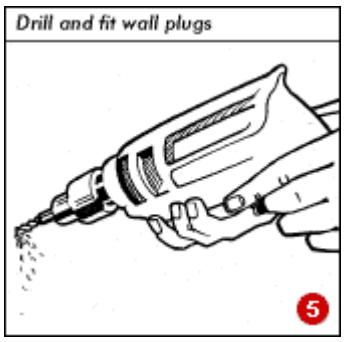
5 - Fitting a pedestal wash basin

Disconnect the supply pipes from the old taps, using a cranked spanner to reach behind the basin. If this proves difficult, cut the pipes at a convenient level for connecting with the new flexible tap connectors.

Unscrew the old basin fixings and lift clear. Remove supporting brackets from the wall or unscrew the pedestal base from the floor.

Place the new basin on its pedestal base and position it against the wall. Mark the fixing points on the wall and floor.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

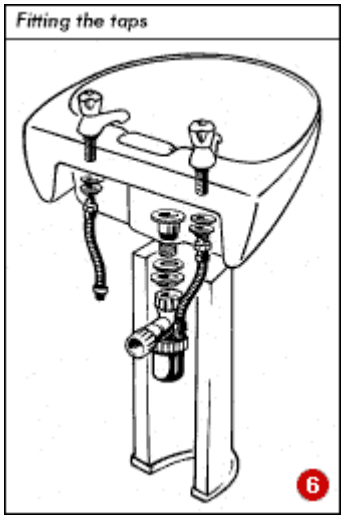


Drill and fit wall plugs on the marks (5). Just drill pilot holes for the screws when fixing to a wooden floor.

Make any alterations to the 15mm (1/2in) supply pipes so they will be neatly concealed by the pedestal. Fit miniature in-line isolating valves for future servicing.

Fit new taps and a waste outlet in the basin. Check that the tap spouts are correctly aligned. Do not over-tighten the back nuts. Fit flexible connection pipes to the tap tails. Then fit a 32mm (1.25in) waste trap to the waste outlet.

When fitting taps to a rim made from a thin material (such as pressed steel), use a 'top-hat' spacer fitting placed under the back nut (6).



Place the basin on its pedestal and fix it in place with brass screws. Connect the trap to the existing 32mm (1.25in) wastepipe. If a new waste pipe is required in a different position, drill a clearance hole through the wall with a masonry core drill, and install a new pipe run (see next section).

Connect the flexible tap connectors to the appropriate hot and cold supplies. Follow the manufacturer's instructions, as some taps require check valves to be fitted. Turn on the water supply to test the installation.

Unless you are experienced with electrical installations, ask an electrician to fit supplementary bonding to all metal fittings and pipework.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

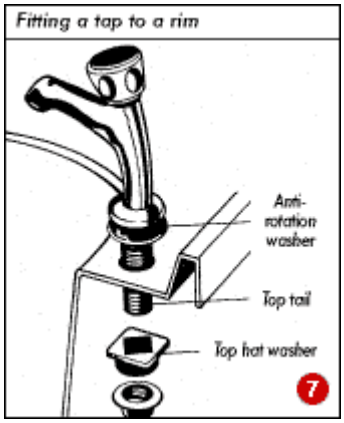
6 - Supply pipes and wastepipes

Baths are fitted with 22mm (3/4in) taps and supply pipes; basins with 12mm (1/2in) taps and pipes. Monobloc mixer taps usually have 10mm (3/8in) tails, and a reducer is needed when connecting them to standard pipework.

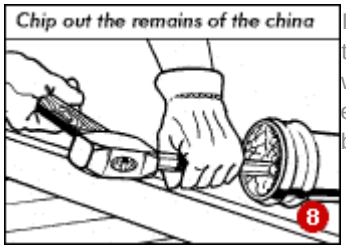
You can use copper supply pipes, connected with soldered or compression joints, or plastic pipes that are usually connected with push-fit joints. Adapter couplings are available to join pipes of different materials and sizes.

Always follow tap manufacturers' instructions when connecting supply pipes, as some tap installations require check valves to be fitted.

Plastic pipe is used for wastes: 40mm (1.5in) pipe for baths; 32mm (1.25in) for washbasins; and 21mm (3/4in) for overflows. Solvent-welded joints, push-fit connectors or compression joints are used to join plastic wastepipes.



Unless you are connecting to existing wastepipes, new bath and basin wastes should be connected to a soil-stack with boss fittings (7).



If a trap cannot be removed to provide access to the wastepipe, include a rodding-eye fitting so that any blockages can be cleared (8).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

FIT A TOILET AND BIDET

SKILL LEVEL

A good knowledge of plumbing techniques and some understanding of building construction would be an advantage.

SAFETY FIRST

Be careful not to strain yourself whilst manoeuvring the appliances. Ensure that all metal pipes and fittings are cross-bonded with 6mm^2 sheathed earthing wire. Protective goggles and gloves may be needed at some stages.

INTRODUCTION

If you are changing your toilet, you may also want to consider re-styling the whole bathroom.

Before taking any action, plan your new installation thoroughly. If you have only one toilet in the house, the work must be carried out efficiently to minimise the time that the amenities are unavailable. If you have any concerns about your own ability, ask professionals to carry out the work.

2 - Removing the old WC

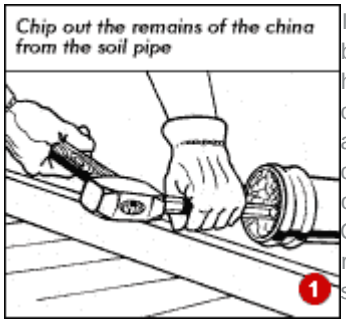
Check all goods carefully prior to installation and before the old suite is disconnected.

The first task is to remove the old pan and cistern. With the cold supply turned off, flush the toilet to empty the cistern. Use a sponge to soak up any surplus water left after flushing.

Disconnect the supply pipe and overflow pipe from the cistern. If they are corroded, cut them free. Disconnect or cut away the flush pipe. Remove the cistern and any brackets fixed to the wall.

Remove the screws holding the base of the pan to the floor. Chip out the old putty sealant or mortar from the soil-pipe joint, and work the pan free to remove it.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



If the joint cannot be freed, break the pan outlet with a hammer and lift the pan clear. If the pan is bonded to a concrete floor, use a cold chisel to free it. Stuff paper or old cloth in the pipe. Carefully chip out the remains of the china from the soil pipe using the chisel (1).

Wear protective goggles and gloves during these operations.

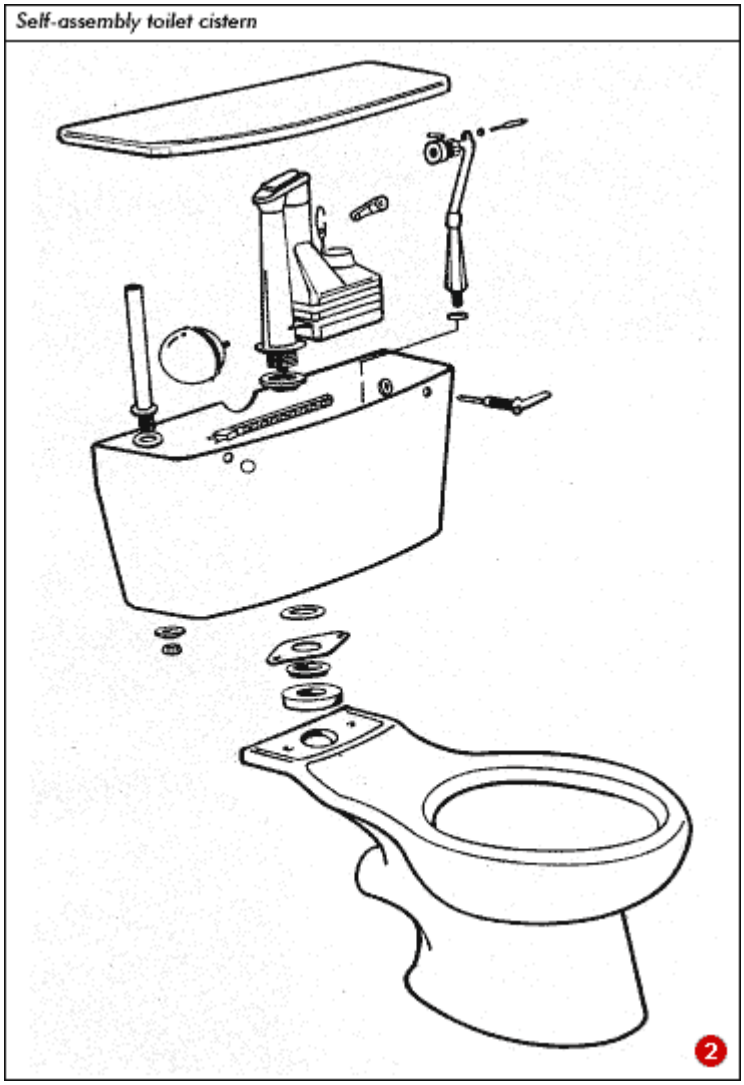
If a wooden floor shows signs of rot, cut out the damaged material and replace it with new flooring. Treat the new and surrounding wood with preservative.

3 - Fitting a new close-coupled WC

Toilet cisterns are supplied with a siphon kit and lever handle for self assembly (2). The cistern sometimes has two holes in the front to enable you to set the lever on the left or right-hand side.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Self-assembly toilet cistern



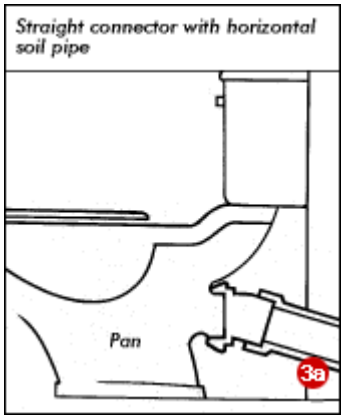
Check that the pan and cistern are level, and pack out as required. Mark the positions of the floor and wall fixings. Also mark the overflow position.

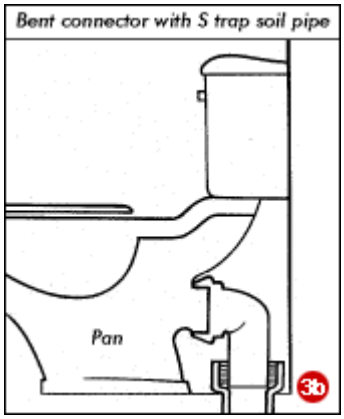
Assemble the siphon and lever mechanism, following the manufacturer's instructions.

Fit the cistern to the pan, using the assembly kit provided with the WC. Do not overtighten the fixings.

Use a push-fit flexible connector to join the new pan to the soil pipe. These are available in straight, off-set, angled and bent forms to fit different installations (3a and 3b).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

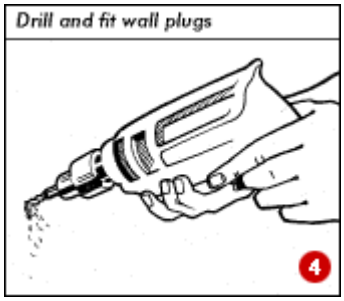




Place the WC in the position required to suit the type of connector you will need.

Push the connector onto the pan outlet, then push the pan into position with the connector firmly pressed into the soil pipe.

Use a silicone-grease lubricant to make fitting easier.



Remove the assembly, then drill and plug the wall-fixing holes (4). Also drill a hole for the 21mm (3/4in) overflow pipe, allowing for a fall to the outside.

For solvent-welded wastepipe joints, use the solvent supplied by the pipe manufacturer to ensure compatibility.

Refit the assembly and check it is level. Fix the cistern and pan with brass screws and flexible washers.

Do not use a cement mortar to embed the pan, as this can cause stress-cracking in the china.

Fit an isolating valve in the water-supply pipe and connect the pipe to the float-valve tail with a tap connector.

Cut and fit the new overflow pipe, using a connector and elbow as required. The end of the overflow should extend beyond the face of the wall by at least 100mm (4in).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Fit the toilet seat and cover and adjust the fittings to allow the seat to stay up when open.

Turn on the water supply and check the water level in the cistern - it should be about 25mm (1in) below the overflow outlet. Adjust the float arm if necessary.

Unless you are experienced with electrical installations, ask an electrician to fit supplementary bonding to all metal fittings and pipework.

4 - Fitting a bidet

Fitting an over-rim supply bidet is relatively straightforward, as the supply and waste plumbing is much the same as for a washbasin. Fit the bowl in a similar way to a toilet pan.

The plumbing for the rim supply type of bidet is more complicated and is best fitted by a plumber, as it must comply with water bylaws.

5 - Supply pipes and waste pipes

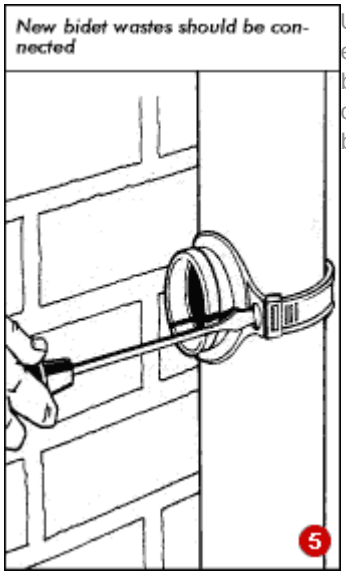
Bidets are fitted with 12mm (1/2in) taps and pipes.

You can use copper supply pipes, connected with soldered or compression joints, or plastic pipes that are usually connected with push-fit joints. Adapter couplings are available to join pipes of different materials and sizes.

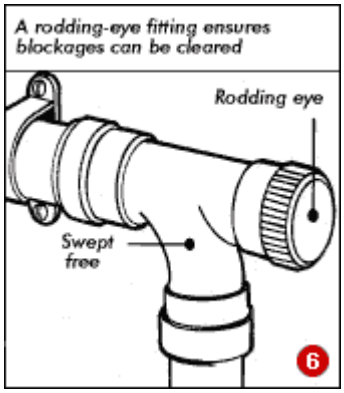
Always follow tap manufacturers' instructions when connecting supply pipes, as some tap installations require check valves to be fitted.

Plastic pipe is used for wastes: 32mm (11/4in) for bidets; and 21mm (3/4in) for overflows. Solvent-welded joints, push-fit connectors or compression joints are used to join plastic wastepipes.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Unless you are connecting to existing wastepipes, new bidet wastes should be connected to a soil-stack with boss fittings (5).



If a trap cannot be removed to provide access to the wastepipe, include a rodding-eye fitting so that any blockages can be cleared (6).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

FIT EXTRA ELECTRICAL SOCKETS

SKILL LEVEL

No special manual skills are required, but a sound knowledge of electrical work is an advantage.

Working with electricity is potentially dangerous, and you should not attempt to convert or add sockets unless you have the necessary experience and knowledge. If in doubt, enlist the help of a professional electrician.

SAFETY FIRST

Always turn off the electricity supply at the consumer unit when working on electrical installations. Wear eye protectors and gloves when using a club hammer and bolster.

INTRODUCTION

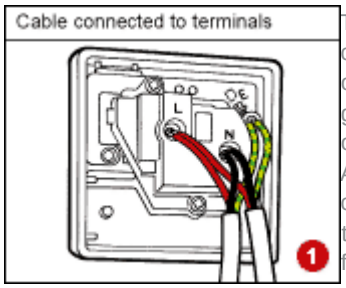
An adequate number of electrical sockets will eliminate the inconvenience and expense of extension leads.

To increase the number of sockets in your home either convert existing single-socket outlets to doubles or fit additional sockets. Single sockets will be either 'flush', i.e. they don't stick out from the wall, or 'surface-mounted', i.e. boxes that do stick out a little bit from the wall.

2 - Preparation

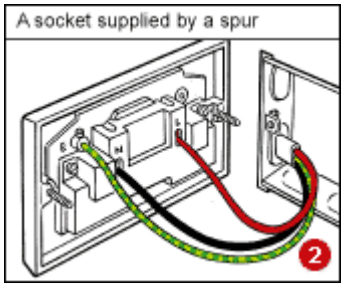
The following assumes your house is wired conventionally, using modern materials. Old round-pin sockets should be replaced by an electrician.

Most socket outlets in modern homes are connected to what is known as a ring circuit or ring main. From a 30amp fuse or 32amp miniature circuit breaker (MCB) in the consumer unit, a length of 2.5mm² two-core-and-earth cable runs from one socket to another and then back to the consumer unit where it is connected to the same set of terminals from which it originated.



There are usually two ring circuits in the average house, one supplies power to the ground floor sockets and the other to the sockets upstairs. At each socket the cable is cut and connected to terminals behind the faceplate.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Some homes have only one or two socket outlets per room, but the number can be increased with the addition of an extension known as a spur. This comprises a single 2.5mm² cable connected to the terminals of an existing socket or to a separate junction box on the ring circuit. From there, the spur cable runs to a new socket. You can have as many spurs as there were socket outlets on the ring originally. Each original double socket counts as two.

Individual radial circuits are used to supply power to a single appliance such as a cooker or shower unit, but radial circuits can also be used to supply a number of sockets. Spurs can also be connected to this multi-outlet type of radial circuit.

A radial-circuit cable terminates at the last socket - it does not return to the consumer unit as with a ring-circuit cable. A 2.5mm² two-core-and-earth cable is used for a floor area up to 20m² (24yds²), and the circuit must be protected by a 20amp fuse or MCB. Higher-rated fuses and cable are required for larger floor areas.

Single sockets on a ring or radial circuit can be converted to doubles or even fused triple sockets. Spur sockets can also be upgraded, provided the spur cable is serving only the one socket outlet.

3 - Testing the circuit

Step 1: Before testing the circuit, turn off the electricity using the main switch on the consumer unit.

Step 2: Unscrew the socket faceplate and ease it off its mounting box. Note the number of cables feeding the socket - if three cables are connected, it is safe to upgrade the socket. If two are fitted you should test the circuit.

Step 3: Disconnect all the appliances on the circuit, then remove the red-coloured live wires from the socket terminal and separate these wires. Attach a continuity tester between the two live wires - if the tester glows, the socket can be changed.

- If the tester fails to light, get a qualified electrician to test the circuit before changing the socket.
- Similarly, if only one cable is connected to the back of your single socket, have that tested by an qualified electrician to make sure it is safe to

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

convert.

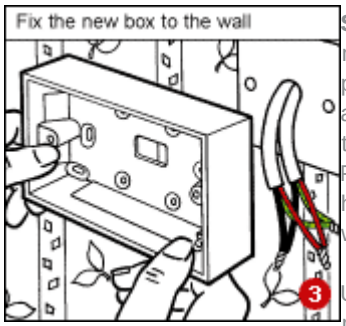
4 - Converting - Surface-mounted sockets

This is one of the easiest ways to increase the number of socket outlets in your home. No extra wiring is required and little or no redecoration afterwards. Just swap the single mounting box for a double box of the same depth, and connect the new double socket to the existing circuit cable.

Step 1: Before starting work, turn off the electricity using the main switch on the consumer unit - check that the power is off with a proprietary plug-in socket tester.

Step 2: Remove the two securing screws and pull the old faceplate away from its mounting box. Loosen the terminals securing the wires and remove the faceplate.

Check that the bare earth wires are covered with green/yellow earth sleeving - if not, cut a piece of sleeving to length and thread it over the wires, leaving about 12mm (1/2in) of each wire exposed.



Step 3: Remove the old mounting box. Break the plastic web covering the appropriate 'entry hole' for the cable in the new box. Pass the cable through the hole and screw the box to the wall.

Use a spirit level to get your mounting boxes horizontal. Slotted holes allow you to adjust the position of each box as you drive the fixing screws into the wall.

You may be able to use the existing screws and wall plugs. If not, drill new fixing holes in the wall and insert wall plugs.

Step 4: Connect the existing wires to the terminals in the new socket - red to the L-terminal, black to N-terminal and green/yellow to E-terminal. Make sure all the wires are held securely and that no bare wire is exposed.

When two or more identical wires are connected to a single

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

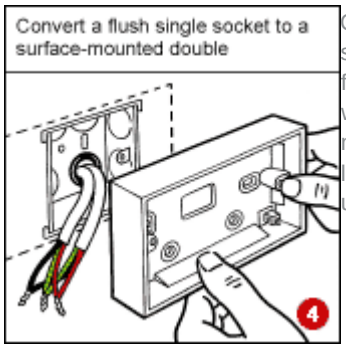
terminal, they should be twisted together with pliers to ensure a good connection.

Step 5: Push the socket faceplate into the box, taking care not to trap the wires, then tighten the faceplate screws.

Step 6: When all is secure, turn the electricity on and test the socket by plugging in a lamp or a plug-in socket tester.

5 - Converting - Flush sockets

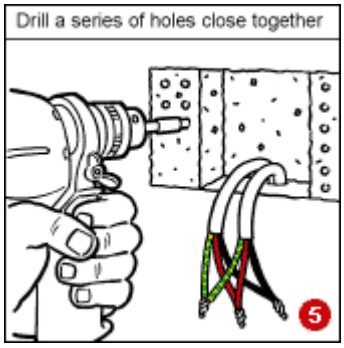
The simplest way to upgrade a flush socket is to use a special mounting box that converts it to a double surface-mounted socket. The conversion box is attached to the existing metal box, using the two short screws provided.



Converting a single flush socket to a double or triple flush socket involves more work but the result looks neater. It is probably best to leave this type of conversion until you plan to redecorate.

Step 1: Having turned off the power at the consumer unit, unscrew and remove the old faceplate and metal mounting box. You may need to cut around the old box in order to release it from the surrounding plaster.

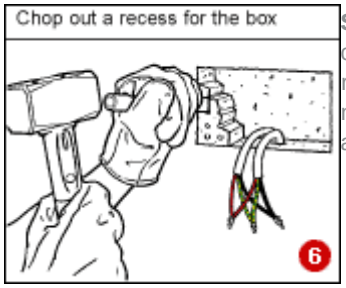
Step 2: Hold the new metal box in the required position - this is largely determined by the original hole in the wall, but there is some leeway. Draw round the box to indicate how much masonry needs to be removed.



Step 3: Using a cordless drill fitted with a masonry bit, drill a series of closely-spaced holes in the masonry. Use a depth stop or a piece of tape wrapped around the drill to ensure the holes are all the same depth.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

You can buy a drilling jig for boring out the recesses for mounting boxes - it is comprised of rows of closely packed tubes mounted on a backing plate that you attach to the wall.



Step 4: Use a bolster or cold chisel to chop out a neat rectangular recess for the new box. Drill fixing holes and fit wall plugs.

Step 5: Knock out a convenient cable-entry hole in the box and line the hole with a rubber grommet that will prevent the metal chafing the cable. Pass the cable through the hole and screw the box into its recess.

Use decorator's filler to make good any damaged plaster.

Step 6: Connect the existing wires to the terminals in the new socket - red to the L-terminal, black to N-terminal and green/yellow to E-terminal.

When two or more identical wires are connected to a single terminal, they should be twisted together with pliers to ensure a good connection.

Make sure all the wires are held securely and that no bare wire is exposed.

Dealing with a hollow wall:

It is relatively easy to convert a flush socket that is set in a plasterboard partition wall.

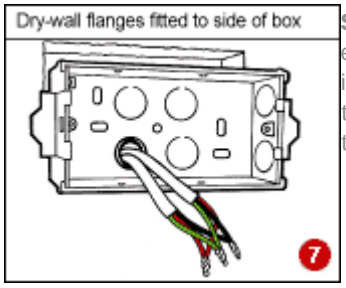
Step 1: Turn off the electricity using the main switch on the consumer unit.

Step 2: Remove the old fitting and draw round the new mounting box. You may need to reposition the box to one side of the original opening to avoid cutting into wooden

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

studs that form the framework of the wall.

Step 3: Drill holes in the corners of the marked area and cut out the waste with a padsaw.



Step 4: Punch out the cable-entry hole and fit a grommet in the new box, then feed in the cable. Fit dry-wall flanges to the sides of the box.

Step 5: Pass the box through the hole in the wall and manoeuvre it until the flanges come up against the inside face of the plasterboard.

Step 6: Wire the socket as described in Step 6 above and screw it to the mounting box. As you tighten the screws, the flanges grip the plasterboard and hold the box in place.

Special plastic mounting boxes with hinged flanges are available for fitting sockets to hollow stud partitions.

6 - Fitting extra sockets

You can add a new socket to the circuit by connecting a length of 2.5mm² two-core-and-earth cable to the terminals of an existing socket, provided that the socket is not on a spur itself or already feeding a spur.

To avoid long cable runs, mount the new socket on the wall directly behind an existing socket in the next room.

- If you want a new socket on the opposite side of the room, run the spur cable under the floor. The new cable can rest on the floor or ceiling between joists or it can be secured to the side of a joist with plastic cable clips.

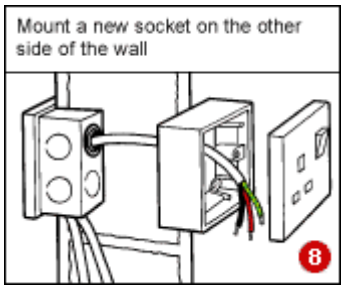
- If your new spur has to run across the line of joists, you will have to drill a series of 12mm(1/2in) holes through the joists. These holes must be 50mm (2in)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

below the tops of the joists to avoid floorboard nails.

Step 1: Before starting work, turn off the electricity using the main switch on the consumer unit.

Step 2: Remove the existing socket and box, then drill a hole for a short length of cable through the wall.



Step 3: Cut a recess for a flush box or fit a surface-mounted box on the other side. Punch out the cable-entry hole for the cable (fit a rubber grommet in a metal box to prevent chafing the cable) and screw the box in place.

Step 4: Strip a short length of sheathing off both ends of the spur cable, check that the bare earth wires are covered with green/yellow earth sleeving - if not, cut a piece of sleeving to length and thread it over the wires leaving about 12mm (1/2in) of each wire exposed.

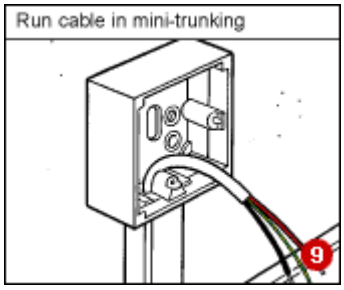
Step 5: Connect the existing wires to the terminals in the new socket - red to the L-terminal, black to N-terminal and green/yellow to E-terminal.

When two or more identical wires are connected to a single terminal, they should be twisted together with pliers to ensure a good connection.

Make sure all the wires are held securely and that no bare wire is exposed.

At the other end, twist the new wires together with the matching wires from the ring main, and insert them in the terminals of the original socket on the other side of the wall.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Run longer spur cables along a wall inside plastic mini-trunking and connect them to surface-mounted sockets.

Whenever you are installing new cable runs, make sure you do not cut the cable too short - instead push the excess cable back into the wall or below the floor after you have connected the wires to their terminals.

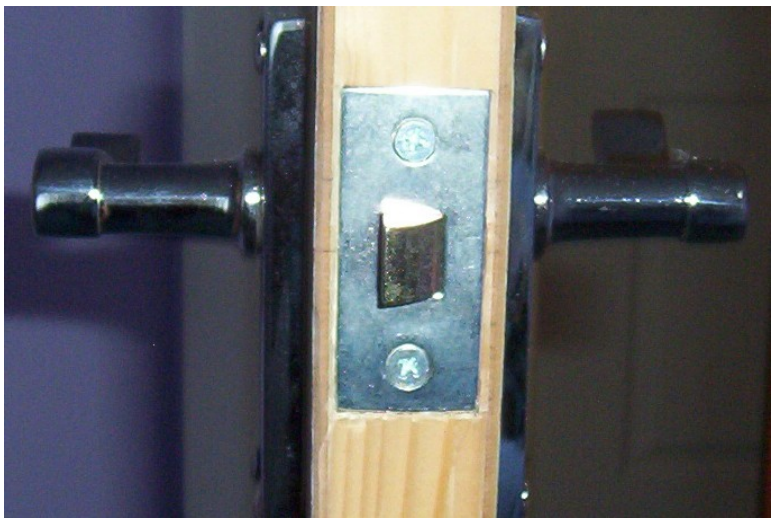
Feeding a cable behind the skirting can be a problem. Decide where you want to mount the new socket and use a cordless drill fitted with an extra-long masonry bit to cut a channel behind the skirting board. Rake out the debris from behind the skirting with a cold chisel.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

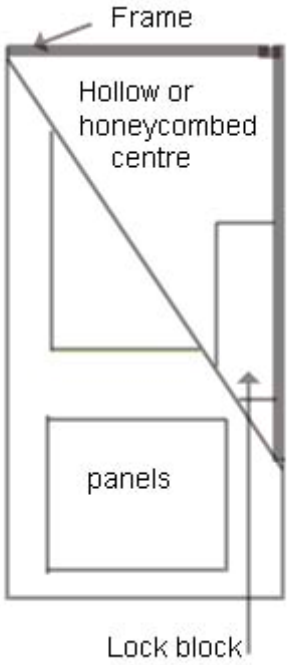
FITTING A MORTICE LATCH

If you are reading this because you are about to hang a door, please check you have the door round the right way. See our hanging a door project first.

A mortice latch is the most common of door furniture being fitted to internal and external door alike. It is simply a catch with a handle either side.



Flush doors and lightweight hollow panel doors have lock blocks fitted inside them to allow for the lock or other door furniture you wish to fix. The cut away picture of a door below shows the frame and lock block which usually extends about 200mm either side (up and down) from the centre of the door.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

First of all mark the position on the door where you want your handle and using a carpenters square, draw a line around the edge and both sides of the door, extending about 3 inches into the centre of the door. Draw the line lightly so it can be rubbed off later before painting.

The image top right shows the line extending toward the middle of the door. This serves as a marker for every operation while fitting a mortice latch. On the edge of the door, mark the centre of the line. Using a suitable drill, either a flat wood bit or an auger bit, (The diameter of door latches varies so either measure yours, or see the fitting instructions on the packet. Common sizes are 18mm and 22mm) drill into the door. Keep the drill absolutely level while you drill and if you are using a panelled door as shown above, mark your drill bit with a piece of tape to make sure you do not drill too deeply. You can see how to do this in our fixing to masonry project. Measure the length of the barrel of the latch, including the latch plate itself.

When you have drilled the hole, which should be a couple of mm bigger than the barrel diameter, slide the barrel in so the latch plate sites against the edge of the door. The plate needs to be "let into" the door edge and this is done by marking round the latch with a sharp pencil. Pull out the barrel again and chisel out the insides of the mark you have made to the

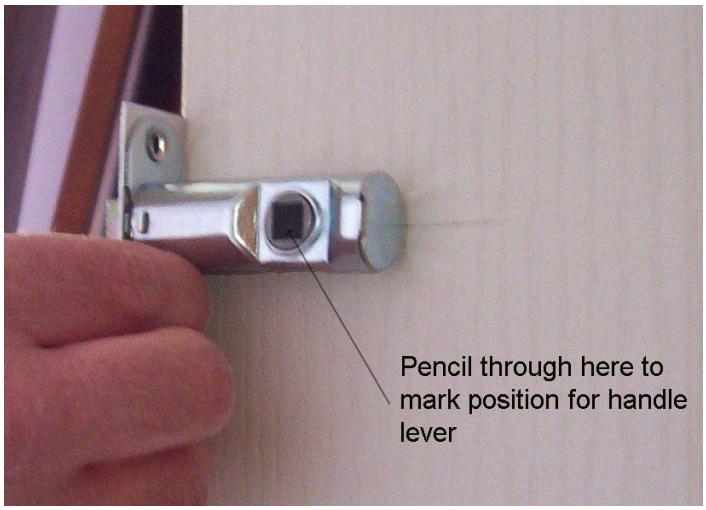
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

depth of the latch plate (usually 2mm). Be very careful as you are chiselling as the latch plate will almost always be very close to the edge of the door. Most hollow doors have a very thin cover and it is easy to dislodge this as you cut away. The easiest, surest way to get an even cut is to chisel the latch recess as you would a hinge while hanging a door, lots of little cuts to the correct depth. Don't forget to leave the pencil line in place or your recess will be cut too large.

When the recess is chiselled out, push in the barrel to fit. The latch plate on some barrels has raised edges behind the screw holes. If they are not too deep they can be sunk into he timber by tapping the latch plate with a mallet. The best way however is to push the latch plate into the recess as shown above right, and mark the centre of the screw holes, then pull it out again and drill lightly on the marks, with a 8mm wood bit. This allows the hole edges to sink into the timber leaving the latch plate to sit absolutely flush with the edge of the door.

Pull the barrel out again and hold to the side of the door along the line you have marked. Make sure the front of the latch plate is flush with the edge of the door and push your pencil through the hole in the barrel. Do this on both side of the door.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Drill through the door, from both sides. The handle securing plates will be large enough to cover a hole which is larger than the bar going through it and in most cases the same drill bit can be used which weas used to drill out for the barrel. DO CHECK THIS.

When the hole is through the door, the barrel can go back in and, using pilot holes, be screwed in. The bar is pushed through and the handles slid onto either side. Again, using pilot holes, fix the handles. Be extra careful when fixing these handles as, more often than not, the screws are slotted heads rather than cross heads and the driver can slip quire easily, scratching the handle.

Now push the door into the opening of the frame. Extend the mark on the door to the front of the frame and round into the frame. This line is also the centre of the keep which is the small plate which catches the latch as you close the door.

Put the keep up against the frame, with the centre of the keep in the centre of the mark and marl all round the keep with a pencil. Cut out for the keep plate justr as you did for the latch plate. Screw the keep into position. Using a 6mm chisel, cut out the centre of the keep, through the keep plate, to allow the catch to click in when the door is closed. The fixed keep can be seen in the right hand image of those above.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

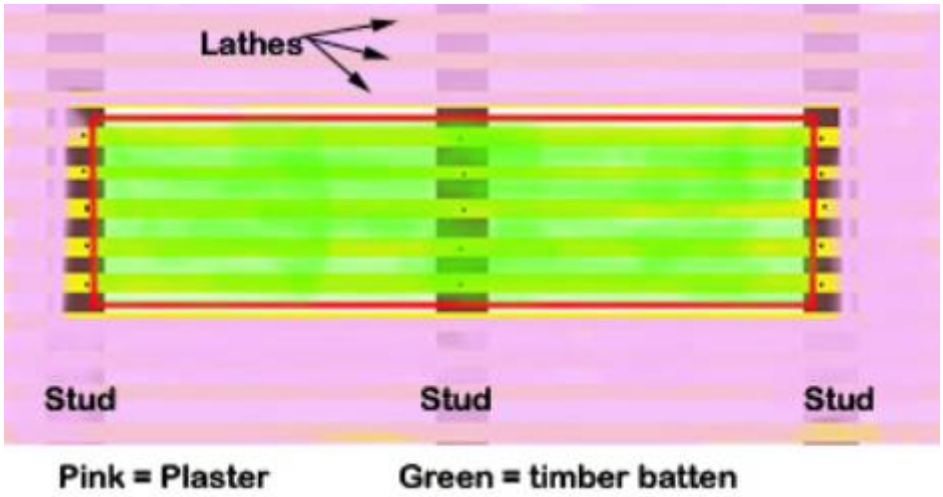
FIXING TO LATHE & PLASTER

There are many ***fixings*** on the market today and yet, as far as we are aware, no fixing is available for a good, solid, reliable fix to lathe and plaster. It's a popular question on DIYdoctor and our many years of experience have taught us not to take chances with wall plugs, toggles and plasterboard fixings. Please see our project on ***fixing to plasterboard*** for more information.

A section of a lathed wall with plaster removed.

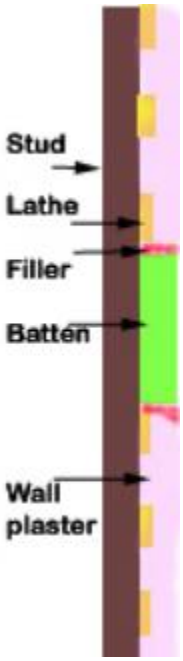
Below is a section of a lathe and plaster wall face on. You can see the pink plaster, which is pushed onto and into the yellow lathes, which in turn are fixed at narrow spacing to the upright timber studs.

(Not to any scale)



A section of the wall above where you can see how the plaster is pushed into the lathes.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



(not to any scale)

Lathe and plaster was used as a wall finish long before plasterboard and took over from the centuries old Wattle and Daub finish. Wattle was the name for twigs and branches that were interwoven between the upright timber posts that formed the framework of a dwelling. Daub was the name given to the various forms of mud, clay, lime, manure or other locally available, easily workable fillers that could be pushed smoothed onto the wattle. The daub was pushed, usually by hand, into the web of branches forming a weatherproof surface. Lathe and plaster is an extension of that idea and was used long after the invention of plasterboard by Augustino Sackett in approximately 1888. Plasterboard took a while to catch on and was introduced to the UK in 1917. It became widely used and started to replace Lathe and Plaster by the 1930's.

The plaster is pushed onto and into the timber lathes, which have been nailed to upright studs. Gaps are left between the lathes to allow the plaster to be pushed in. When it sets it clings to the lathes making a fairly strong surface. However, most lathe and plaster walls and ceilings in this country are at least 40 years old and often past their "sell by" date. The lathes are very flexible allowing the wall to move, the plaster by now, often crumbling behind and in between the lathes. The only solid fixing therefore is to replace some of the lath and plaster with a solid surface to fix to. This involves making a hole in the wall between two studs. The diagram above shows the timber batten across 3 studs, but between two is fine. Using a hobby knife or sharp chisel, cut out your hole and cut the lathes back onto the timber studs. The plaster and lathes are usually about 1 inch thick and a batten size of 2 inches by 1 inch PAR or PSE (These are timber merchants abbreviations for Planed All Round & Planed, Square Edge which both mean the timber has been planed to a finish and is not in the rough "Sawn" state) is sufficient for fixing most things. You can increase the width of the timber by as much as you like to fix items like coat hooks and microwave brackets which you would not ordinarily be able to fix to a lathe and plaster wall.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Cut the hole as closely as you can to the size of the batten but it is very likely you will have gaps between the batten and the plaster surrounding it. Before you fix the batten it is a good idea to paint the edges with an undiluted solution of PVA adhesive and bang a few 20mm galvanised staples in along the edges. When the batten is fixed you can then fill around the perimeter with either plaster, polyfiller or flexible filler from a tube. The choice of flier will depend on the size of gap, but the PVA will allow it to stick to the edges of the batten and the staples will give it reinforcement.

Hopefully, whatever it is you need to fix to the wall will cover the batten (which of course you can paint to match the wall) but if not, and given that its unlikely your painting match will be “seamless”, sometimes it’s a good idea, instead of trying to disguise the batten, to make a feature out of it by painting it an entirely different colour and even putting some beading round it.

For those who are experienced in DIY it is possible to use a slightly thinner batten, or notch the batten into the studs a little, and cover the batten with plasterboard which can then be plastered right up to the edges of the existing plaster. This makes the fixing batten invisible.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

FIXING TO PLASTERBOARD AND PLASTERBOARD FIXINGS

A very popular question to DIYdoctor is "how can I fix things to plasterboard walls?". There are a variety of fixing available just for this but what you cannot do is use ordinary wall plugs. The wall plugs do expand as you screw into them, but the plasterboard is soft and the expansion simply widens the hole you have put the plug into. In no time at all it will work loose. Our photographs below are done using a small piece of plywood as we did not have any plasterboard on site. Plasterboard comes in 3/8 inch and ½ inch sizes and is larger than the board we used. Any gaps therefore will not occur. Please note that none of these products will enable you to fix to lathe and plaster walls or ceilings. Please go to our *fixing to lathe and plaster* project for information about that.

To fix to plasterboard properly you need to use proprietary fixings. This applies to hollow doors also. Below are a variety of fixing available. You can click on the images to buy.

This little beauty is called the Redidrive. It is the strongest of all plasterboard fixings. The principle is simple. A pilot hole of 2 or 3 mm is drilled into the board and the redidrive bottom section is screwed into the hole. This is done without the screw in as the top of the Redidrive casing has a slotted head. It is not absolutely necessary to drill a pilot hole as the casing has a pointed shaft which will make its own hole when pushed and screwed. However if you have managed to choose a spot where there is a timber stud behind, the Redidrive will simply snap when it hits the timber and leave you with a hole you do not want. Drilling a tiny pilot hole will warn you if there is anything behind the board and also stop any movement in the Redidrive when you insert it. When the Redidrive is fully inserted, you simply screw whatever you need to fix, to the wall.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

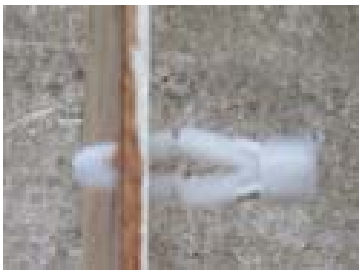
1

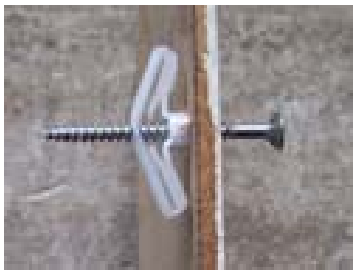
2 3

Image 1 shows the face of the Redidrive when it has been screwed into the plasterboard. Image 2 is a section through the wall showing how it is simply a question now of screwing into the Redidrive and image 3 shows (in this case a towel rail bracket) something fixed to the wall. We use Redidrive for holding up kitchen units in plasterboard walls. They are good.

The second fixing we use is called a plastic toggle.

This is inserted (8mm hole for a medium toggle but always read the hole size on the packet first.) through a pre-drilled hole after squashing it flat. When a screw is inserted it goes through the hole in the back of the fixing and as you screw it, it pulls the back up to squeeze the fitting against the back of the plasterboard. Once again anything can be screwed to the wall now. This fitting is also very strong but, if used on their own, heavy items can tend to "tilt" the actual fixing in its hole and while they will not fall off, can become a little loose after a while. Ideal for shelf brackets which create a pulling force from the wall as well as a weight force downwards.





Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Next comes the hollow wall anchor. Again used individually these are not ideal for fixing heavy objects but as with the toggle above and the spring toggle below, anything that creates a pulling effect from the wall is ideally held at the top with these.

The hole is drilled in the board, an anchor pushed in. As the screw is turned it pulls up the body of the anchor. This grips the back of the plasterboard as you can see by the top picture.

There is one hammer in fixing which we use a lot. Its very easy to use, simply hammer in and it will take a lot of weight.

Then we have the Spring (or gravity) toggle or Butterfly fixing. The principle is the same. A hole is drilled, the butterfly wings are held together while the unit is pushed into the hole, the crew is tightened to clamp your fixture to the wall.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

All the above are fixings for use in plasterboard which will give you the greatest strength. Below are images of fixings which for jobs such as picture frames, dado rails, and general lightweight duties.

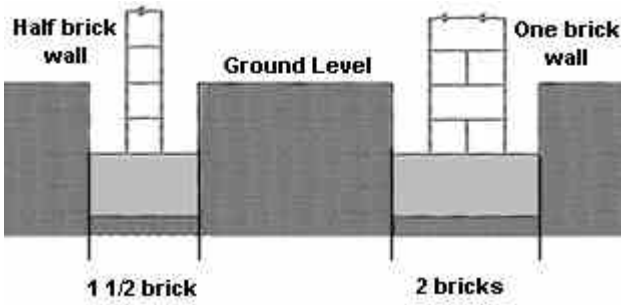
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Foundations for light garden walls

foundations on a slope - a retaining wall

NOTE: These guidelines are only for light garden walls.

The most important part of any wall is its foundation, and if these are out of true, you will have a hard job producing a good wall.



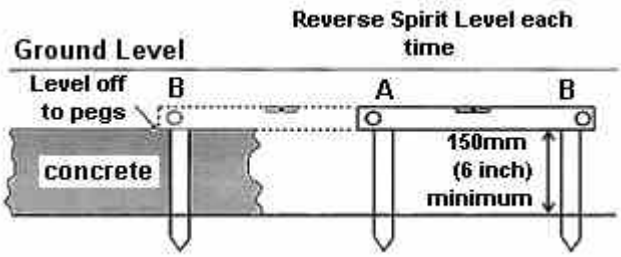
The foundations need to be at least 3 times the width of a half brick wall (i.e. 34 cm/13.5 inch) or at least twice the width of a one brick wall (i.e. 45 cm/18 inch).

For piers, the foundations should have a margin on all sides of at least half a brick (i.e. 11 cm/4.5 inch).

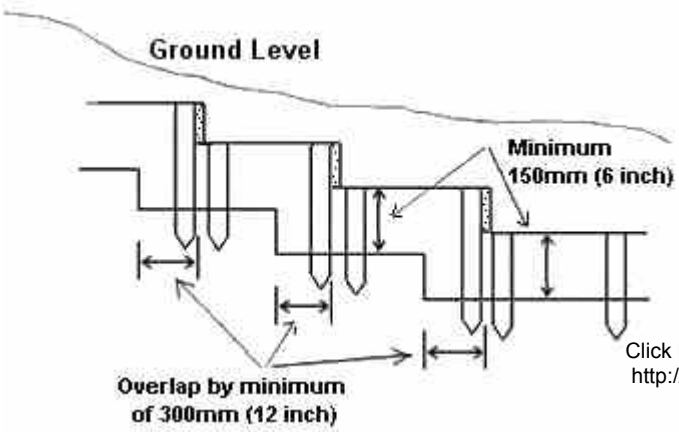
One of the easiest ways to mark our foundations before digging the trench is to use a 'sand line'. Once the position of the foundations have been decided upon, put a peg into the ground at each end, stretch a line between the two and shake sand along the line. Removing the line before you start digging will prevent the line getting in the way or being damaged. Always cut foundations horizontal, on sloping ground this may involve stepping them to accommodate the slope (see below).

Start digging at the lowest part and go down until firm ground is found. For a light garden wall, a trench 30 cm (12 inch) deep should be sufficient if the soil is firm and well drained. But on unstable or weak ground, make it 46 cm (18 inch) deep.

Once the trench has been dug, insert a peg into the bottom at one end so that the top of the peg is level with the required depth of concrete (minimum 15 cm (6 inch)). Then insert further pegs along the trench using a spirit level to keep the top of the pegs level; reverse the spirit level between alternate pairs of pegs so that any defect in the level will have minimal effect.



Once the full length of the trench has been pegged, fill the bottom of the trench with concrete (6 to 1, all-in ballest to cement) to the top of the pegs. Always lay the full length of foundations in one session, and make sure that the concrete is well consolidated.



Foundations on a slope.

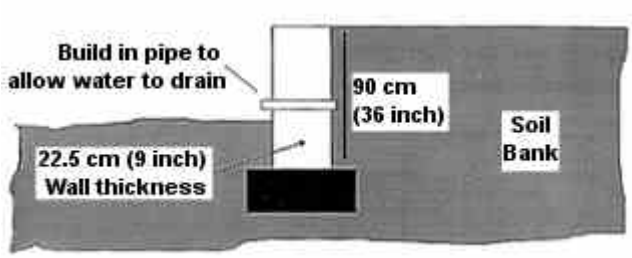
Where the ground is on a slope, a little more effort is required when digging the trench. Again start

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

digging at the lowest point and cut horizontal steps into the slope working up hill. Try to keep the steps equal to a whole number of bricks plus mortar in length and height (i.e. 22.5 cm (8.75 inch) and 7.5 cm (3 inch)) - this will make laying the bricks easier as fewer bricks will need to be cut and the courses will line up as the wall is built up.

Pegging out the trench is similar to a single level trench except that shuttering boards must be fitted at the front of each step to create the steps. When the concrete is poured into the trench, start at the top of the slope and work down, you may find that the upper steps have sunk by the time the lower steps have been filled and levelled, in this case, return to the upper steps, add more concrete and work your way down once more.

Retaining walls



When building walls to retain soil, the height of the wall should be no more than 4 times the thickness. Thus for a single 22.5 cm (9 inch) brick wall, this limits the height to 90 cm (36 inch).

To help water escape from the retained soil behind the wall, it helps to fill behind the wall with gravel (or similar) and incorporate drain pipes in the wall.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Ron insulated between the rafters and installed a workshop/garage heater in his workshop, but the concrete slab still remained really cold. Ron decided to install a new insulated floor system, as well.

The first step is to clear everything out and sweep the floor clean.

The sub-flooring material Ron used is a product called DRIcore. This is an engineered wood product made up of wood chips or flakes that are compressed under high pressure using waterproof glue. On the back side of each panel is a polyethylene moisture barrier.

When using this product, it is important to bring it inside at least 24 hours before installation. This will allow the material to acclimate to both the temperature and the humidity in the room.

The sub floor comes in two-foot squares that interlock with each other using tongue in groove joinery. Glue is not used in this floor system.

This is called a floating floor system, which means it is not attached to the concrete underneath, but instead sits or floats on top. This entire floor expands and contract with changes in humidity and temperature, which means you need to use spacers around the edges of the floor to create a quarter inch gap. When the floor installation is complete, the spacers can be removed so that the gap enables the floor to move as it needs to.

After each tile is set in place, set a tapping block on the edge of the panel and tap it gently with a hammer to secure the joint firmly together.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If your existing floor is uneven, use a straight edge to locate the low spots, which will create a gap underneath the straight edge.

The floor panels are easily adaptable to these irregularities with simple shims that are designed to fit over the molded panel bottoms. If necessary, you can stack up to four of these on top of each other. Masking tape helps hold the shims in place when you flip the panels over.

When you come to the end of your first row, you will probably need a piece smaller than a full panel to fill the remaining space. Simply measure the space, set your table saw fence to the required dimension, and then make the cut. A hand held circular saw or jigsaw can also be used to make these simple cuts.

The cut piece drops into place, but you will not be able to use a hammer and tapping block to tighten up the joint. Instead, use a tool called a pinch bar, which slips into the gap next to the wall and hooks over the edge of the panel. The opposite end is bent upward to form a striking surface. A few hammer blows brings the joints tightly together. Begin the second row by staggering the joints so that they fall directly in the center of the boards of the first row. Staggering the rows in this way creates a much more stable floor.

When working in a doorway, you will need to notch out a panel to fit around the corner.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The easiest way to do this is to set the panel in place and then use a straight edge or square to extend the wall lines onto the board.

A jigsaw makes cutting out the notch quick and simple.

Not only does this floor go in quickly and easily, but it also looks good. It is an ideal sub-floor for wood, carpet, vinyl or laminate.

Because Ron was installing his floor in a garage and workshop he decided on something called the G-floor from Better Life Technologies for his floor surface. This garage floor covering comes in nine-foot widths and simply rolls out, but it lies perfectly flat and stays in place without the need for adhesive.

In just a couple of minutes, this material transforms the look and feel of the entire floor.

To trim the edges, use either a hook shaped utility knife blade, or a pair of scissors. Simply cut the floor to fit as you work your way around the edge of the room. To hold the seams tightly together, apply double stick carpet tape to the back of the floor.

Carefully remove the protective liner from only one side, because you want the tape to stick only to the covering and not to the underlayment. This leaves the floor covering free to expand and contract with changes in temperature and humidity.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Remove any bubbles or ripples with a push broom, working from the center to the edges. This new flooring is tough, durable and good looking. If you ever plan to park a car on this surface, it is resistant to oil and gasoline.

The floor is not attached to anything, so you can easily remove it if you ever need to. Although this new floor covering is only about an inch thick, it still offers a pretty good insulation value, which can make any workspace much more comfortable.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

General do it yourself safety comments

Safety do's - Safety don'ts

The home can be a highly dangerous area so every diy'er needs to take some precaution and, more importantly, use common sense. The following are some basic principles for the do it yourself person.

Do's

- Always keep safely in mind before you do any diy activity, use caution, care, and good judgement - if in doubt, don't !
- Always read the labels on cans containing paints, solvents, and other products; AND always follow the guidelines and any other warnings.
- Always read the manufacturer's instructions (especially the warnings) before using any tool, especially power tools with cutting blades/bits.
- Always pay deliberate attention to how a tool works, if you understand it's operation, you are less likely to cause injury.
- Always know and accept the limitations of your tools - use the appropriate tool for the task. Do not try to use a tool for anything it is not designed to do.
- Always remove the key from any drill chuck (hand or stand mounted) after you have removed/fitted a drill bit. Do not leave the key in the chuck even when the drill is switched off.
- Always wear the appropriate protection for the job in hand. This may involve gloves, facemasks (to filter dust etc.) and/or eye protection.
- Always keep your body (especially hands) away from the business ends of power tools using blades, cutters, and bits.
- Always make sure that any tool adjustment is secured before using the tool - it is always better to double check an adjustment - e.g., always check the fence on a saw bench - this will avoid possible injury and scraped material.
- Always be sure that the electrical supply is safe before using it; do not overload any circuit. Make sure all power tools, extension cables and electrical outlets are serviceable and undamaged. Do not use power tools in wet conditions.
- Always check for possible cables/pipework before drilling or cutting 'blind' into any wall or other surface. Take care when you cannot see the reverse side of what you are drilling or cutting.
- Always use special care when using a saw bench; older benches may not have the latest safest features (blade guard, safety cut-out etc.). Avoid sawing short pieces if you can, as these can be hard to keep a firm grip of..
- Always clamp small workpieces firmly to a bench or other work surface when using a power tool on them.
- Always remember that things can go wrong very quickly and the body's reaction will not always be quick enough.
- Always use both hands where a tool is designed to be used two handed.
- Always ensure that the work area is adequately lit.
- Always check your local building regulations before carrying out any new construction or major remodelling. The regulations are intended to avoid safety hazards and should be observed - they should not be considered obstructions to be circumvented.
- Always check ladders and steps before use, make sure the rungs and sides are undamaged.
- Always check the security of a ladder or set of steps before you start to climb.
- Always be aware and alert!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Don'ts

- Never wear loose clothing, hanging hair or jewellery when using power tools.
- Never try to use a tool (especially a power tool) for any task it was not designed to do.
- Never work with power tools when you are under the influence of alcohol or drugs or are tired. If in doubt - don't. Any of these factors can impair judgement of your ability, your physical state and general safety aspects - if always better to delay a job than risk serious injury.
- Never use a power tool which is damaged in any way (case, switch or cable etc.). If it starts to make an odd noise or emit smells - stop and investigate.
- Never cut small, loose pieces of wood, metal or other material using a power tool - small off-cuts which you cannot hold or secure, will tend to fly off with potential for injury.
- Never change a drill bit, router cutter or saw blade or make any adjustment to a 'cutting' power tool - until the power cable has been unplugged. Do not rely only upon the switch on the tool or outlet.
- Never use power tools is you are at risk of overbalancing, reposition any ladder, scaffold etc. to make the job comfortable.
- Never work with blunt tools (saws, drill bits, cutters etc.). Sharpen the tools yourself, have them sharpened, or throw them away and use a new tool.
- Never use a power tool on a workpiece which is not firmly secured.
- Never drill or cut 'blind' into a surface before checking the possible location of electrical cables or pipework.
- Never saw a large workpiece unless it is well supported both sides of the cut or there is someone else to support the off-cut.
- Never saw a workpiece supported on any part of your body (or anyone else's body !).
- Never carry sharp tools in your pocket. If you want to carry such tools, use a special-purpose tool belt.
- Never relay on your weight to stabilise a ladder or mobile steps, if necessary get someone to stand at the bottom or use stabilisers.
- Never overreach when working on a ladder or steps, always re-position the ladder/steps.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Gun applied sealants and adhesives

general purpose water based - general purpose silicone based -
kitchen and bathroom - frame - roof and gutter - adhesives - gun-free

When you walk into a DIY store, you will be confronted by shelves of gun applied sealants to fill gaps and glue. Unlike traditional fillers, most of these stay flexible and will not shrink, keeping gaps filled and, where relevant, waterproof. They usually are available in 'standard-sized' tubes designed to fit in a cartridge gun, this has a trigger operated piston that squeezes the sealant from the tube, through the nozzle and into the required position. There is one popular adhesive which is not in a standard length tube, it's longer and does not fit a 'standard' gun.

To choose the right sealant for the job, you need to think about which features you need in the sealant, the important features include:

- the type of material it will adhere to;
- the size of gap it will fill;
- its degree of mould resistant;
- how waterproof it is;
- whether it can be overpainted, or not;
- whether it can be used indoors and/or out of doors;
- whether it is solvent based or gives off fumes when curing;
- what it is like when it cures, i.e. solid, flexible or very flexible.

When using a sealant, always make sure that the surface is sound, dust free, and dry, the sealant is 'squeezed' onto the surfaces and it often depends on gentle surface contact to create a bond.

Types of sealants

General purpose Water based sealant

General purpose, water based sealants are sealants for indoor use, such as filling gaps along skirting boards, around door and window frames etc. They are usually supplied white as it can be over painted with emulsion or solvent-based paint as soon as the surface has cured.

Some waterproof sealants are water based.

General purpose Silicone based sealant

Silicone sealants produce a waterproof seal that can be used indoors and out. Most manufacturers offer it in white, translucence and possibly a choice of colours. These sealants give off a distinctive smell until it cures.

Kitchen and Bathroom sealant

These are usually designed to seal areas where water seepage is likely (around a sink or bath etc). They need to be waterproof and mould resistant. Usually available in white.

Frame sealant

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

For external use, silicone sealant is used as a water-resistant sealant and joint filler, formulated specifically to seal between wooden or UPVC door and window frames to the surrounding material. Silicone cannot be over painted but is available in a number of colours.

For internal frame sealant, water based sealant can be used and it can be over painted once the surface of the sealant has cured.

Roof and gutter sealant

An all-purpose exterior sealant that can be used to seal leaking joints in guttering and downpipes as well as stopping leaks in flat roofs. Generally it is only available in black.

Adhesives

A number of adhesives are available for application via a 'sealant' gun. They are able to provide both gap-filling and high strength adhesive in one pack. They tend to be suitable for a very wide range of materials, i.e. wood, metal, brick, plaster, ceramics, glass, plaster, concrete, uPVC etc.

Gun-free sealants

A number of sealant are now available in easy-to-use aerosol dispensers making the use of a cartridge gun unnecessary. The sealant is extruded from a nozzle when the cap on the container is depressed, giving good fingertip control.

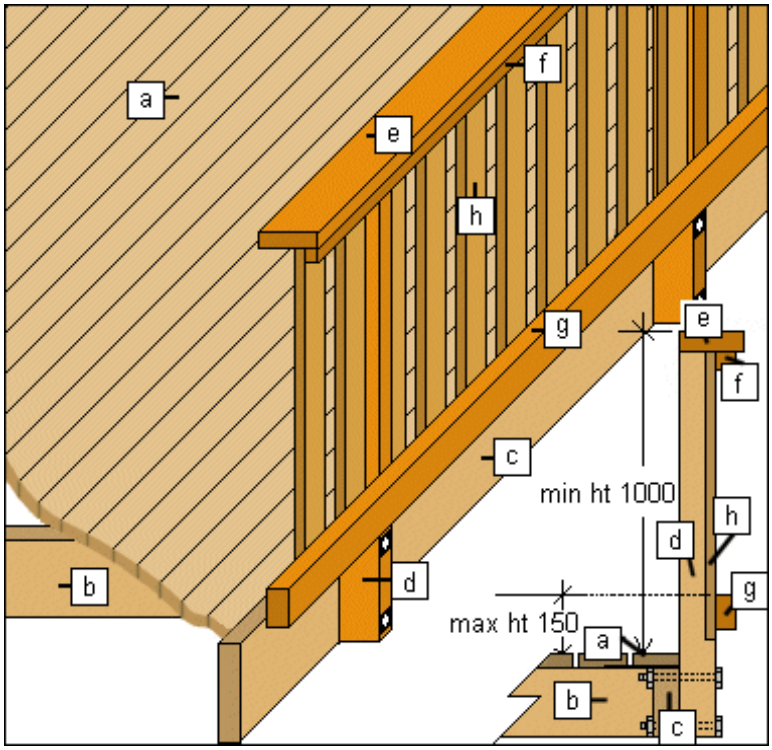
Safety

Always read and follow the instructions on the sealant cartridge before using it.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Handrail Anatomy

(One example from many acceptable solutions)



(a) Boundary joist: Must be H3 treated. The boundary joist is fixed to the perimeter of the deck to give a neat finish and if the boundary joist is required to support the handrail, then it must be fixed to the joists using 2/M12x100mm coach screws with 50x50 washers and also with nail plates fixed to top and bottom of joists.

(b) Baluster (handrail post): The baluster is fixed to the boundary joist using 2/M12 bolts with 50x50 washers. The bolts should be 25mm from top and bottom of the boundary joist. The size of the baluster depends on the handrail structure and the baluster spacing. For example, if the top rail is 150x50 as shown in the diagram above and the balusters are 2000mm apart, then the balusters must be 100x100. If the balusters are 1800mm apart, then the baluster can be 100x75.

(c) Top rail: The height from the deck to the top of top rail must be at least 1000mm. The top rail is fixed to the balusters with 100mm galvanised nails. (minimum of 2 nails for baluster spans up to 1400mm and a minimum of 3 nails for spans above 1400mm.

(d) Blocking: The blocking (50x50) is fixed to the underside of the top rail and is used to support the palings.

(e) Bottom rail: The top of the bottom rail must not be higher than 150mm from the deck. The bottom rail is fixed to the balusters using 3 galvanised nails penetrating no less than 50mm into the baluster and the size of the bottom rail depends on the baluster spacing. For example, If the baluster spacing is up to 1700mm then the bottom rail should be 100x50, if the baluster spacing is up to 1800mm then the bottom rail should be 150x50, and if the baluster spacing is up to 2000mm then the bottom rail should be 100x75.

(f) Palings: Palings should be 25mm thick timber and at least 65mm wide, and have a

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

maximum gap between palings of 100mm. The palings are fixed to the top and bottom rails with:
(1) Two 60mm x 2.8mm shank diameter nails if the paling is 200mm wide or less.
(1) Two 60mm x 2.8mm shank diameter nails at 150mm centres if the palings are wider than 200mm.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

HANGING A DOOR (Internal)

(Fitting a door)

The first mistake some people make when hanging a door is to start fitting furniture (handles, hinges etc) before the door is cut to size. Standard door sizes are available to fit most existing frames but houses move. Some older houses will have moved dramatically and one of the first things that twists and bends is the door frames. Almost all doors have to be trimmed to fit the opening they are to go into and sometimes the opening has been specially made for a feature door. In this situation it is fairly easy to adapt or "build out" the frame to suit the new door.

If you are ever in the position of adapting a frame do not be tempted to fit the frame to suit the door or the existing opening. If the existing frame is leaning over or twisted, insert your new timbers upright and square. You should always endeavour to start with a square frame and cut the door down to suit. Carpentry is not easy. It takes time to learn and a really good idea is to get some basic techniques under your belt before trying major projects.

Standard internal door sizes are.

525mm x 2040mm	Metric size door for metric frame
626mm x 2040mm	Metric size door for metric frame
726mm x 2040mm	Metric size door for metric frame
826mm x 2040mm	Metric size door for metric frame
926mm x 2040mm	Metric size door for metric frame
610mm x 1981mm	2ft x 6ft 6 inches
686mm x 1981mm	2ft 3 in. x 6ft. 6 in.
762mm x 1981mm	2ft. 6in. x 6ft. 6in.
838mm x 1981mm	2ft. 9in. x 6ft. 6in.

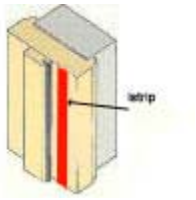
It is possible to get other door sizes "off the shelf" so always enquire, but generally speaking these are the most common door sizes and even so it is unlikely that you will get anything other than the 3 highlighted sizes in Diy stores. You may need to go to a builders merchants for other sizes.

Doors are either "flush doors" or "panelled doors" . A type of panelled door is shown below and simply means that the door is divided into panels with two side rails, a top and bottom rail and a mid rail. A flush door is simply flat on both sides.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

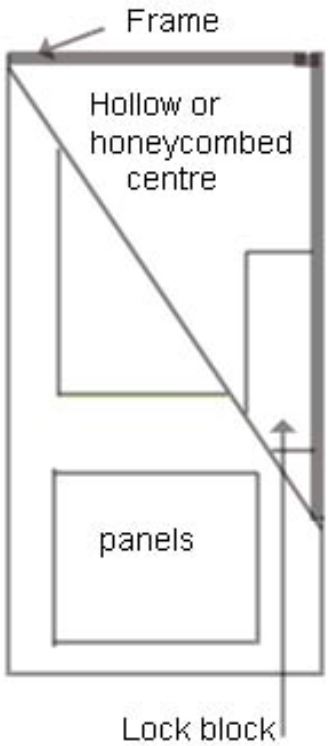
For extreme sizes or sizes which cannot be matched or made up, it is possible to buy "door blanks". These are oversize, solid, flush doors which can be cut down to any size. Doors come in thicknesses of 1&3 eighths of an inch, 1 & 3 quarters of an inch, and 2 inches. Check the measurement between the front of your frame and your door stop before you start work.

Internal Doors are available as "hollow" lightweight doors or fire- check doors. Fire check doors should always be fitted to the kitchen and internal garage door and if you have a loft conversion they will be stipulated throughout. Their construction means that, when closed, the fire will take either ½ or 3/4 of an hour to burn through, depending on the door used. Intumescent strips can also be fitted into doors and frames. These are strips which swell up at the first sense of heat and stop smoke from getting through any gaps. You will also, on the construction of a loft conversion, need to install automatic door closers to arrest the spread of any fire.



The first step is to make sure you have the door the right way round. At the top of a new flush, or hollow panelled lightweight door the word lock will be printed over to one side. This means that there is a section of timber fixed inside the frame of the door which is there to allow the door lock or latch to be fitted. See our project on fitting door furniture to find out how to fit the common mortice latch to doors. The images below show the top of a new door. Lock is clearly marked. Obviously the hinges are hung on the other edge. The lock block usually extends approximately 200mm up and down from the centre of the door. The right hand image shows the lock block in position on the door. If you use a screwdriver to tap down the side of the door you will hear the difference when you get to the lock block.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



To get the door to fit the frame it is first necessary to " offer it up" and mark it. As you can see in the images below we had to add timber to the existing frame to get a standard size frame. This was cut to size and screwed to the existing frame.

The door was placed in position up against the new frame and the inside of the frame was marked on the door with a pencil. You will probably need a hand with this. This new door was being hung on the opposite side to the old one so the old hinge recesses will need to be filled. This can be done with either filler applied in a couple of layers, or you can try your carpentry skills at cutting a timber block down, gluing and pinning it in place (punching the heads of the pins down with a nail punch) and sanding it down to finish flush with the frame. This is called "scarfing" .

Drawing lines and cutting timber in any form can cause the novice a great deal of problems. We often get emails asking simply "How do I cut a straight line" and " I have marked my work and cut on the line but I always cut my timber too small". The answer to the first is to let the hand saw do the work. Make sure you are looking at the saw from directly above it and not from the side. If your body is leaning, the chances are the saw will be leaning too, giving you a cut which is far from square. Hold the saw with your finger down the handle pointing to the work and make sure the timber is totally secure. Any movement in the timber and the saw will judder and go off line. Ok, so you have the door marked to the internal size of the frame. Another easy thing to forget is that the saw has a thickness of about 3mm including the set of the teeth. If you cut along the line therefore, the door will be 3mm smaller than you intended. This may not sound a lot, but should you cut marginally inside the line, you are talking about a difference of 5mm and this is the difference between a good job and a shoddy one. Remember ALWAYS LEAVE THE LINE.

Whenever you mark a piece of timber, the line you have drawn it the exact size you want the wood. If you cut or plane the line off, your work will be smaller than you intended. Cut the work along the side of the line, just leaving the line in place. With the line still visible you cannot be wrong. You can always plane a little more off, but you can't stick it back on! People think it is so easy to grab a saw and start a piece of carpentry but even cutting a straight, square line is a problem until you have mastered it. In this instance, as we had rebuilt the frame, the cut was square, but with older frames you may find you have twists and kinks and

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

it will not be possible to use a saw for the cut down. Using a plane is the correct option here and we obviously prefer a power plane. Fully qualified carpenters have had to practice this, it makes sense that you should do so also.

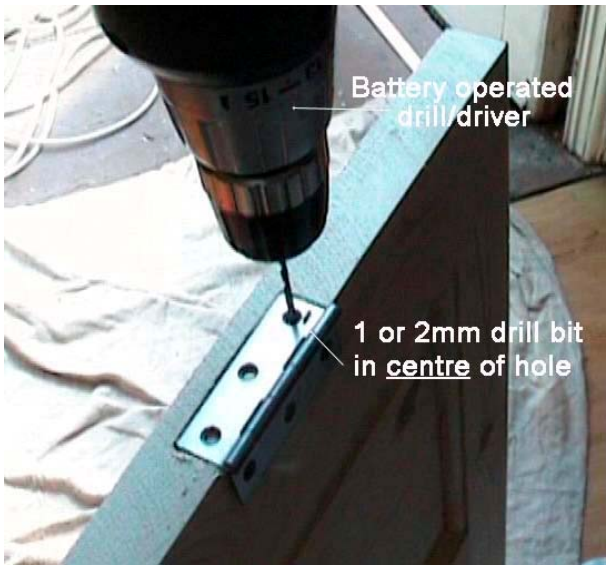
We use power tools wherever the amount of cutting allows it. Time is important to us, its our living!

Having cut the door to the correct size we have now got to hang it. This can be done on a variety of ***hinges*** but for most doors it is the standard butt hinge that is used. There is no regulation as to where these hinges should go with regard to the position on the door or frame but we like to keep the top of the top hinge at 7 inches down from the top of the door and the bottom of the bottom hinge at 7 inches from the bottom of the door. Mark the position of the hinge by opening it at right angles and laying it on the side of the door to be hung. A lot of DIY web sites will tell you to mark round the hinge with a hobby knife. Do not do this it is dangerous and almost impossible to cut along the grain neatly. Mark with a pencil and then scribe the long edges with a mortice gauge if you need to.

Using a **sharp** chisel, cut as shown below, tapping firmly with a mallet to avoid breaking the chisel head. Remember the pencil line is outside the hinge so you need to cut inside this line. Once again, LEAVE THE LINE!

Chisel out the surplus and make sure your hinge fits neatly and is not "proud" of the timber. Neither should it be set too far in as this will cause the door to bind. The hinge should be set in just enough to be flush with the edge of the door. Practice this cut on an offcut of wood for a while this will benefit you greatly if you have a number of doors to hang.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

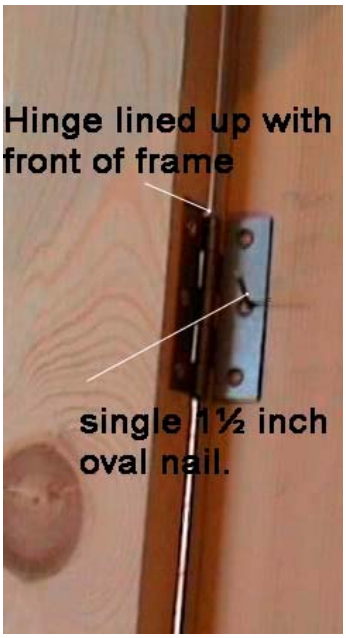


Drill ***pilot holes*** for your hinge screws and make sure they are in the centre of the hinge holes. A screw which is against the edge of the hole will push the hinge over and out of line. When the hinges are cut in, stand the door in the opening. Check all round for the gap to be uniform. In years gone by the carpenters apprentice was made to carry an old penny, this was used to make sure the gap all round the door was the precise width. Make sure you have enough depth under the door if you are going to lay carpets etc later. Wedge the door in place. You can cut some timber wedges for this, as you can see we use chisels!

With the door in the correct place you can mark the position of the hinges on the edge of the frame.

Take the door away again and using the mortice gauge which is already set to the hinge width, and the carpenters square, you can mark the full position of the hinge on the frame. This can then be chiselled out also.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Wedge the door in position once again and, if you are on your own, you may find it easier to keep the top of the door in place by pinning the top hinge temporarily in place. This ensures the door does not move as you screw the hinges in.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Your door should now swing easily back and forth. Our particular door frame needed new door stop which is the last thing to go on. This is imply pinned to the frame up against the door when its in a closed position. When the stop is in position you can fit the door furniture you have chosen.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our guide to hanging wallpaper, we have split this tutorial into two parts, in this part we will cover roll calculation, wall preparation, order of hanging, marking out and cutting the lengths.

If you intend to hang lining paper and haven't yet then see our guide to hanging lining paper.

To complete this task you will need the following items:

- Wall Covering (wallpaper)
- Suitable Wallpaper Paste
- Wallpaper Pasting Brush
- Decorating table (pasting table)
- Suitable filler (if required) along with a suitable applicator
- Wallpaper Seam Roller
- Tape Measure
- Spirit Level
- Blunt Pencil
- Paperhanging brush
- Suitable Scissors

When working at heights always ensure that the structure is safe and secure. Never stretch out, always get down and re-position the scaffold.

Buying Wallpaper.

If you have already purchased sufficient wall covering then scroll down to the next section.

First a few notes about buying wallpaper.

When you buy a wall covering ensure that each roll is exactly the same as the rest including batch number and shade number. Also it is better to buy one roll too many (for spare) than end up with not enough to finish the project.

Wall coverings come in a variety of types including self-pasting, washable, peelable and so on, most manufacturers use symbols to indicate wallpaper type, you can find a list of common symbols in our guide to wallpaper product labels.

Roll Calculation

To calculate how many rolls of wall covering are needed use a simple calculation:

1. Measure the perimeter of the room and then divide this figure by the width of the roll (**X**).
2. Divide the length of the roll by the drop **+ 10cm** (**Y**).
3. Divide **X** by **Y** to give the number of rolls needed.

An example, say the perimeter of the room (including windows/doors) is **14m** and the width of the roll is **0.6m** then **X = 24** (rounded up).

and let's say the roll length is **11m** and the drop (+10cm) is **2.5** so **Y = 4.4**

Dividing **X** by **Y** gives us **24 ÷ 4.4 = 5.45**, so we need 6 rolls to complete the project.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Preparing the Walls

If you have already prepared the walls then skip to the next section.

If the walls have an old covering then remove it (see our guide to stripping wallpaper) for some tips.

Inspect the wall surfaces for cracks, holes, loose plaster and any other imperfections.

For small cracks use a suitable fine filler, for larger cracks and holes use a stronger more suitable filler (see manufacturer's instructions).

To check for any loose plaster, tap the wall around any suspect areas, remove any loose plaster and repair with a suitable plaster repair product (filler if the damaged area is not too big).

When filling try and leave a nice smooth finish, it is better to leave the filled area slightly proud of the surrounding area and then sand down with a fine sandpaper until flush.

Order of hanging

First we need to decide the best place to start hanging the wallpaper, patterned wallpaper is best hung starting at a window and working your way around the room away from the window (see **fig 1.1**).

To get your starting point measure the window recess and add 2cm, deduct this measurement from the roll width, and then measure out from the window the remainder, this will be your starting point (see **fig 1.2**).

An example
Let's say the window recess is 15cm (add 2cm for trimming) and the roll width is 60cm, that means we need to measure out from the window 43cm (60-17=43).

Use a pencil to mark your starting point, and then use either a spirit level or a chalk line to mark a vertical line to use as a guide.

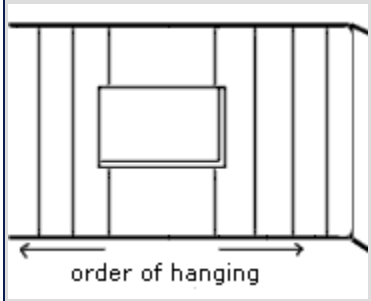


Fig 1.1

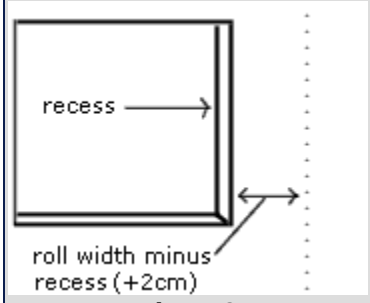


Fig 1.2

Prepare the lengths

Once you have your starting point you can work out how many drops it will take to reach the nearest corner, this is how many pieces of wallpaper we need to prepare ready for hanging.

When you know how many drops you need to reach the corner, the next step is to work out how long to cut the lengths. Free match wallpaper is just a case of measuring the drop and adding 10cm for trimming, other wallpapers may need a larger surplus in order to match the pattern correctly (see manufacturer's instructions).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

After working out how long to cut the lengths take your decorating scissors and cut as many lengths as you need (**always check that the pattern matches and you have 5cm at both top and bottom for trimming**).

note: Usually wallpaper paste takes about 15-20 minutes (see paste packet) until it is ready to use, if you mix it just before you start cutting the lengths it should be ready when you need it.

Pasting the wallpaper lengths

If you are using a pre-pasted wall covering then follow the manufacturer's instructions for preparation.

When your paste is ready position one of the lengths of wallpaper face down on your pasting table, take your pasting brush and apply the paste to the first length, starting at the bottom, work the paste evenly over the paper working from the middle to the edges (see **Fig 1.3**), gently fold the bottom over into a concertina (ensuring not to crease) this will make the paper easier to work with.

Allow the paper to soak for as long as instructed (see label) before hanging.

Fig 1.3

Hanging the first length

When the first length of wallpaper is ready for hanging hold it by the top and place it loosely up against the wall leaving about 5cm surplus at the top and align the edge with your vertical guideline.

Unfold the concertina and let the paper hang loosely while you check the positioning, when you are happy with the position work your way down from the top smoothing the paper onto the wall with your paper-hanging brush, ensuring to disperse any trapped air.

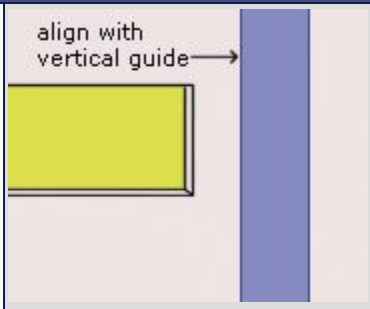


Fig 1.4

Trimming

When the length is in position and you have removed any trapped air run the back of your scissors into the crease between the wall and ceiling, gently pull the paper away from the wall enough to let you trim the surplus at the top using the crease as a guide, then smooth the paper back onto the wall with your paper-hanging brush.

To trim the bottom use the same technique as the top.

Hanging subsequent lengths

When the next length is ready for hanging hold it in the same way as before and place it loosely up against the wall, butt it up against the previous length and ensure the pattern is matched exactly.

When you are happy with the match and the position, again work your way down from the top smoothing the paper onto the wall with your paper-hanging brush, and brush out any trapped air.

Trim the top and bottom in the same way as the first length and then use your seam roller

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

(unless the wallpaper is embossed) to smooth the edges between the two lengths.

Papering into the corner

You should always trim the paper when you reach a corner and start a new run of lengths for each wall, this will stop the paper running at an angle due to unlevel walls.

To trim into the corner run the back of the scissors down the length to make a loose crease, then gently pull the paper away from the wall and trim the paper about 2 cms from the crease (to create a surplus of 2cm see **Fig 1.5**), then trim the top and bottom as before and then smooth the wallpaper back onto the surface with your paper-hanging brush.

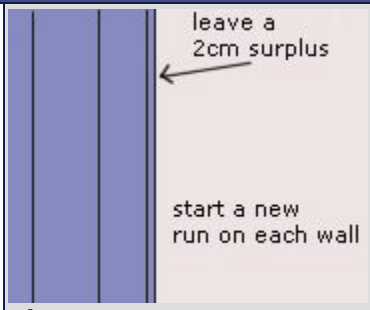


Fig 1.5

To paper into a door or window recess can be quite tricky but one of the easiest methods is described below with the aid of diagrams.

Papering into a door or window recess

If you take a look at **Fig 1.1** you can see that in our example we are coming into the recess from the left hand side, the same technique is used when coming from the opposite direction as well.

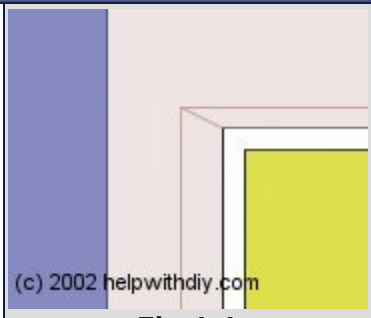


Fig 1.1

First take the next length (pasted and ready to hang) and butt it up against the previous drop, using a blunt pencil mark the wall down the right hand side of the paper (see **Fig 1.2**), this will be your guideline. Remove the length from the wall.

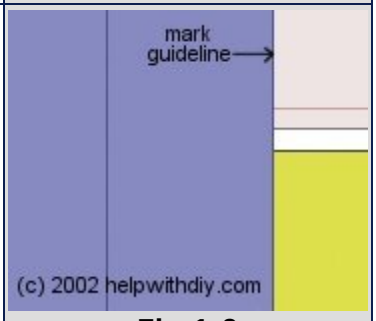


Fig 1.2

Now mark the inside of the recess, level with the guideline as shown in **Fig 1.3**.

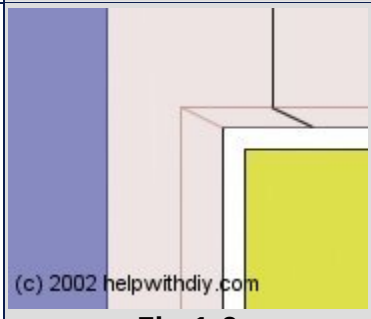
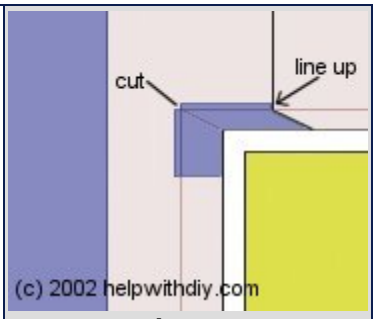
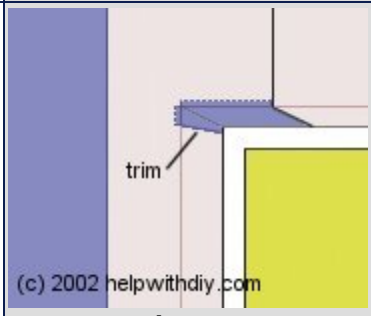
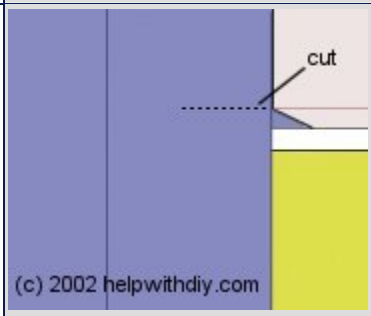
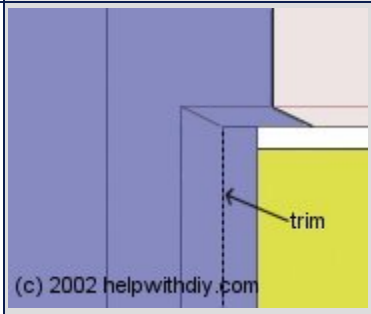
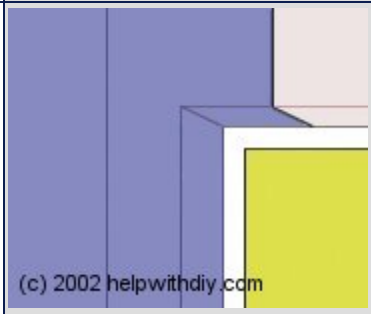


Fig 1.3

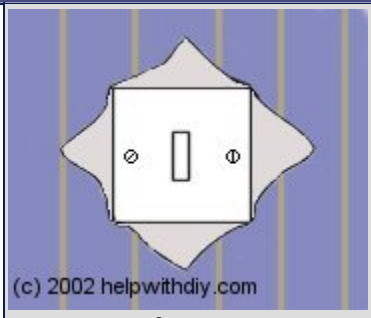
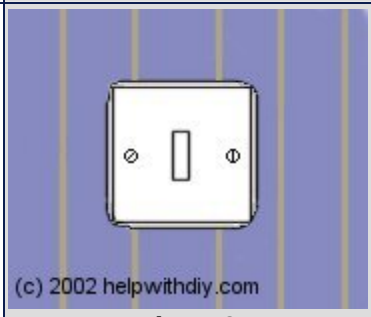
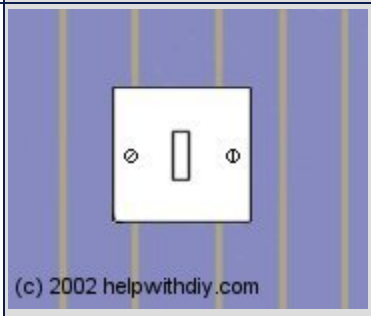
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Now measure the depth of the recess and cut a length of paper (full width) to this measurement adding 5cm, paste the paper and allow to soak. When the paper is ready to hang line it up with your guideline and smooth the paper into the recess, cut the paper at the corner as shown in **Fig 1.4** to allow it to sit into the corner of the recess, once in position smooth the paper using your paper hanging brush ensuring to get rid of any trapped air.	 **Fig 1.4**
Now trim the paper down on the left hand side allowing around 3cm as shown in **Fig 1.5**. Next give the overhanging pieces on the wall surface an uneven edge either by carefully tearing the paper or trimming with the scissors in a zig-zag motion (ensure to leave enough paper overlapping around 3cm), this will help disguise the overlap (again see **Fig 1.5**).	 **Fig 1.5**
Now get the length again and hang as before, when you are happy with the position cut along the top edge of the recess as shown in **Fig 1.6** (you may find it helpful to mark the back of the paper along the edge with a blunt pencil).	 **Fig 1.6**
Next fold the paper around the corner of the recess ensuring not to leave any air trapped, smooth into position using your paper hanging brush. run the back of your scissors down the edge (by the window frame) then gently pull the paper back to allow you to trim the excess see **Fig 1.7**.	 **Fig 1.7**
Finally smooth the entire length with your paper hanging brush ensuring to remove any trapped air, and wipe any paste off the window frame.	 **Fig 1.8**

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

This guide will take you through the process of trimming around a socket outlet or light switch. Always ensure the power is isolated before papering around an electrical point.

When working with light switches or sockets ensure the power is isolated at the main fuse box.

Trimming around a socket or light switch	
Papering around a socket or light switch can seem an awkward task, but it is actually fairly straight forward and can be done with a minimum of fuss. **Ensure the power is isolated at the main fuse box** When you hang the length where the socket/switch is located poke the scissors through the paper roughly in the middle of the socket/switch, then cut from the hole outwards to each corner of the socket/switch see **Fig 1.1**.	 **Fig 1.1**
Smooth the paper onto the wall and then trim the paper leaving it overlapping the socket/switch by about 1cm (see **Fig 1.2**, loosen the screws enough to push the paper behind the socket/switch.	 **Fig 1.2**
Finish the drop and then tighten the screws back up and you should be left with a perfect finish (**Fig 1.3**). Clean any paste off the socket/switch and allow the paper to dry before switching the power back on.	 **Fig 1.3**

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Heat guns

how heat guns work - *temperature settings* -*heat gun features* - *safety points*

Electric heat guns have now largely replaced the 'old fashion' paraffin and bottled gas blowlamps for stripping paint on timber. The paraffin and bottled gas blowlamps still have a place in the tool kit where electricity is not readily available but they have to be used with care to avoid scorching the wood, setting fire to the stripped paint or cracking the glass when working on a window frame

The hot air flow of a heat gun is less dangerous than a naked flame but it can still cause highly inflammable items to catch fire, crack glass and injury if directed onto skin. One great advantage is that the heat is almost instantaneous so the heat gun can be switched off during pauses in the work while the flame blowlamps have the inconvenience of needing to be relit if the flame is extinguished,

The electric heat guns now available are lightweight, easy-to-use tools which make it far less likely to scorch wood or crack glass when used correctly to strip paint.

How heat guns work

Heat guns look a lot like hair dryers - but, as many instructions thoughtfully point out, should never be used for drying hair! The method of operation of a hot air gun is similar to a hair dryer: a fan pulls air into the body of the tool and drives it across an electric heating element and out through a nozzle.

For stripping paint, the heated air is directed onto the painted surface, causing it to soften so that it can be easily stripped off - either by using a stripping knife or hook. For best results it is best to work up the surface with the heat gun above the stripping tool, softening the paint just before the stripping tool reaches it. The tool is used one-handed, with the other hand to hold the stripping tool.

Some heat guns can be used sitting on a bench so that two hands are free to use the hot air for other applications.

Temperature settings

Very basic heat guns have just one heat setting and one fan speed and are designed primarily for paint stripping. More complicated models have two or three heat settings or even fully variable adjustment with in a range, together with a choice of two, three or variable speeds of air flow.

The effective temperature of any heat gun can be reduced by holding it further away from the surface, but having variable settings gives more choice.

For paint stripping, the maximum speed and the maximum air flow is generally required - these settings are also needed for other jobs such as soldering plumbing joints and freeing rusty nuts. There are other uses of the heat gun where having lower air flows and/or lower temperatures can be useful. Other uses for the heat gun include:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- drying paint or varnish - 30 to 130 °C - care has to be taken as dust particles may be blown onto the paint/varnish.
- drying out damp wood (before filling or painting) - around 100 to 200°C.
- softening adhesive (such as when applying worktop edge trim or lifting floor tiles) - 300 to 400°C.
- bending plastic pipes - 200 to 300°C.
- heat-shrinking plastic film - 200 to 300°C.
- welding some plastics - 330 to 400°C.

A heat gun should always be used with care around copper plumbing where solder connectors have been used as the heat can melt the solder and weaken the joints.

Special nozzles are available for most models of heat gun for specific uses other than stripping paint.

Heat Gun features

As such a simple tool, there are not many differences between one model of heat gun and another - but there are some features which are important.

- Wattage - commonly from 1000W to 2000W (a measure of the power of the gun). Providing that there are heat and/or airflow controls, the higher the wattage, the better.
- Main control switch - usually mounted on the front of the pistol grip, and normally a 'dead man' switch so that power is switched off when the finger pressure is removed - an ideal safety feature as the heat gun stops if it is accidentally dropped.
- Temperature setting - at least 500°C is needed for stripping paint - the lower the bottom end of the range the more useful. A choice of controls make the tool more useful.
- Airflow setting - having variable or more than one speed makes the tool more versatile.
- Thermal cut out - this will switch off the tool if it becomes overheated. If this occurs, it indicates a fault in the tool or method of use - for safety, the fault must be identified and corrected before the heat gun is again used.
- Flex length - lengths of 2.5 to 3 m are normally fitted, this means that when using an extension lead, the tool can be used at the full reach without having the socket hanging in mid air.
- Hanging hook - useful for storing the tool.
- Surface stand - this enables the heat gun to be safety 'rested' during pauses in the work and after uses. It also allows the gun to be used 'hands-free' when two hands are required on the work piece (such as when bending a plastic pipe).
- Nozzles - most heat guns have a range of nozzles that can be fitted for specific uses, generally these need to be purchased separately. The main types of nozzles are:

1. Reducer nozzle - when you want to concentrate the heat onto a specific area.
2. Reflector nozzle - wraps round a plastic or copper pipe to spread the heat around the pipe surface.
3. Flat nozzle - for spreading the hot air over a wider narrower area.
4. Glass protector nozzle - for use when stripping paint on a window to keep the direct heat off the glass.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Safety with heat guns

Although safer than using a naked-flame blowlamp, care is still required when using a heat gun. Specific point are:

- Because of the power of these tools (up to 2000W), when an extension lead is necessary, only use a lead rated at 10 amp or greater and always completely unwind the lead.
- Never obstruct or cover the air inlet grills. If the air flow is reduced the heat gun will overheat and possible catch fire.
- Never operate the heat gun with the outlet nozzle hard up against a surface, this will reduce the air and can have the same effect as obstructing the air inlet grills,
- Do not use a heat gun near inflammable materials.
- Always switch the tool off before putting it down on any surface.
- Allow the tool to cool before storing it.
- Do not place the nozzle next to anything whilst it is hot.
- Never touch the hot metal nozzle with clothing or skin.
- Do not use for stripping lead-based paints.
- Do not allow any paint to stick to the nozzle - and if some paint does stick, allow the gun to cool down and remove the paint.
- Do not look down the nozzle while the gun is turned on.
- Do not insert anything down the nozzle with the gun.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

HOME SECURITY

SKILL LEVEL

No special skills are required, but some experience of electrical work would be an advantage when fitting a burglar alarm.

SAFETY FIRST

It is estimated that as many as 60% of burglaries are made by entry through unlocked windows and doors, so it makes sense to check that you have secured all your doors and windows before going to bed or leaving the house. An intruder alarm provides additional peace of mind and a simple smoke alarm gives advanced warning in the event of fire. All the equipment you need is available for you to fit yourself.

INTRODUCTION

Securing your home against burglary is more about common sense than making your house into a fortress.

It is estimated that as many as 60% of burglaries are made by entry through unlocked windows and doors, so it makes sense to check that you have secured all your doors and windows before going to bed or leaving the house.

An intruder alarm provides additional peace of mind and a simple smoke alarm gives advanced warning in the event of fire. All the equipment you need is available for you to fit yourself.

2 - Basic security

Contact your local Crime Prevention Officer at the nearest police station for advice on how to protect your home from intruders.

Most burglars are opportunists looking for lapses in home security but there are measures that can be taken to improve home security and make life difficult for even the more resourceful intruder:

- Always fit the best-quality security devices you can afford. Choose fittings that carry a British Standard Kitemark as recommended by the police and insurance companies.
- Always remove the key from a lock and place it out of sight and reach of an intruder.
- Leave a light on and the radio playing when you go out for the evening.
- Buy one or two time switches and set them to operate some lights when you are away on holiday. Remember to cancel regular deliveries such as newspapers and milk. It is a good idea to inform your neighbours and the police that you are away.
- Make an invisible identification mark such as your name and postcode on your valuables using a

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

special property-marking pen.

- Do not rely on ordinary window catches to keep intruders out - really determined burglars will simply break the glass and slip the catch.

Special key-operated locks are available to fit most types of window, from traditional sliding sashes and casements to modern metal-framed windows and patio doors. Keep keys out of reach of the window but where you can reach them in an emergency.

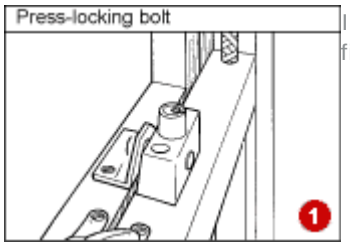
If you are going away,

1. Leave a key with a trusted neighbour who will check your house regularly and ask him or her to collect the post and free newspapers.
2. Upgrade your windows by fitting locks particularly to ground-floor and basement windows, and to others that can be reached easily without the aid of a ladder.

3 - Windows - Sliding sash windows

Wooden sliding sash windows are often secured with a cam or fitch fastener placed at the centre of the sash meeting rails. These look attractive and are reasonably efficient but a burglar can unlock them with nothing more than a strong knife, so when choosing locks, look for those that have a removable key.

Press-locking bolt

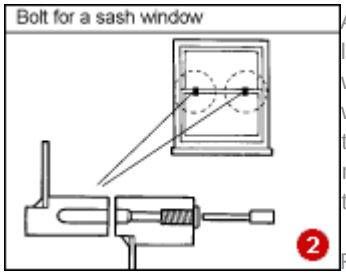


Improve your security by fitting a press-locking bolt.

1. Fit the keeper to the outer sash frame and the lock body to the inner meeting rail. Fit a single lock close to the centre of a small window and fit a pair of locks to a wider one.
2. Having screwed the keeper in place extend the bolt so that you can use it to position the lock body accurately. Turning a key releases the lock.

Window bolt

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



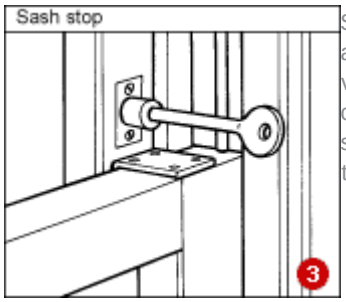
As an alternative to a press locking bolt fit a discreet window bolt to secure a sash window. This is a thin bolt that passes through both meeting rails, preventing them from sliding apart.

Fit one or two, depending on the width of the window.

1. With the window closed drill a hole for each bolt through the inner meeting rail into the outer rail. Mark the drill with tape to establish the depth of the hole.
2. Open the window and tap the metal liners (supplied with the bolt) into the holes until they are flush.
3. Close the window and insert the threaded bolt using the special key provided. Unscrew and withdraw the bolt to open the window.

Keep keys out of reach of the window but where you can reach them in an emergency.

Sash stops

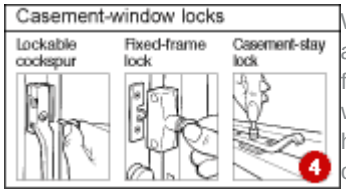


Sash stops allow you to open a window partially for ventilation without compromising security. Fit a sash stop on both sides of the window.

1. Drill a hole in the upper sash frame about 75mm (3in) above the meeting rail.
2. Cut a recess and screw the fitting in place.

To open the window fully push back the bolt with the key.

4 - Windows - Wooden casement windows



Wooden casement windows are hinged down one side and fastened to the fixed frame with a lever or cockspur handle. A casement stay is often used to hold the window in the open position.

A number of simple devices are available for securing casements:

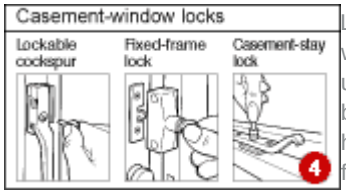
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Fitting instructions are usually supplied with window locks and bolts - as each lock differs in detail, it pays to read the manufacturer's recommendations before you start work.

- Replace old cockspur handles with new lockable ones - these are made for left or right-hand opening.
- If you want to retain your original cockspur handles screw a lock (or a pair of locks) to the fixed frame. A keeper plate, screwed to the casement, latches automatically when you close the window and is released with a key.
- Secure the casement stay with a simple key-operated lock. A threaded stud, which can be used to replace the original stay peg, passes through a hole in the stay arm. Screwing a locknut onto the stud prevents the stay from moving.

Keep keys out of reach of the window but where you can reach them in an emergency.

5 - Windows - Metal casement windows



Locks for metal-framed windows are similar to those used for wooden casements, but you will have to drill pilot holes in the metal for the fixing screws.

Fitting instructions are usually supplied with window locks and bolts - as each lock differs in detail it pays to read the manufacturer's recommendations before you start work.

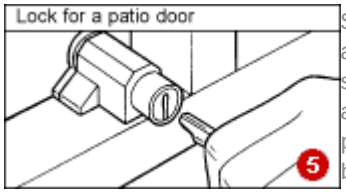
- Replace old cockspur handles with new lockable ones - these are made for left or right-hand opening.
- If you want to retain your original cockspur handles, screw a lock (or a pair of locks) to the fixed frame. A keeper plate screwed to the casement, latches automatically when you close the window and is released with a key.
- Secure the casement stay with a simple key-operated lock. A threaded stud, which can be used to replace the original stay peg, passes through a hole in the stay arm. Screwing a locknut onto the stud prevents the stay from moving.

Keep keys out of reach of the window but where you can reach them in an emergency.

6 - Patio doors

Patio doors are, in effect, large horizontally-sliding windows.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Special key-operated locks are available to improve security. Fit one at the top and one at the bottom to prevent the glazed frames being lifted from their tracks.

Fitting instructions are usually supplied with window locks and bolts - as each lock differs in detail it pays to read the manufacturer's recommendations before you start work.

Keep keys out of reach of the window but where you can reach them in an emergency.

7 - Fitting burglar alarms

Your first line of defence against burglary should always be strong locks on all vulnerable entry points to your home. However, an alarm siren or bell prominently displayed on an outside wall will deter the majority of burglars.

There are basically two types of intruder alarm: passive systems and perimeter systems, but some alarm kits are a combination of both.

If you are not sure what type of alarm system would best suit your home ask your local Crime Prevention Officer for advice.

Many people prefer to have an alarm installed by a professional but there are numerous alarm packages designed for self-installation.

Hard-wired systems

Hard-wired systems incorporate individual sensors that monitor all points of entry:

- vibration sensors are fixed to glass;
- contact breakers are fitted to door and window frames;
- pressure pads are placed on stair treads and floor mats.

Passive sensors that detect the presence of an intruder may also be included. Each sensor is connected by bell wire to a central control unit that is wired into the mains.

The wire runs are fairly unobtrusive but it is best to conceal

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

them when possible. Run wires under the floor or tuck them beneath the edges of fitted carpets.

Wire-free systems

Wire-free alarm systems are particularly easy to install and avoid having to deal with unsightly wire runs.

When the alarm system is activated passive detectors will sense the presence of an intruder and transmit a radio signal to a central control unit that, in turn, triggers the siren or bell. You can have as many detectors as you like and each one is set with the same simple code that will be recognised by your control unit.

Ensure any alarm switches off automatically after 20 minutes, as there are penalties for causing a nuisance.

Wire-free systems invariably include a magnetic-contact transmitter which protects the main entry/exit point of the house. This transmitter will activate the control unit and sound the alarm when the contacts are separated. A delay can be set to allow you plenty of time to deactivate the alarm when you come home.

Other accessories include a personal alarm or 'panic button' which is usually screwed to the front door. The system can be controlled with a small remote-control transmitter. This device doubles as a personal alarm up to several metres from your home.

Wire-free systems can be dismantled easily so that you can take your alarm with you when you move home.

8 - Smoke detectors

A smoke alarm is an early-warning device designed to sense the presence of smoke and fumes before a serious fire develops. Mains-powered detectors incorporate a battery as a back-up.

It is possible to connect up to twelve detectors with two-core bell wire. When one detector senses smoke all the detectors sound the alarm.

Most householders opt for self-contained battery-powered detectors that are very easy to install. This type of detector has a test button to check that the battery is still working and will even emit an intermittent alarm to indicate that the battery is running low. Some also incorporate a high-output escape light that is activated with the alarm to illuminate the area.

Make sure a smoke detector conforms to BS5446 Part 1, and carries the British Standard Kitemark.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

You should install a smoke detector where it will give you the earliest possible warning of fire, but preferably not directly over a heater or air conditioning vent, nor in bathrooms or kitchens where it could be triggered by steam. However, some detectors have a built-in 'pause facility' which allows you to silence the alarm for a few minutes should it be accidentally activated.

Screw a smoke detector to the ceiling at least 300mm (1ft) away from the walls and light fittings. If it is more convenient to mount the detector on a wall, it must be at least 150mm (6in) but not more than 300mm (1ft) below the ceiling.

- In a bungalow fit a detector to the ceiling of your hallway, halfway between your bedroom and the living areas where a fire is most likely to break out.
- In a two-storey home fit one detector in the hallway just above the foot of the stairs, and a second detector on the upstairs landing.

Most smoke detectors are powered by nine volt batteries. Test your alarm occasionally to check it is working and change the battery at least once a year or when the low-battery warning sounds.

9 - Fire blankets/extinguishers

Install a fire extinguisher and fire blanket in the kitchen where most fires start. Choose a general-purpose extinguisher that complies with BS5423.

Domestic extinguishers are designed to tackle small fires only and should not be used to extinguish a chip-pan fire.

If the fire gets out of control call the fire brigade immediately.

Fire extinguishers come with a wall-mounting bracket that is attached with screws. Position the extinguisher in a prominent position and close to a door that will provide a safe escape route. Have fire extinguishers checked and serviced regularly.

Chip-pan fires are common and easily get out of hand. Turn off the heat source and use a fire blanket to smother the fire. Do not try to move the pan, carry it outside, or

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

extinguish the fire with water.

Check that a fire blanket meets BS6575 standards and mount the blanket dispenser next to your fire extinguisher.

Take the fire blanket from its dispenser and drape it over the pan to deprive the fire of oxygen.

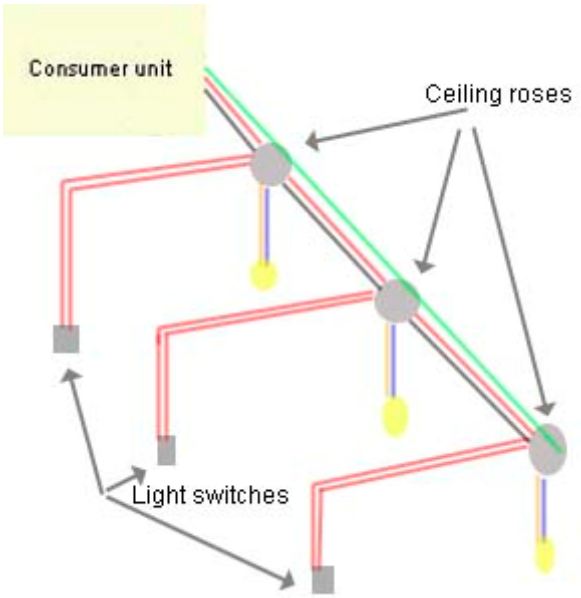
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

HOW A LIGHTING CIRCUIT WORKS

Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

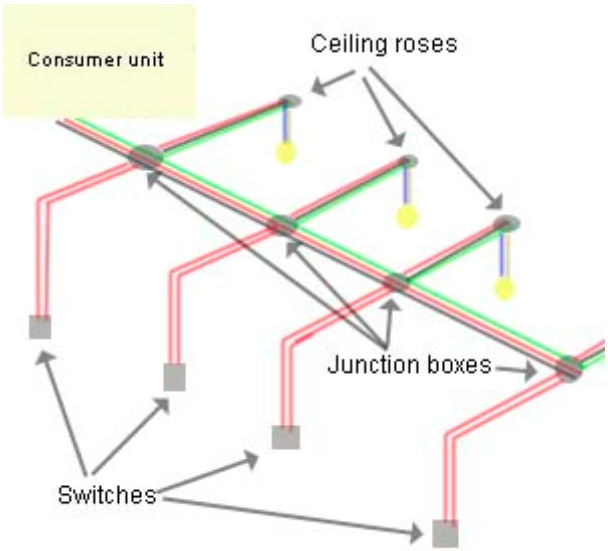
To understand fully how a lighting circuit works you need to understand about the principle of switching. This can be seen in our **lights and switches project**. Light switches, sockets, cables and tools can be bought by clicking on any of the images.

There are two types of popular lighting circuit. The first one, shown below, takes power from the **consumer unit** to the first ceiling rose. It is then taken from the ceiling rose, through the switch and back to the ceiling rose where it then carries on to the next ceiling rose. This carries on until it is looped all round the house and is called the loop circuit or system. You can understand more about the ceiling rose and switch connections in our **lights and switches project**.



The second system in popular use is the **junction box** circuit or system. Power is taken from the consumer unit to the first junction box. The live is interrupted by the switch wiring and the circuit is carried on to the next junction box. A cable is run from the junction box to the light, usually via a ceiling rose.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Usually 1mm sq. cable will be used for lighting. A lighting circuit can serve up to 12 x 100W bulbs. Using 1mm cable is allowed for up to 95meters of circuit length. This does not include the switches which should be wired in switch wire which contains 2 red cores. If you have longer lengths to cover, 1.5mm squared cable can be used and the maximum length allowed using this is 110m.

To avoid the house being in total darkness if a fuse should blow or trip, lighting circuits are split into upstairs and downstairs. If a cartridge fuse is used it should be rated at 5amps, if an MCB is used it should be rated at 6amps.

Please also check the rules very carefully for ring mains and radial circuits. You are limited in the length of cable you are allowed to use in both circuits and long spurs could make you exceed the limit. If this is the case you are asking the circuit to use much more energy than the circuit is designed for. More energy = more heat and cables can catch fire. Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

How to avoid the cowboy builder

Most people tend to expect others to be honest with them, they want to 'believe' what other person say. Unfortunately, there are some people who can lie very well and promise the earth without any intention or the ability to deliver. These people are not all builder (and all builders are not these sorts of people) but building work can be expensive and stressful at the best of times and you need to select the right builder to work for you. It is not only the dishonest cowboys you want to avoid, some very honest and genuine tradesman are just not upto the job.

These guidelines are aimed at making you think before you choose a builder so that you will minimise the risk of hiring a cowboy or someone without the required skills.

Most of these guidelines can also be applied to other tradesman or organisation you are thinking of hiring for any work.

Most cowboys in any line of trade, present an image of confidence and friendliness, this can make it very hard to question their abilities and promises - but remember, it is your money that they intend to live on, so stand up for your rights - they are not doing you a personal favour if you are paying them to do the work.

Any reputable tradesman will recognise the relationship with the employer and be willing to provide evidence that they can do the work to the desired standard.

---

1. Product a 'works specification'. This need be no more than some notes you have written down just listing what you need to have done, if it is a big job you may already have the plans, so the 'work specification' will already be defined. Make sure you specify who is going to be responsible for removing any rubbish and 'making good' after the work.
2. If you are using the services of an architect, the architect may be able to recommend a builder, but you do not need to use his recommendation. In fact it is sometimes better to arrange your own builder so that there is no possible conflict of interest between you, the architect and the builder.
   You may wish to leave the entire job in the hands of your architect; in which case, you can apply the following to your dealings with your architect.
3. Ask people you trust (family, friends, neighbours etc.) if they can recommend a builder. If they have had work done by the builder, make sure it is of a similar type to what you need (someone who can lay a good garden path, may not be the right person to build a double storey extension). Do not stop with the first recommendation, try to get 2 or 3 names.
4. Ask for a number of quotations (preferable 3 - most mortgage companies require 3 quotations if they are funding the work). Give each builder a copy of your 'works specification' and make sure that each one visits the site.
5. Ask each builder for 2 or 3 recent references (i.e. similar types of work they have carried out).
   Follow up the references, try and visit the work without the builder and discuss how the work went with the owners - be careful when drawing your conclusions as it is not unknown for references to actually be friends or family of the builders !
   If a builder was recommended by a friend or family, ask them how they think the job went and how happy they were with the actual conduct of the builders and the finished product.
6. Having met each builder and received the quotes, you may be able make a first assessment.
   You may feel uncomfortable with the manner of a builder - it does not mean that they are not good builders but will you be able to work with them? And just because

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

another builder is friendly, does not mean they will do a good job. Try to keep personal feelings out of the decision.

7. Make sure that all the quotes reflect the same work specification including site clearance, material supply etc.
   If one of the quotes is widely different (either higher or lower) from the other two, try to find out why. It may not reflect the standard of workmanship, a builder with little work may put in a low quote just to keep working while a busy builder who does not really need the work may put in a high quote.
8. Ask for details of the required payments. For all but small jobs, the builder may ask for payments at specific stages of the work. The payments should reflect the amount of work already completed.
   If the builders require any money before they arrive on site, think very hard before handing it over - advance payments may be required where custom made materials need to be purchased.
9. Some small reputable builders offer a 'labour only' service, this requires you to 'fund' the materials as the job progresses. The builders should be able to obtain trade prices for you and will be able to give you a separate quote for the materials so that you will be able to see the total cost at the outset.
   This method of trading can be legitimate in the UK as it enables the builders to keep their annual turnover below the VAT threshold so they do not need to register or charge for VAT.
   A potential drawback is that you have to fund the materials yourself as you go along (the builder normally arranges to buy them in your name); if there has been an underestimate in materials cost, you may find the cost escalating. On the other hand, you may save money if they find they have overestimated. You are unlikely to be left with any surplus material delivered.
10. If the job is a big one, ask what guarantees are offered. If it is a new house, you will need NHBC (in UK) or similar warranty cover.
    Ask the builders about public liability insurance, they should have cover to protect you and the general public in the event of an accident.
11. Do not be hurried into a decision, a reputable builder will always be willing to take time to discuss what you want.
    You may find yourself in a dilemma if a builder sets a deadline for an answer. Sometimes builders have a slack period between finishing one job and moving onto another in a couple of months time, they may legitimately offer to do yours now if you give the go ahead immediately. You may prefer to suggest moving your time-scales so that they can do their next job before coming back to you - but this may entail an increase to the quoted price because of expected inflation etc.
12. So having met the builders, seen their work and received the quotes; how do you make the choice?
    The 3 main factors (probably in order of importance) are:
    1. Quality of workmanship.
    2. Cost and time-scales.
    3. The behaviour of the builders.

    You have to weigh each factor individually and relative to the other two. You may feel that a particular builder is automatically excluded because of your assessment of any factor. All other factors being equal, the final decision may be based on the cost or time-scale - remember that you do not always get a better job by paying more money. You may find that you are unhappy with all the builders you have asked to quote - remember that you do not need to use any of the builders you have asked to quote; you can start all over again by asking other builders for references and quotes.

13. When you have decided on a builder, draw up a written agreement specifying:
    - The work to be carried out.
    - When the work is to commence and be completed.
    - The cost of the work and when/how it is to be paid. If the job is being funded by a loan which will be released to you at fixed stages of the work, make sure that the builder understands this and the actual points at which funds will be released.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Try to include a 'retention'; part of the price which will be paid (say) 1 month after completion of the work subject to satisfaction. This will allow you to uncover small 'defects' in the work after the builders have left the site and gives the builder an incentive to fix them quickly.
- Any 'local agreements' - such as use of washing/toilet facilities, disposal of waste etc.

14. When the work has started, you will need to 'work' with the builder. Record the progress of the work, keep a note of all instructions you give the builder and payments you make. You should feel free to ask the builders what they are doing - any two people may interpret a work specification in different ways; so make sure that they are doing what you want.
15. Any extension or other major job will cause tension and stress as it usually affects your home and it is unlikely to progress to plan. Remember:
    - Any building work around the house will cause a certain amount of inconvenience to the occupiers, you have to accept it.
    - Do not just ask the builders to do small addition items of work, you could find them on the final bill. If you need to change your work specification, make sure that it is agreed in writing along with any cost/time implication.
    - If you have a problem with a particular workman - his behaviour, workmanship or attitude - tread carefully! If you cannot suppress your feelings, try to have a quiet word with the site foreman or boss.
    - If you agreed stage payments, pay them on time (providing that the work has be done). If a dispute arises, talk to the builder and try to reach a compromise.
    - If you have problems with your loan provider, keep the builder informed.
    - Maintain an 'overall' view of the job, do not focus on one or two elements. If the builder is 'ahead' on parts of the job, this can compensate for an area which is running behind schedule.
    - No matter how well planned a job may be, they can never take account of the unforeseen (illness, weather, uncovering a mine shaft etc.), so make allowances for any such factors which the builder encounters.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Introduction

Few home improvements can match a wood deck for usefulness, beauty and enhanced value to a home. For adults, decks offer outdoor living space for entertaining, sun bathing and dining. For children, they provide an excellent outdoor play area.

But the best news about a deck is that it is an ideal home improvement construction project for the average handyman or woman. Design is straightforward. No advanced carpentry skills or sophisticated tools are needed. If you can hammer a nail, saw on a straight line, and read a level, then building a deck should present no major problems.

What's more, the use of pressure-treated lumber helps assure that your project will be virtually maintenance-free and will provide enjoyment for decades to come. You won't even have to paint or stain the wood, unless you want to. Left unfinished, it weathers to a rustic gray. It is a good idea to seal the deck periodically to prevent the wood from checking, however.

There's enough information in this article to help you design and build an attractive wood deck.

Tools

Building a deck is easier and usually better done when proper tools are used. Certain property and construction conditions may necessitate special tools, but the following list will suffice for most deck projects:

- circular saw
- power drill
- tape measure
- hammer
- chalk line
- level
- combination square
- framing square
- hand saw

For safety,the following are recommended:

- gloves

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- goggles
- dust mask

Preliminary Planning

The location and design of your deck should be influenced by several factors:

- *Anticipated use (private sunbathing, large parties, family relaxation, outdoor cooking)
- *Air currents (allow flow of gentle breezes, block out prevailing winds)
- *Existing structure (should be compatible)
- *Sunlight (desire sun or shade)
- *Privacy (screen certain areas, avoid street noise, landscaping)
- *View (emphasizes a good view, mask a poor one)
- *Safety (children or grandchildren, senior citizens)
- *Access to home (adjoin kitchen, living room or bedroom)
- *Terrain (elevated deck, ground level, split level)
- *Other personal needs and preferences

Decks originally gained popularity as a way of adding outdoor living space on hillside lots. However, many decks today are built on level ground where they offer firm, dry footing close to the home.

Decks can be built just inches high or elevated will above the ground. They may be freestanding or attached to the home or other building. They can even be built in a second-story above a garage, carport, or other roofed structure.

It's important; of course, to make certain the deck does not seal access to any utility or drainage lines. If you aren't sure of the location or depth of buried electric, telephone, gas, water or sewer lines, it's a good idea to ask your utilities.

Keep in mind how you intend to use your deck. Will it accommodate benches, lounge chairs, perhaps a table for outdoor dining? How many people will be using the deck at any given time? These are elements which must be considered in planning for proper size and design.

Once you have decided on the basic size, shape and location of your deck, check local building codes. You may find that there are restrictions as to height and size within your sub-division or community. A construction permit will probably be needed, but don't apply for one until you've finalized your planning.

Don't order any lumber or start work until you're sure that your plans meet local requirements. The information provided here should meet any local codes, but you will need to check to see if there are any particular requirements in your town.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Construction tips

Here are some additional suggestions that may help you in building your deck.

- Always nail a thinner member to a thicker member.
- Drive nails at a slight angle toward each other for greater holding power.
- When toenailing, stagger opposing nails so they pass each other.
- Nails and other hardware should be hot-dipped zinc-coated (galvanized) or equally well-protected material. Otherwise, weather may cause them to rust, leaving streaks on your deck.
- For maximum holding power, use ring- or spiral-shank nails. They can help reduce warping of lumber.
- To reduce splitting, when nailing close the the edge of a board, drill a pilot hole about three quarters the diameter of the nail. For dense or brittle wood, blunt the points by striking them carefully with a hammer. Blunt nails cut through; sharp ones pry apart.
- Place nails no close to the edge than about half the board thickness and no closer to the end than the thickness of the board. When nailing closer to the edge, pre-drill holes.
- Use 16d nails on nominal two-inch decking. Use two at each joint with 2 x 4's laid flat; use three for 2 x 6's laid flat.
- Mill ends may not be square. Resquare and trim the ends. Take this step into consideration when figuring lengths and finished deck size. IT is a good idea to leave all the deck boards slightly longer than the finished size and cut them all to the final dimension after they are all nailed down.
- With lag screws, use flat washer under head.
- Use washers under nut and head of machine bolts and just under nut of carriage bolts.
- Wear gloves to help avoid splinters.
- Tops of upright structurals and joist ends should be beveled to a 30 to 45 degree angle for drainage to minimize moisture (see fig. 18, page 11). While pressure-treated wood resists end rot, it remains subject to splitting, checking and chipping caused by moisture-induced swelling and subsequent shrinkage, therefore sealing the deck is a good idea to protect the surface.
- When staining wood, follow the manufacturers' instructions. Wood should be dry for best results.
- Remember, you are about to do finish work, not rough framing. The results will be visible for years to come. There is no substitute for good construction techniques and workmanship. (This is not intended to scare you, just remind you.)

DESIGN

Decks consist of six parts: footings, posts, beams, joists, decking and railing. In planning for these you have three basic considerations: function, structural stability, and appearance.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The aesthetics of your deck will probably be most noticeable in your choice of railing and decking, but the location of posts and beams can have a major effect on the appearance of a raised deck.

In almost every instance, your choice lies between several small pieces of lumber or comparatively fewer large ones. A railing, for example, may be held by 2 x 4 posts spaced every 16 inches or less, or it may have 4 x 4 posts capped by a 2 x 6 spaced as far apart as eight feet. (Note: a 2 x 4 isn't always 2" x 4". Actual size of finished dry lumber is typically 1/2 inch smaller than the nomimal size.

Your best guide at this stage is to look at various deck plans and inspect decks completed by friends and neighbors to help decide what you like best.

Choosing decking lumber presents similar alternatives. A popular choice is 2-inch thick lumber in widths of 4 or 6 inches. These can be alternated to make more interesting patterns. There is also 5/4 decking, which has rounded (bullnosed) edges to give the deck boards a more finished, softer look.

Develop your own design using the tables and information that follow. Clicking on the table reference will bring you to the table page. There will be an easy return link back to here on the table page. Take a look at the Tables 1 through 5. The figures given are for maximum spans using pressure-treated wood. Inferior grade wood will not safely span the distances in these tables. More on how to use the tables will follow below.

The design and construction information presented here is for normal usage. If special loading conditions are anticipated or unusual circumstances exist, consult a competent designer.

SUPPORTING A DECK

Elevated decks have generally been supported by 4x4 and 6x6 solid timber posts. Under a properly designed deck, these can provide very satisfactory support. Deck posts support the deck above, they are its foundation. The first consideration, then, should be the ability of a post to support the structure and the people on it.

ACCESSORIES AND CONNECTORS

Some of the special connectors and accessories that you should be familiar with are:

- Lag screws
- Expansion bolt (for bolting into the cement foundation, if necessary)
- Carriage bolt
- spiral nails
- ring shank nails
- joist hangers
- post fasteners (to fasten a wooden post to a cement footer)

Make sure all connectors, nails, screws, bolts and related hardware are hot-dipped zinc-coated or otherwise rustproof. Remember, pressurized wood will remain in

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

serviceable condition long after ordinary nails and connectors have been weakened by corrosion. Rust will also cause unsightly stains. The same conditions that cause untreated wood to rot also cause metal to rust.

USE THESE TABLES TO HELP PLAN YOUR DECK

Let's say that your deck will extend eight feet from the house and be 14 ft. long. If it is to be just above ground level, there's little need for a railing. However, higher decks call for a sturdy railing.

Table 1 shows the appropriate beam size. For example, the distance between the house and the beam is 8 ft. Using (2)2x12's as your beam members allows a span of 7 ft. between posts, a convenient figure for a deck 14 ft. long. A beam can be built up from two small pieces either nailed together or placed a few inches apart on either side of a post. Be sure you have a post under any joints in your beams.

To calculate the size post needed, multiply the beam spacing (eight ft.) by the post spacing (7 ft.). This gives you the load area-56 square feet. Table 2 shows that for a load area less than 72 sq. ft. and a post height under 6 ft, a 4 x 4 post is adequate.

Decking in this example will be a 2 x 6 boards, laid flat. Table 3 shows the safe spans for the decking.

Now refer to Table 4. As in our example, your joists must span the 8 ft. between the house and the outer beam. That can be achieved with 2 x 8 joists spaced 24 inches apart. To avoid any springiness in your deck, however, you should design with joists 16 inches apart.

If a railing is desired, refer to Table 5 to determine proper post sizes and spacing requirements. Be sure to check your local code here since the space between balusters is usually specified to be sure the small heads of children can not get stuck between them.

Estimating

After deciding the type, shape and size of deck you'll build, the next step is to estimate the materials you'll need. If you use a ready-made design, and the materials list is provided, this work is already done for you. But if you design your own deck, or use a variation from a standard plan, you'll have to estimate material requirements. In estimating, it's better to overestimate since you can always use any excess material in other projects, such as benches or planter boxes. There is nothing worse than running out of material and dashing off to the lumber yard before they close (hopefully) right in the middle of the project. (On the other hand, you may just looking for a break!)

First, draw a simple sketch of the deck; decking, rails, footings, posts and beams. Sketch the deck to scale, perhaps ¼" per foot. To save money, stick to standard lumber sizes and lengths to the fullest extent possible. For example, deck boards are usually stocked 2 x 4, 2,x 6, or 5/4 x 6 inch and 8, 10, 12,14 and 16 foot lengths. I usually keep a sale flier from the lumber yard handy to be sure I know what sizes of

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

lumber stock. For the decking, calculate using actual dimensions (5 ½ for a 6 in boards) and don't allow for spacing between boards. (More on that later, but I recommend little or no gap between the boards).

We present the second part of this article with step by step instructions in [How To Build A Deck Part 2](#).

Table 1 Minimum Beam Sizes

Length of Span ↓ ft	Spacing between posts (ft) 4	5	6	7	8	9	10
6	(2) 2x8s	(2) 2x8s	(2) 2x8s	(2) 2x10s	(2) 2x10s	(2) 2x10s	(2) 2x12s
7	(2) 2x10s	(2) 2x10s	(2) 2x10s	(2) 2x10s	(2) 2x10s	(2) 2x12s	(2) 2x12s
8	(2) 2x10s	(2) 2x10s	(2) 2x10s	(2) 2x12s	(2) 2x12s	(2) 2x12s	(3) 2x12s
9	(2) 2x10s	(2) 2x10s	(2) 2x12s	(2) 2x12s	(2) 2x12s	(3) 2x12s	*
10	(2) 2x10s	(2) 2x12s	(2) 2x12s	(3) 2x12s	(3) 2x12s	*	*
11	(2) 2x12s	(2) 2x12s	(3) 2x12s	(3) 2x12s	*	*	*
12	(2) 2x12s	(3) 2x12s	(3) 2x12s	(3) 2x12s	*	*	*

* Beams Larger than 2x12 recommended

Return to How to build a deck

Table 2 Minimum Post sizes

Height post spacing (ft)	**Load Area (sq. ft)= beam spacing x 48**	**72**	**96**
up to 6	4x4	4x4	6x6
up to 8	6x6	6x6	6x6

Vertical loads figured as concentric along axis.
No Lateral loads considered

Table 3 Recommended Spans for spaced deck boards

Spans in Inches Laid Flat				**Laid on Edge**
5/4x4	5/4x6	2x4	2x6	2x4
16	16/24**	16	16/24**	48

**Although 24 inches is a safe span, undesirable deflection or springiness may occurr.

Return to How to build a deck

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Table 4 Maximum allowable

spans for deck joists		
Joist size (inches)	**Joist 16**	**spacing 24**
2x6	9'-9"	7'-11"
2x8	12'-10"	10'-6"
2x10	16'-5"	13'-4"

Table 5 Railings

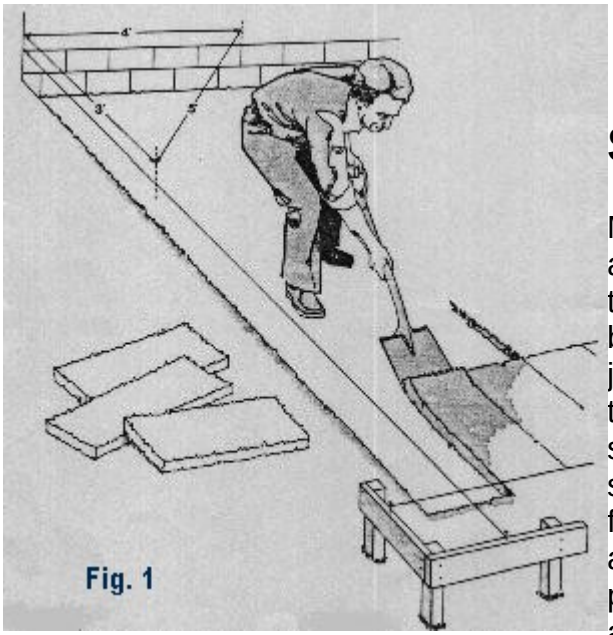
Distance between posts	**Post size (inches)**	**Cap size (inches)**
2' to 3'	2x4	2x4
3' to 4'	2x4, 4x4	2x4, 2x6
4' to 6'	2x6, 4x4	2x6

Side rails can be nominal 1" or 2" lumber of varying widths

Tables are based on lumber with 1200 psi bearing stress rating and a live load of 40 psf.

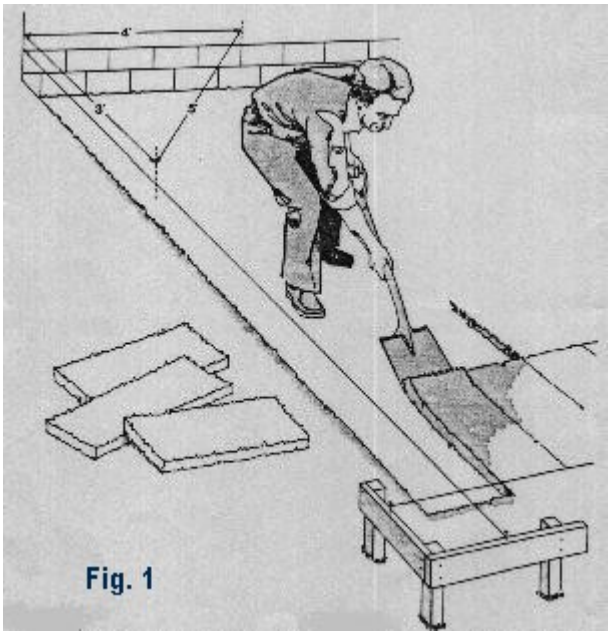
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

STEP-BY STEP METHOD OF DECK CONSTRUCTION



Step 1

Mark off the deck area using string and "batterboards" making sure that it is square. Batterboards are boards hammered in to the ground just outside the corners of where the deck will be. See Fig 1. The string will help you visualize the size and appearance of the finished deck and will also serve as a guide for excavation and post placement. But trust me, it will always look smaller this way than when it is done.

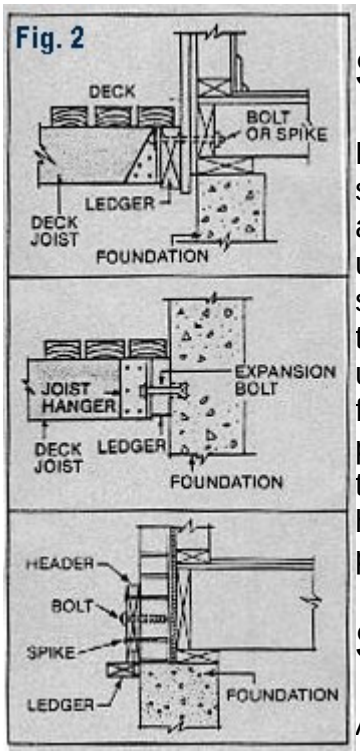


SQUARING WITH STRING

1. Attach string to house and/or batterboards to make sure its level.
2. Use a felt tip marker to mark the string 3' from the corner in one direction and 4' from the corner in other direction.
3. When the diagonal connecting these 2 points is 5', you have a right triangle and the angle at the corner will be 90°.

Note: To obtain the 5' measurement, move the string attached to batter board to the left or right until correct.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Step 2

Prepare the site. With a spade or sod cutter, remove sod to a depth of 2 or 3 ". Uncover an area approximately 2 ft. larger than the planned deck. It's unlikely that grass would be able to grow in the shadow of your deck, so you might as well transfer the sod to a bare spot in your yard where it would be useful. To prevent weeds and unwanted vegetation from growing up through the deck, spread a sheet of polyethylene film over the area. You'll have to slit this to embed posts in the ground. After the posts have been installed, cover the sheet with gravel, pebbles or wood chips.

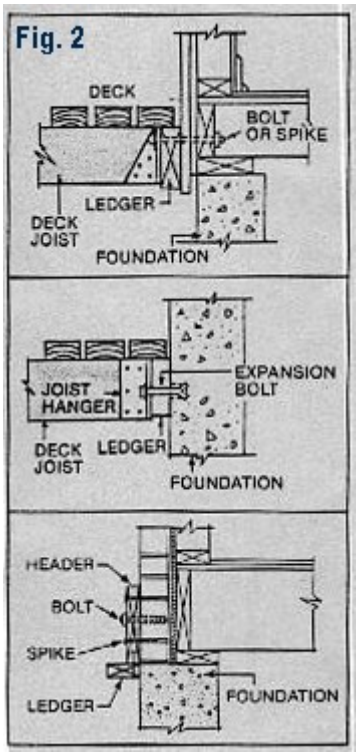
Step 3

A ledger/header board is the next step if you are attaching your deck to an existing structure.

The placement of the ledger/header determines the level of the deck floor, so be sure it is positioned at the correct height and is horizontal.

When fastening ledger/header boards to wood, the ledger should be held securely with bolts through the wall or lag screws. Use aluminum flashing to keep water from getting behind your ledger board. This should tuck up under your siding and bend down over the ledger, then down the face of the ledger board. Where aluminum or vinyl siding is in place, carefully cut siding away from house so that ledger/header board can be secured directly to the house. You may be able to use the bottom edge pieces of the siding above the deck to refinsh the lower edge, so save these if possible. See figure 2. I will assume the joists are hung from the ledger and not resting on it, but be sure you account for the height of your deck boards when figuring the placement of the ledger. (Typically just 1 ½ inches down from the final height of the deck.)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

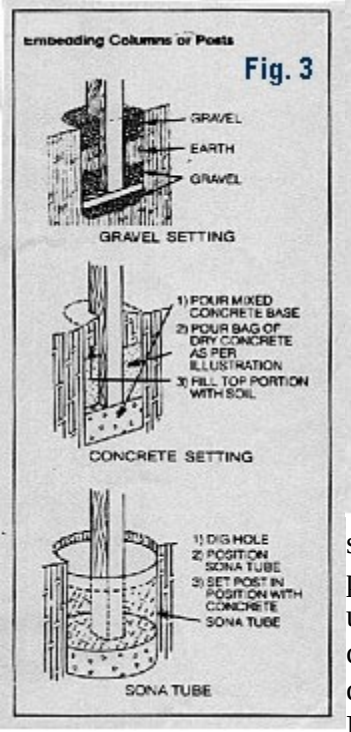


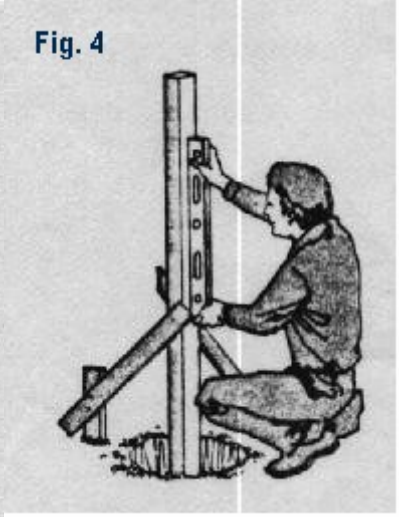
Step 4

Locate and dig holes for footings. In normal soil the holes should be a minimum of 24 to 36 inches deep, although the actual depth will depend on the height of the column and the depth of the frost line. Posts should go deeper than the frost line to avoid heaving during freeze and thaw cycles. Again, this is usually specified by code when the deck is attached to the house.

If you have many holes to dig and/or have difficult soil to dig in, you should rent a power posthole digger. These can be operated by one person, and certainly make the digging go MUCH faster. Typically to rent one will cost about $50 for a day.

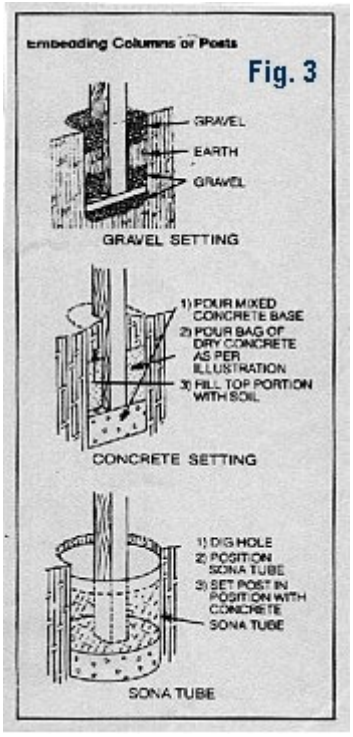
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





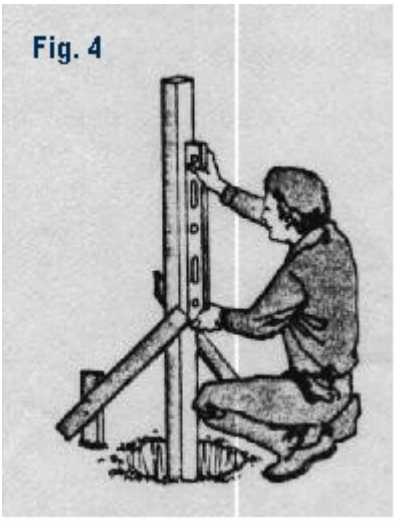
You can use pressure treated wood in the ground for your footings as follows. Fill the bottom of the hole with 6 inches of gravel and place a wood footer plate (2" x 6", or 2" x 8" cut off) on top of the gravel. Upright posts can then be positioned on this base (Fig. 3). Fill the posthole with alternating layers of 4 to 5 inched of gravel and earth. Tamp each layer until the hole is filled and post is plumb and solid. If concrete collars are used, taper the tops downward and away from the post for drainage. Posts can also be set in concrete. Or my preferred method, uses a concrete footing to just above the ground level. Fill the post hole completely with concretet and use a section of "sono tube" (a heavy cardboard tube, 8 inches in diameter) to finish off the hole at ground level. Make sure you have already purchased the hardware to attach the posts to the concrete so you can set the bolts in the concrete while it is wet.

For a complete article on preparing your footings see Post Holes (another article on this site).



When setting the posts directly in the holes, make sure they are plumb and in alignment with one another. Use a carpenter's level to check for vertical alignment (Fig. 4).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



One advantage of using the concrete footings and the wood attached to them above ground, is the leveling and exact location can be set later, when the beams are positioned. It allows for some adjusting later (a little, but that is all you are usually looking for.)

Step 5

Secure beams to posts. Using a string and level, find the desired deck floor height on the posts. Or extend a long straight 2 by 4 from the ledger board to the posts and placing a level on the board, determine the post height. By subtracting the thickness of the joist (use the actual dimension not the nominal one), you will have determined the correct height for securing the top of the beam to the post. Carefully mark all 4 sides of the posts. Beams can rest on top of the post, or be fastened to the side. You may cut all posts except those serving as railing supports at this time. Fasten the beam to the post, keeping post and beam flush. Or set the beam atop the post nailing it down to the post.

Step 6

Attach joists. Joists are attached to the house with joist hangers and/or supported by a ledger board. Joists are placed on 16" or 24" centers, and attached to the beams and ribbon joist. Joists can be attached to the beams using joist hangers, or rest on the beam. If the joists are to extend over a beam, do not extend them more than 1/3 of their length.

Step 7

Install deck boards using hot-dipped zinc-coated 16-penny nails.

Seperate boards using a small finishing nail as a spacer or set boards right up against each other. If pressure treated wood came dry, a space would be necessary for some

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Fig. 5

expansion may take place when it gets wet. However, it typically is quite wet and will always shrink. I have found that when placed tight against each other they will shrink leaving an adequate gap. If you leave to large a gap while they are still wet, the gap may get quite large .

Your deck surface is an important part of your project, and the most visible. Make it simple with the boards set to end on the joists. If you could not get decking long enough to span your deck, stagger the butt end joints so they do not all end along the same joist.

You can trim your deck after nailing to assure a straight line (see Fig. 5). Do not allow an overhang exceeding 1 ½". For a more finished appearance, cut boards flush to the joist and add a fascia board.

Fig. 5

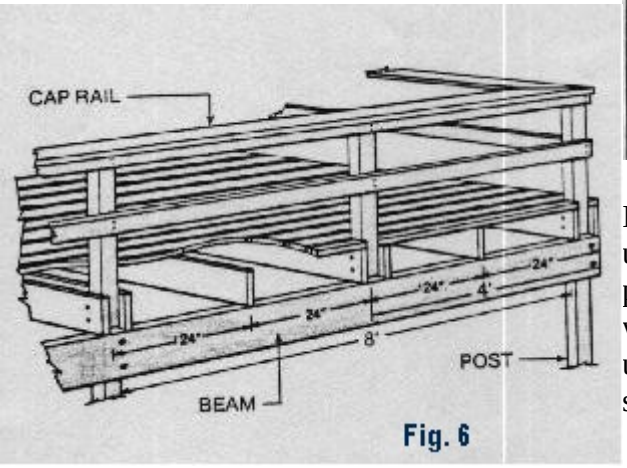


Fig. 6

If a board is slightly humped, install it with the bark side up when possible to minimize cupping. The weight of people and objects on the deck, and of the board itself, will tend to flatten it. A curved board can also be used; use a board to pry it to the desired position and nail securely.

Step 8

Install posts for railing. These can be a continuation of the posts which support the deck, or railing posts may be bolted to the outside joist or joist extensions.

Notice in Fig. 6 how the main posts continue up from the actual deck floor level and by doing so provide a good sturdy post. Intermittent posts or spacer posts can by used

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

between the main support posts. The top railing member can be easily nailed to the side of the main posts at desired height. Posts can then be cut off. Spacer post height can be determined and added for additional support and appearance. Railing cap of suitable size can now be added as well as additional rails. More railing ideas are illustrated below.

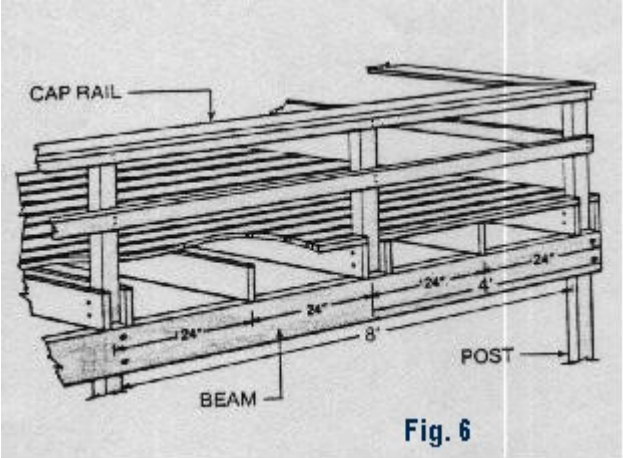
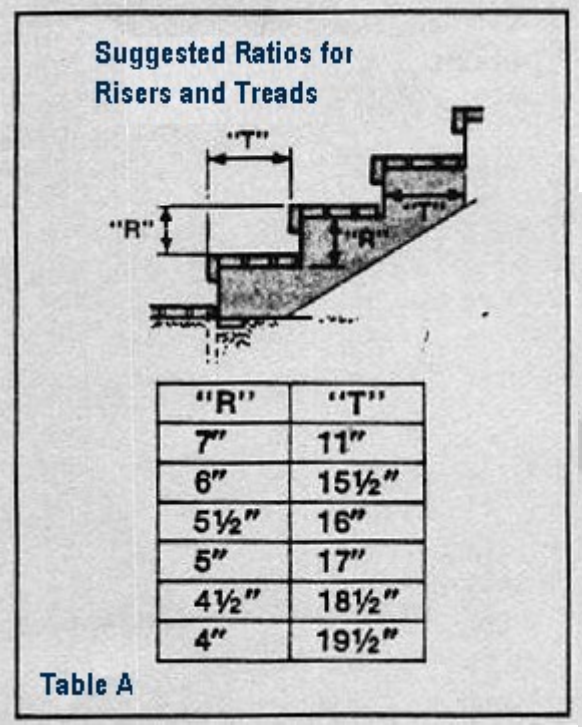


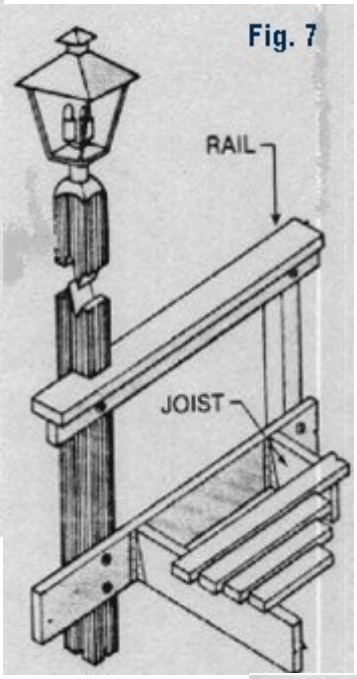
Fig. 6

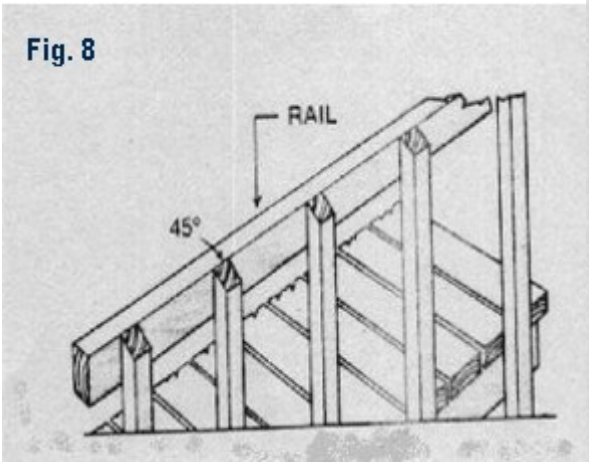
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

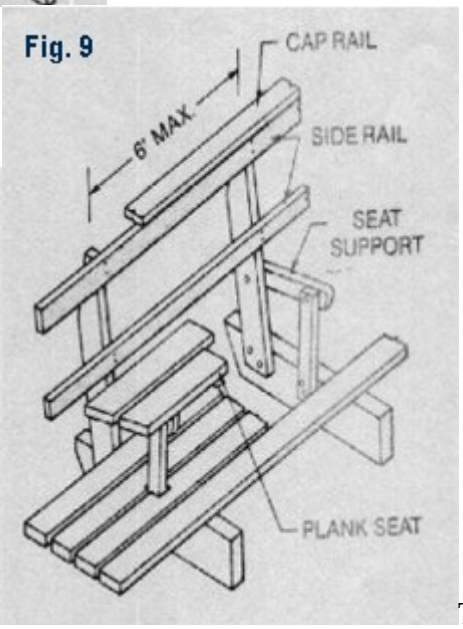


"R"	"T"
7"	11"
6"	15½"
5½"	16"
5"	17"
4½"	18½"
4"	19½"

Table A







The safety and beauty of your deck are enhanced by its railings. They can be plain or very elaborate, offering as much opportunity for individual preference as a fence.

Benches can be integrated into the railing on one or all sides. Bench seats should be at least 15" wide and 15" to 18" above the deck floor.

Privacy screens can enhance the beauty of your deck, as well as offering you privacy. They can also be used effectively under an elevated deck to create a storage facility or hide an unsightly hillside.

Step 9

Construct steps. Measure the vertical rise and decide upon the best riser size for each step. This will determine the number of steps needed. The adjecent table shows some

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

recommended ratios of tread length and riser height. Multiply the number of steps by the tread length to find the overall run of the stairs.

Using 2 x 4 or 2 x 6 boards for treads will reduce cupping problems common with wider boards.

It is also possible to purchase precut steps at certain lumberyards. A call ahead might eliminate some of the more difficult angle cutting you need to do.

Good Luck!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

DIY garden projects

How to build a Raised Formal Pool

It is very simple to construct, however it may be necessary for you to get some professional assistance in cutting the timber sleepers.

The pond is a simple rectangle measuring roughly 8x4 and about 12 deep.

I have used sleepers as they provide an instant wall. However if you possess simple bricklaying skills then the side walls can be constructed form brick or concrete block, thus there is no limit to the size of your pond.

Materials you will need

Pond liner (amount depends on size of pond)

Fabric pond insulation

3 x Railway sleepers 8 x 8

Coach bolts or Heavy duty L brackets

Sand

Timber or slabs for coping

Rake Spirit level

Lump hammer

Short length of PVC - 1 pipe to provide an overflow.

Step by step Instructions - Step 1

Step 1

Once you have chosen the site for your pond, roughly level the site with a rake. A few shovelfulls of stonedust or coarse sand can be added to the site to ensure an even base for the sleepers to rest on.

Place your first full sleeper in position, then once you are satisfied that the position is correct, using a spirit level ensure the sleeper is level horizontally.

Cut one sleeper in half and use these two halves as the ends of your pool, using the same method for levelling.

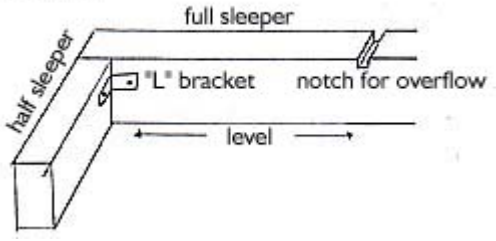
Secure the sleepers together using coach bolts or heavy duty L

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

brackets. Place the final full sleeper to create your side wall.

Use a carpenters right angle to ensure that the internal angles are as close to 90 degrees as possible. Finally cut a small channel, approximately an inch wide to allow the overflow pipe to sit neatly in the sleeper (see diagram 1).

Diagram I



Tip - Use stonedust to pack underneath the sleeper to ensure that it is level.

Step 2

Place the sand in the bottom of your sleeper frame to ensure a level base to your pond (2-3 should be sufficient).

Now line the internal walls of your pond with the fabric insulation. This will prevent any rough edges puncturing the liner.

Tip - Use a heavy duty stapler to secure the fabric to the sleepers.

Step 3

The size of your pond liner is dependant on the length and depth of your sleeper.

Your liner should be:

Length of liner Length of your pond + (depth x 2)

Width of liner Width of pond + (depth x 2)

Place the liner centrally on top of your sleeper frame, and hold in place with a few round stones.

Now you can begin to fill the pond using a hose pipe. As the weight of the water lowers the liner into the sleeper frame, gradually firm the liner into place, making neat folds in the corners.

Allow the pond to fill to the desired level.

Tip - It would be wise to allow an extra foot or so on both the width and the length of the liner, to allow for any mistakes when positioning the liner.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Step 4

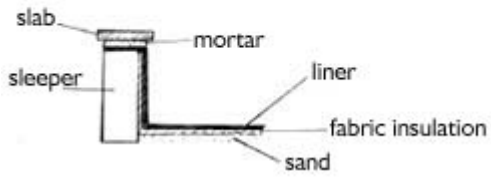
Once you are satisfied that your liner is sitting neatly inside your frame, place your overflow pipe in its recess and trim off any excess liner on the external edges of your frame.

You can now place your coping on top of the exposed liner. Slabs, timber, decking boards or even crazy paving make an ideal coping.

The type of coping used is dependant on the width of your sleeper and indeed your personal preference.

Not only does the coping hide the exposed liner, but also provides an effective finishing touch (See diagram 2).

Diagram 2
Cross section of side wall using slab coping



Tip - If you are using cement to bed slabs or crazy paving, avoid dropping any excess cement into the pond as this may affect any plant or fish life.

Step 5

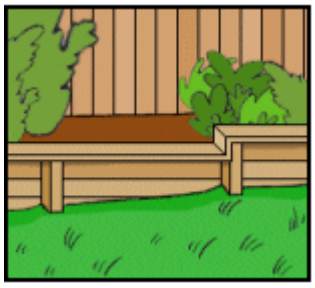
You can now give yourself a pat on the back. The hard work is all over.

All that is left is to add any aquatic plants, if required, or to install a fountain. So now, relax and enjoy your new water feature.

Tip - The cable for a fountain can be run through the overflow pipe to avoid any unsightly cables showing.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

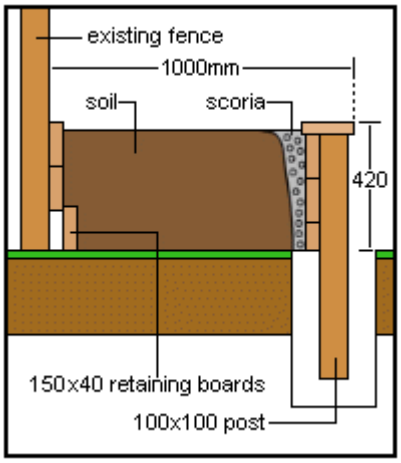
Retaining Wall



How to build a low garden retaining wall

This section will explain how to make a garden retaining wall along an existing fence, which can transform a dull front or back yard into an exciting garden.
The retaining wall will be 1 metre in from the fence and on average 420mm high (depending on the contour of the section), and with a capping board on top will also double for a seat the length of the retaining wall.
The drawing on the left shows an example of the shape the retaining wall might take, but other shapes and ideas are only limited by the imagination.

Retaining Wall - cross section:



Materials:

Posts: H4 treated 100x100 sawn posts obtainable in 3 metre lengths. Each length will do 3 posts. The posts will be spaced a maximum of 1200mm and in post holes 500mm deep.

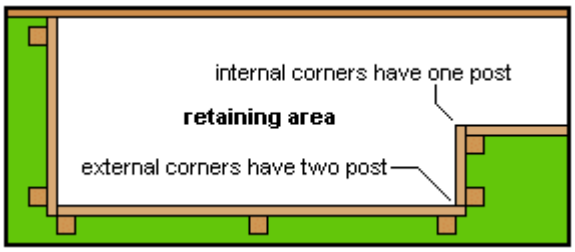
Retaining boards: H4 treated 150x40 sawn. Usually sold in random lengths.
Capping: H4 treated 150x40 sawn. Usually sold in random lengths.

Instructions

Step 1: Determine perimeters
Determine the shape and perimeters of the retaining wall and mark out with a string line slightly above ground and tied to stakes where needed. The stringline will mark the outside boundary of the retaining wall.

Step 2: Preparing holes
Mark out all end and corner post holes first. External corners will have 2 posts and internal corners will have 1 post (see drawing below)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

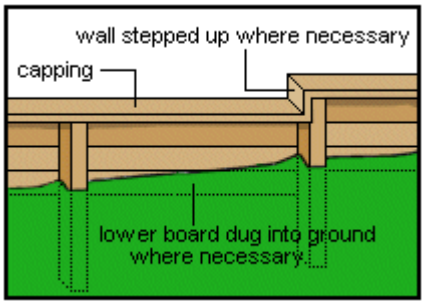


Measure and divide the straight lines between the corners and ends into equal distances not exceeding 1200mm and mark for post holes.
Dig all the post holes 250mm diameter and 500mm deep.
NOTE: If the ground is exceptionally soft then the hole should be deeper and the diameter larger, where as if the ground is exceptionally hard then the hole would not need to be so deep. Commonsense stuff.

Step 3: Putting in the posts
Cut all the posts 1 meter long. That is slightly longer than required, but the tops will be trimmed later.
Make a mix of concrete.
In a wheelbarrow or concrete mixer make a mix consisting of 5 parts builders mix, to one part cement. Pour in clean water and mix to a uniform consistancy with a spade or shovel. The mix should be stiff enough to hold up the posts without the need of bracing props yet wet enough to work around the posts
Put the corner and end posts in first. position the posts to almost touching the stringline and ensure post is plumb or vertical by way of holding a spirit level against two adjacent sides of the post. Shovel concrete around the post and fill to within 50mm from the top of the hole.
Lift the post up slightly in order to allow some concrete to flow under the post. Shake the post repeatedly slightly back and forward (having a vibrating effect) to enable the concrete to flow evenly under and around the post. You shake it to the left ♫you shake it to the right ♫you do the hippy shake ♫and you shake it all about...
Check the post again for position and plum.
Repeat this action untill all posts are in. First the corner and end posts and then the intermediate posts.
Leave a couple of days to set.

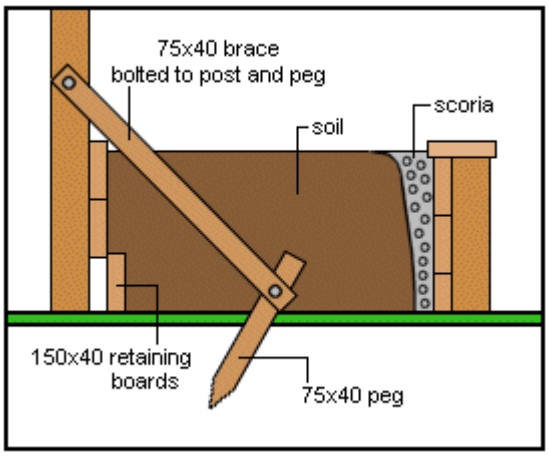
Step 4: Fixing the retaining boards
The posts should be approximately 550mm out of the ground. That is more than needed, but the tops will be trimmed off later.
The retaining boards are 150x40 sawn h4 treated, and the required finished height of the wall including the capping is 420mm which is a good seat height, but of course the height will vary in places due to the contour of the ground.
To obtain the required height (420mm), the first (bottom) board needs to be 80mm above ground level. Achieve this by either ripping (cutting) along the board or by digging the board into the ground. Fix the first board level to the inside of the posts with 90mm galvanised nails.
Join boards only on posts.
Fix another two boards on top of the first.
If the ground is not even, it will be necessary to either step up or step down the retaining wall depending on the contour of the ground. Do this as shown in drawing below.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Step 5: Trimming the posts and fixing the capping.
With a handsaw, trim the top of the posts off level and flush with the top of the retaining boards.
Fix the capping (150x40 sawn H4 treated timber) on it's flat so it covers both retaining board and post. Mitre corners and rises and fix to both retaining boards and posts with 100mm galvanised flathead nails.

Step 6: Fixing the retaining boards to the fence.
Fix the top retaining board to the fence posts with 100mm galvanised nails so it is level with the top of the retaining wall capping
Fix the second board under the first and nail also to the fence posts.
The third board (bottom) can be placed on the ground and against the second board. It does not have to be ripped (cut) or dug into the ground. The loose fit is good for water seepage.
Fence posts are not purpose designed as retaining wall posts, so a brace is required to stop the fence from leaning or being forced out when the soil is placed in the retained area.
Brace each post as shown in the drawing below using 75x40 h4 treated timber for both braces and pegs (rip 150x40 retaining board in half to get the braces and pegs. Bolt the braces to both the fence posts and the pegs using galvanised bolts or galvanised coach screws.



Step 7: Drainage and fill.
This retaining wall retains little soil and not subject to the forces of higher walls, however, a drainage system is still advisable to take seepage away and to avoid any possible waterlogging.
Position old sheets of cardboard, hardboard or gibboard (or some other material that will disintegrate) down the back, about 100mm behind the retaining wall. Commence filling the retaining area up. Fill between the sheets and the wall with drainage metal and behind with soil, keeping the level the same on both sides of the sheets.
If there are gaps between the retaining boards, that will be enough to let the seepage through and complete the drainage system.
If there are no gaps between the retaining boards, either drill weep holes in the bottom

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

retaining board about every 1200mm or run a drain coil or drain tile the length of the wall at the bottom of the drainage metal backfill.

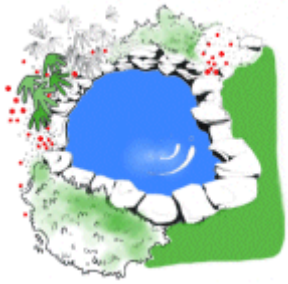
An average size trailer holds half a cubic metre.

Material	Comments
100x100 sawn h4 treated	Comes in lengths of 2400mm, 3000mm and random
150x40 sawn h4 treated	Random lengths up to 6m long
Top soil	sold loose from quater cubic metre upwards
Scoria ap20	Drainage metal. Sold loose from quater cubic metre upwards
Builders mix 20mm	For concrete. Sold loose from quater cubic metre upwards or sold in handy bags for smaller jobs.
Cement	For concrete. Sold by the bag. Usually 40kg and 25kg

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Garden Pond

HOW TO CONSTRUCT A SIMPLE GARDEN POND

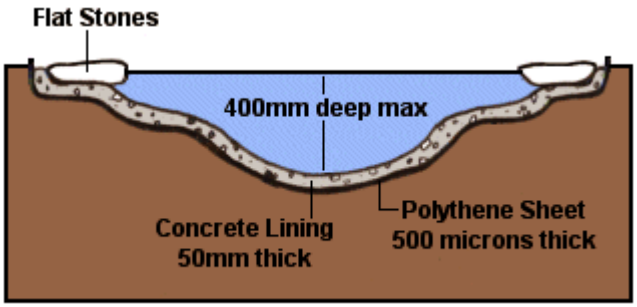


Tools

Spade or shovel
Concrete mixer, or wheel barrow for smaller ponds
Garden hose with spray nozzle
Bucket and hose water level or carpenters level

Materials

500 gauge polythene sheet (enough to line your size pond and extend at least 150mm beyond the perimeter of the pond comfortably).
Fine builders mix and cement (a pond of 5 square metres will need .3 cubic metres of builders mix and one and a half 40kg bags of cement).
An array of flat stones (enough to go neatly around the edge of the pond).
A can of spray paint for marking pond perimeter.



Instructions

1 Mark out your desired shape of the pond with a can of spray paint.

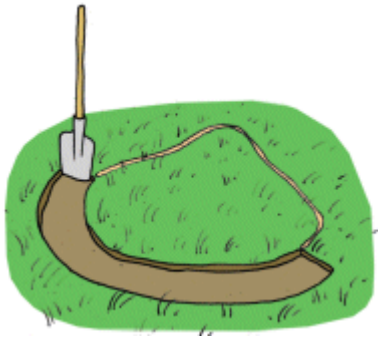
A Helpful Note from Ted about Extreme Conditions
For those of us in the Great White North [Canada], where temperatures vary greatly, the pond - especially if being used for fish and plants should be at a depth of 900mm with a shelf area for some species of plants at approximately 300mm from the top. Although in Canada, this will not stop the pond from becoming a large ice cube, it will prevent broiled fish in the summer from excessive heat. Again, in northern climes, one would have to add wire mesh to keep the pond together. A far better solution would be to use the heavy rubberised liners that are available for fish ponds, eliminating the need for cement. As for the pump - if you are adding one for aeration or a decorative waterfall, that will do the trick.
Ted L Stratford, PE

AnotherNote:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

In some places, pools deeper than 400mm need to be fenced and need a permit. Check with your local Authority.

2 Check the ground height along your marked line about every 600mm. You want these points level with each other. You can do this by using our bucket and hose water level method. For instructions on how to make and use a bucket and hose water level see next pages.
Using a spade level out the marked line, following around the perimeter of the pond. Dig about 200mm wide and 50mm below existing ground level at the lowest point.



This is now the shelf around the perimeter of the pond and is where the flat stones will be placed once the concrete has been poured.

3 Dig the pond out from the pond shelf, sloping gradually down to the centre (saucer shaped) to a maximum depth of 400mm. If the pond has the capability of a water depth greater than 400mm (16 inches) then it is required to be fenced in accordance with the Fencing of Swimming Pools Act 1987. (New Zealand)

Lay the polythene on the bottom of the pond and up over the pond shelf leaving at least 150mm spill past the pond edge.

4 Lay the flat stones temporarily around the shelf of the pond to ensure they fit in place and that you have enough. Remove them out of the way about 300 - 400mm from the shelf edge, until the concrete is poured.

5 CONCRETE In a concrete mixer, (or wheel barrow for small pond) mix four parts fine builders mix, to one part of cement. Pour enough clean water to the mix, to make a fairly stiff mixture. If the mixture is too dry add more water. If the mixture it too wet, add more builders mix and cement to the same ratio as above.

Spread the concrete over the entire polythene liner starting at the bottom of the pond, and finishing up at the pond shelf. The concrete should be at least 50mm thick. Use a block of wood for a trowel, as the edges on a conventional trowel are too sharp and likely to pierce the polythene liner.

6 Lay the flat stones around the edge of the pond shelf, pushing them slightly into the concrete.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A large overhanging flat stone, strategically placed, can provide shade for fish, but be sure it is fixed firmly in place, and capable of taking any weight which might be placed on it later.

7 After a couple of hours (more or less depending on the weather or temperature) the concrete should be stiff enough to allow the pond to be filled with water.
When filling, place an old sheet, piece of polythene or similar in the pond, so the flow of water does not scour the concrete.

After filling remove the sheet, and leave the pond to set for about a week. After the week is up, empty and refill the pond three or four times to reduce alkaline level.

water level

HOW TO MAKE AND USE A BUCKET AND HOSE WATER LEVEL

Material Requirements

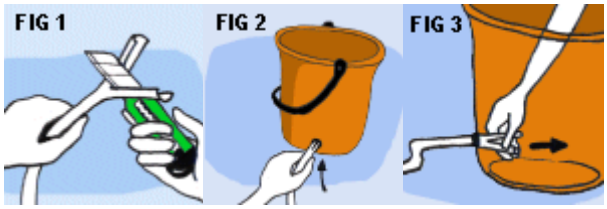
You will need a standard plastic bucket and 12 metres of 6 mm nylex clear plastic tube. (Both items can be purchased from any major building suppliers, and should cost under $20).

Instructions

1. Drill a hole in the bucket 50mm up from the bottom. The hole size should be slightly smaller than the plastic tube.

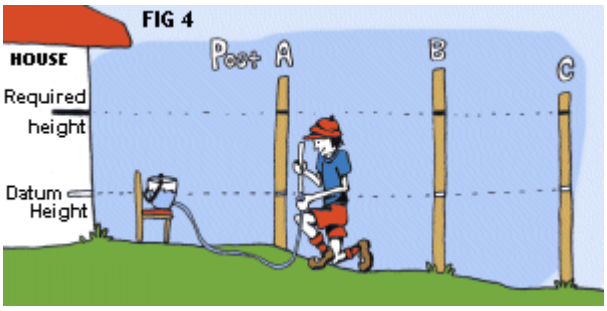
2. Slice one end of the plastic tube about 50mm down. **Fig 1** This enables the tube to be threaded into the slightly smaller hole in the bucket. **Fig 2**

3. Pull the tube from the inside of the bucket until tight. **Fig 3**



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

How to use
a bucket and hose water-level



Place the bucket on a saw stool or chair and fill to the top with water.
The height of the bucket does not matter.
Let the hose loose on the ground until water is running out freely and all the air bubbles have come through.

Method 1
This method is good for profiles, high decks, high retaining walls, etc.

Pick up the end of the hose and hold it against Post (A). **Fig 4**
Mark the post where the water line shows in the hose.
This becomes the datum line (not the known required height).

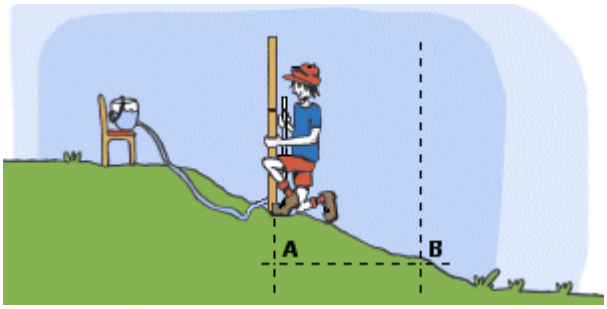
Mark the datum height on the house, post (B), and post (C) in the same way.
You now have a level datum line on all four objects, but you want to trim the top of the posts to the same height as the known required height on the house. Shown in **Fig 4**

You do not need the water level any more.
Simply measure up from the datum height marked on the house to the known required height, also marked on the house. Transfer this measurement to posts (A), (B) and (C), measuring up from the datum height marked on each post.

You now have a level line from the known required height on the house, through to post (A), (B) and (C).

Method 2
This method is good for low profiles, low decks, low retaining walls, for finding level heights for ponds and pools, ground contours, etc.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Pick up the end of the hose and hold in against a piece of rod held upright on area (A). **Fig 5**

Mark a pencil line on the rod where the water line shows in the hose.

Walk down the hill and do the same over area (B).

You will now have two pencil marks on the rod. Whatever the distance measures between the two marks, is also the distance area (A) will need to be dug down to be level with area (B).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

How to hang wallpaper

Which tools to use:

- paste (use the strongest available recommended on the wallpaper)
- bucket
- sharp knife (like a trimming knife)
- pasting brush
- dry hanging brush
- seam roller
- pasting table (they're cheaper than you think!)

Planning

As wallpaper will look the best when hung according to the layout of your room, it is important to determine where to start wallpapering before anything else. If you're going to wallpaper above the fireplace, you must start here. Find the middle of the fireplace and decide whether you want a piece of wallpaper on each side or whether you want this to be the middle of your first piece.
If you don't have a fireplace, or you're not going to wallpaper it, you should start on the wall with the main window, working away from the window on either side. This will ensure the pattern will be the same either side of the window. Although this might cause an overlap in another area of the room, it will look better around the window. It will also prevent joins showing up more than necessary. As both sides of the wallpapering will have to meet somewhere, make sure it's in a less conspicuous corner (for example, the corner behind the door). This will give a much better finish than when you start at one end of the window and wallpaper all the way round.

How to get started

Draw a plumbline to ensure the wallpaper will hang straight. You can hang a weight from a piece of string to mark the plumbline. Measure the height of the wall, adding about 100mm. This will help you hang the wallpaper, and after hanging, you can trim the excess paper.

Cut the paper with a sharp knife, for example a trimming knife. Now cut the next piece of wallpaper, making sure the pattern aligns with the pattern on the first piece of wallpaper. Then, after you've hung the first piece on the wall, the third piece can be cut, aligning the pattern again with the second piece, etc. This is the best way to prevent any major mistakes in cutting the paper!

Paste the first piece by (on one side) overlapping the edges of the table with the wallpaper. This will prevent paste from getting on your table on this end. Starting at the centre of the paper, work the paste to the overhanging end of the paper. Then move the paper up and hang it slightly over the edge at the other side of the table. Now paste this end of the paper. Carefully fold the pasted end of the paper before moving along and lining up the paper. This will help soak the paste into the paper and prevent any paste from sticking to your carpet! After pasting the other end, fold the end neatly to the already folded part, aligning the edges. Let it soak for a while in order to make the paper easier to work with and it will also ensure a better adhesion to the wall. While this is soaking, you can paste the second piece of wallpaper. Make sure however, that you keep an eye on the soaking times.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

To hang your wallpaper, make sure you only unfold the end of your wallpaper that will reach the ceiling. Start hanging it along the plumbline. Make sure you do leave an overhang, so that you can trim along the ceiling later. While you're hanging the paper, smooth it by using your dry hanging brush. Work towards the edges of the paper. Now you can unfold the bottom end of the paper and press it slightly against the wall, pushing any air bubbles out to the sides. You can now trim the overhang with a trimming knife.

The following pieces can now be lined up to match the pattern. It is best if the paper overruns slightly to the other wall. As the walls hardly ever will join at a straight angle, this will prevent any gaps. You will then have to double-check the next wall by drawing another plumbline. Now continue papering the wall.

A few obstacles you'll always come across

- Doors. You'll be very lucky if your wallpaper matches up at your doorframes! Most of the time you will have to cut around it and nice and neat too. Here's how to do it: If you come up to the door, just start hang the wallpaper like you would normally. Gently feel the position of the frame through the paper and mark where the frame has to be cut out from the paper. Start cutting in towards the frame from the paper that covers the doors and which will be discarded. That way you have the least chance of getting it wrong. Get rid of most of the discard paper (so you can work better) and trim the wallpaper neatly around the frame.
- Sockets and switches. Always turn the electricity off if you want to work behind the socket or switch. Identify the shape of the socket/switch behind the paper, and cut, starting in the middle, towards the edge of the paper that needs to be removed. Loosen the socket or switch, cut away the excess paper and neatly fold the rest behind the socket/switch.
- Light fittings and other circular objects. Again lightly feel the shape of the object through the overhanging paper. Cut from the centre of the circle out to the edge of the shape (so that it will look like a pie-shape) and fold the paper away. Trim away the excess paper.

Top tips for a better finish

- Nothing is more annoying than having to fish your brush out of the bucket and getting paste all over your hands. There are now brushes available that you can hook on the rim of the bucket, leaving you with clean hands.
- Make sure you check your paste when you hang vinyl wallpaper, as vinyl has difficulty sticking to itself.
- To remove air bubbles, it is very important to work quick and neat. Make a small incision in the air bubble when the paper is still wet, apply some paste behind it, and carefully smooth the paper over.
- Always be careful when you use the seam roller. Whereas it might help you smoothing the edges of your wallpaper, it also might smooth your pattern if you're not careful! It can also leave a sheen on certain paper, so practice on a test bit first, to establish the amount of pressure it allows you to use.
- Don't get paste on your table! It can be difficult sometimes to get wallpaper paste off the front of your wallpaper, so be careful.
- In order to reduce the amount of off-cuts, it is sometimes better to use two rolls at the same time to align the pattern of your wallpaper.
- It is not advisable to use a roller to apply paste to your wallpaper, unless the paper is really thick. If it's too thin, your paper will stick and roll around your roller.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Turn off radiators in the room you want to wallpaper, especially if you have to wallpaper behind them. The heat from the radiator is likely to dry out the paper too quickly, leaving it to come off the wall.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

PVC DOWNPIPES

How to install pvc downpiping

PVC is most common form of downpipes installed by the home handyman or 'DIYer'. Below are intallation instructions for Marley brand downpipes.

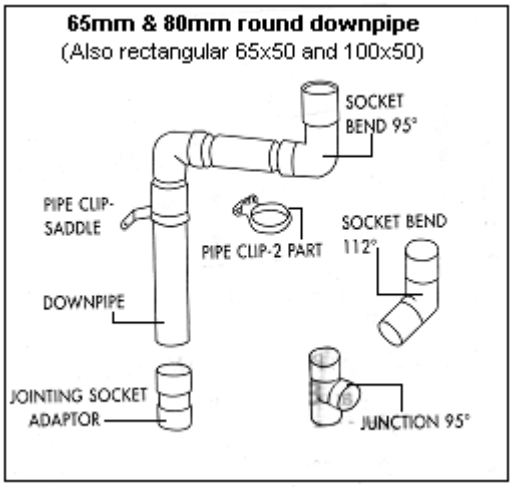
You will require a hammer, hacksaw, cloth, ladder or trestles and planks, measuring tape, pencil and rule.

Marley spouting and downpipe can cope with a peak rainfall of 200 mm per hour providing they are correctly installed.

Plan area of roof served by downpipe (in square metres).

ROOF PITCH	RP65/MC16	RP80/MC140
0 - 25°	60	100
25 - 35°	50	80
35 - 45°	40	70
45 - 55°	35	60

When more than two angles occur in a system the recommended roof area served by a downpipe should be reduced by 5 square metres for each additional spouting angle.



Notes:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Rectangular downpipes should not be used in a horizontal application, or when subjected to head pressure (for example, connected to a water tank).
- Downpipes should not be used in wall or ceiling cavities.
- If a round downpipe is being installed horizontally, care should be taken that all joints are sealed.

Downpipe installation.
Assemble downpipe, using angles if there are soffits. Where a downpipe has a socket on it the socket on the long section of the bend can be sawn off. This will enable the remaining spigot to fit into the downpipe socket.

By cutting the socket off the long end of a downpipe bend, a tight offset can be made.

Pipe and fittings should be solvent welded together with Marley MCS Welding Solvent Cement; but do not solvent weld the downpipe socket or top bend to the rainwater head outlet.

The downpipe should be fixed to the wall using three pipe clips per length. By using non-corrosive screws to fix the downpipe clips, the downpipe can be removed in the future.

Painting
After installation, Marley downpipes can be painted to any desired colour.
To prepare the surface, wipe down with a bath cleaner, and thoroughly wash. Once dry, apply two coats of acrylic paint ensuring the first coat is dry prior to applying the second coat.

Maintenance
To ensure your new Marley downpipes maintain their good looks for years and years, an annual cleaning using warm soapy water and a car cleaning cloth is all that is required. Simply rinse off with clean water.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

How to Repair Faucets

Faucets are sold in many different makes and models, but the common ones fall into just a few types. You'll find only two basic kinds of faucets; washer-type (or compression) faucets and washerless faucets.

TOOLS AND MATERIALS		
Smooth-jaw adjustable wrench	Silicone grease or petroleum jelly	Repair Kit
Screwdrivers, standard and Phillips	Seat dressing tool	Cartridges
Pliers	Seat	Disc assembly
Electrical tape	Seat wrench	Manufacturer's instruction sheet
Pipe wrench	Silicone rubber sealant	Penetrating oil
Faucet washers	Socket wrench	Locking plier/wrench
Brass screws	Packing	Cleaning cloths
Stem	O-rings	Hand cleaner

STEP 1

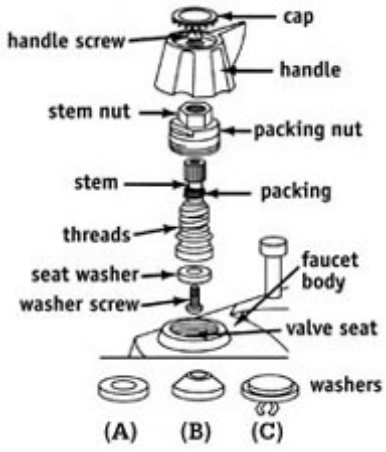


FIG. 1 - Compression faucet

REPAIRING A LEAKY WASHER-TYPE FAUCET

- Washer-type faucets work with a rubber or composition washer that closes onto a metal washer seat (Fig. 1). The washer can become hardened, worn or the seat wears, causing the faucet to leak. You can close the faucet tighter to stop the leaking temporarily, but this increases the internal damage to the faucet.

- To repair the leak, first turn off the water. If there's a shutoff valve beneath the fixture, turn off the water at that point. Otherwise, turn it off at the main house shutoff valve in the basement, utility room, or crawlspace. Turn off the hot water supply at the water heater.

- Take the faucet apart by removing the handle (this may not be necessary on some

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

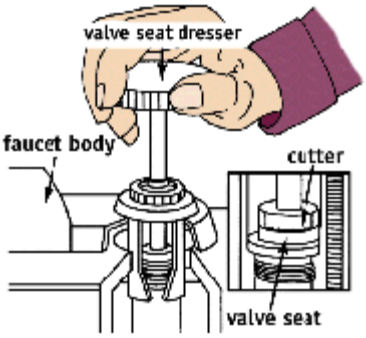


FIG. 2 - To use a valve seat dresser, place the tool in the valve seat and turn untill the seat is smooth.

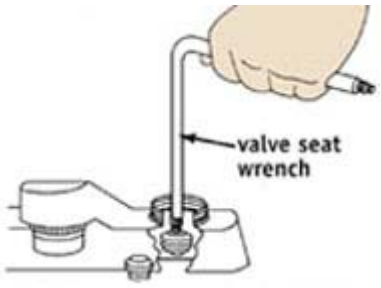


FIG. 3 - T remove the valve seat, insert a valve seat wrench into the faucet body and turn counterclockwise.

older faucets). Loosen the Phillips-head screw, which usually is beneath a decorative cap in the center of the handle. The cap either unscrews or snaps off when you pry it with a knife blade. If you must use pliers on decorative faucet parts, pad them with electrical tape or cloth to protect the finish. And take special care with the plastic parts found on many modern faucets. Next, lift or pry the handle off its broached stem. Unscrew the packing nut beneath the handle, exposing the rest of the stem. Remove the stem by rotating it in the "on" direction. It will thread out. Reinstall the handle if you have difficulty turning it (Fig. 1). Clean chips from the faucet cavity, but do not use harsh abrasives or a file.

- Examine the stem. If the threads are badly corroded or worn, take it to your retailer and get a new stem to match. Clean the stem if it's dirty.

- Now look at the washer, which is located on the lower end of the stem and held in place by a brass screw. If the washer is squeezed flat or has a groove worn in it, replace it–this should stop any dripping. Take the washer with you to your dealer to ensure an exact match in size and style. If the brass screw is damaged, too, replace it with a new brass screw.

- The washer seat is located inside the faucet body. You probably can't determine if the washer seat is causing the leak just by looking at it. Any faucet that needs frequent washer replacement obviously has a damaged seat. The seat should either be refaced with a seat-dressing tool. A seat-dressing tool is not costly. Every home with washer-type faucets needs one. Use the tool according to the manufacturer's directions, placing it in the faucet along with the packing nut. Then rotate (Fig. 2) until the seat is

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

smooth, and blow out the chips.

- Some washer seats can be unthreaded and replaced. Check the faucet body with a flashlight to see if it has a square or hexagonal hole through its center or is slotted for a screwdriver; if so, it is replaceable. However, if the seat simply has a round hole through its center and no slots, it is not replaceable. In this case, dress it with a seat-dressing tool. To replace it, you'll need a faucet seat wrench, which comes with a combination of square and hex heads to fit most faucet seats. Turn the washer seat counterclockwise to loosen, clockwise to tighten (Fig. 3). Add a little silicone rubber sealant (RTV) or pipe joint compound around the threads of the seat before you install it to make it easier to remove during future repairs.

- It's important to install the correct type of faucet washer (Fig. 1, bottom). A swiveling washer (C) is preferable to either (A) or (B). To install washer style (C), file the shoulder off the end of the stem, drill out the threads of the screw hole. Instead of rubbing against the seat as it closes, a swiveling washer closes with a straight-down, frictionless action – this allows it to outlast fixed washers.

- Following this seat and washer service, your faucet should be like new. Put the parts back together in the reverse order of taking them apart. Spread a bit of petroleum jelly or silicone grease on the threads of the stem to lubricate the faucet's action.

- If the faucet leaks around the stem rather than from the spigot, install new packing. You may want to install one of the newer nylon-covered or graphite-impregnated packings–their lubrication allows the faucet handle to turn more freely. Wrap one turn of

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

this packing around the stem just beneath the packing nut (Fig. 1). Use three complete wraps if you're applying string-type packing. Some stems use O-rings, rather than packing. For these stems, replace the O-ring with a matching one to stop a leak. Hand tighten the packing nut, then tighten it another half-turn.

STEP 2 - REPAIRING A NOISY FAUCET

- A noisy washer-type faucet is usually caused by a loose seat washer. To stop the noise, first turn off the water and take the faucet apart as described previously. If the washer is loose, tighten it or replace it.
- After threading the stem back into the faucet body, try moving it up and down. If it moves, the stem is worn and the entire faucet must be replaced.
- Some faucets are noisy due to poor design and construction. The only way to solve this problem is to replace the faucet with a quality one.

STEP 3 - REPAIRING WASHER-TYPE BATH AND SHOWER FAUCETS

- To take apart a bath/shower faucet for repair, first turn off the water. Then take the faucet apart by removing its handle, escutcheon and packing nut. The packing nut may be buried deeply in the wall, requiring a socket wrench for removal.
- Your bath and shower faucets may have a renewable seat that can be smoothed with a seat-dressing tool or removed and replaced using a seat wrench. For replacing and repacking the washer, follow the same instructions provided for a washer-type faucet. Some faucets may need a complete replacement of the combination stem/seat unit.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

STEP 4 - WASHERLESS FAUCETS

- A leak in a washerless faucet usually indicates that the working parts need replacing. Often, prepackaged repair kits are available. Kits may contain all the necessary parts, or may include only the specific parts that need replacing. Follow the instructions for installing the replacement parts. Washerless faucets on tubs and showers are repaired in the same way as those on sink and washbasins.

STEP 5 - DIAPHRAGM-TYPE FAUCETS

- The diaphragm faucet is washerless but is similar to washer-type faucets. A rubber diaphragm between the stem and seat creates a straight-down, frictionless close. As with washer-type faucets, diaphragm faucets have two handles.

- Remove the stem by following the steps outlined for washer-type faucets. Instead of a washer on the end of the stem, you'll find a swiveling disc. If the rubber diaphragm doesn't come out with the stem, it is still inside the faucet.

- If the diaphragm didn't come out with the stem, use pliers to peel it from inside the faucet and pull it out. Install a new diaphragm around the swiveling disc, then replace the stem in the faucet.

- If the faucet is leaking around the stem, replace the stem's O-ring before reinstalling the stem.

STEP 6 DISC-TYPE FAUCETS

- Disc faucets may have one or two handles. The water is controlled by openings in the two discs. When the discs are rotated to align, the water flows; when the discs are misaligned, the water shuts off. If the discs wear, the worn discs cause the faucet to leak. Simply turning the handles harder will not stop the leak.

- To repair a leak in a *two-handle disc* faucet,

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

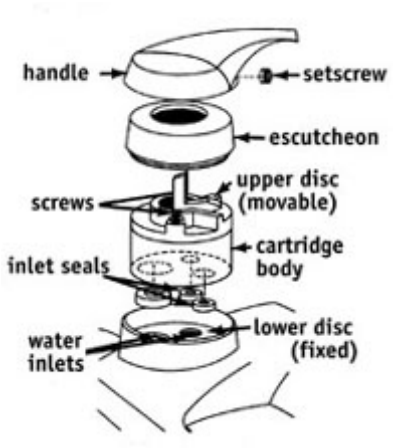


FIG. 4 - Disc faucet

turn off the water and remove the handle on the side that's leaking.

- Use pliers to pull the disc assembly out of the faucet (Fig. 4).
- Beneath the disc unit is the seat assembly, or seal. Replacing this special O-ring may stop the leak.
- You may need to install a whole new disc assembly for faucets that have been used over a long period of time. In this case, all moving parts of the faucet will have been replaced and should last as long as the original discs did. The parts of some disc units snap apart into a separate bonnet assembly and bottom cap.
- To repair a leaking *single-handle* disc, turn off both the hot and cold water and remove the handle to expose the disc assembly. Take out the screws to lift the assembly out of the faucet (Fig. 4).
- You'll notice that beneath the disc unit are three O-ring seals. Though unlikely, water could be leaking between the unit and one of these seals. In this case, you may be able to stop the leak by cleaning the disc assembly and faucet body and installing a new set of seals. If that doesn't work, the entire disc unit must be replaced. This will renew all moving parts.
- Replacing the unit is fairly simple. Place the three O-rings into their recesses in the bottom of the disc unit. Then install the unit and tighten the screws. Finally, replace the handle–and you're done!

STEP 7 BALL-TYPE SINGLE-LEVER

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

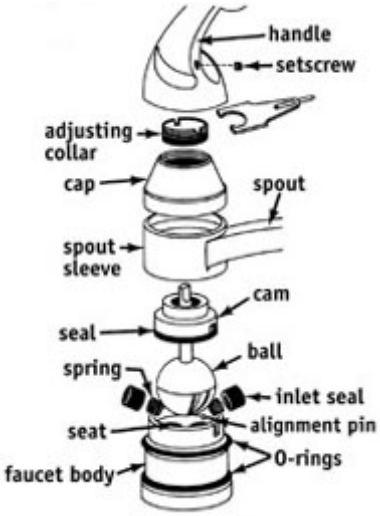


FIG. 5 - Ball faucet

FAUCETS

- The single-handle faucet with a ball inside to control both hot and cold water may either leak at the spigot or at the handle. A handle leak is usually caused by improper adjusting-ring tension. Simply adjust the tension to stop the leak. Leaks at the handle can also result from a worn cam gasket. Dripping from the spigot is usually caused by worn spring-loaded, soft rubber seat assemblies.

- Parts for ball-type faucets are available in kits. Get the spring/seats kit for spigot leaks, or the complete kit for handle leaks. It may be advisable to use the complete kit to replace all working parts of the faucet at the same time. In any case, you'll need a kit containing the spanner/hex wrench for removing the handle (hex end) and turning the adjusting ring (spanner end).

- Without turning the water off, loosen the handle set screw. Slide the handle from its stem.

- For a handle leak, try using the spanner wrench to tighten the adjusting collar (Fig. 5). Tighten it by turning the wrench and collar clockwise until the faucet doesn't leak when it is turned on and off. If the adjustment is too loose, the faucet will leak. If you turn it too tight, the handle will be hard to move. When the adjusting ring cannot be turned with the wrench, it is corroded. At this point, you will need to remove the cap to free the adjusting ring. (See next step.) You *must* turn the water off before removing the cap! Apply penetrating oil to the threads, remove the ring and clean all parts before reassembling.

- *Install the seats.* For faucet leaks at the spigot, you must install new rubber seats and springs. You *must* turn off the water to make this repair. Unscrew the chrome cap by

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

turning it counterclockwise. If it won't turn easily, wrap electrical tape around the cap and turn it with pliers. The adjusting ring, which is threaded into the cap's center, will come off with it. For a seats/springs replacement, pull the ball up and out by its stem. The gasketed cam will come with it. Now you can locate the two rubber seats and springs inside the faucet body. Remove them with pliers or yours fingers and install the new ones. The springs go into the holes first, and the cupped sides of the seats fit over the springs.

- *Service the ball.* If the ball is dirty or coated with scale, clean it or replace it with a new one. Both plastic and brass balls are available, but use a plastic one if your home has hard water.

- *Reassembly.* Put the ball and cam back into the faucet with the slot in the side if the ball fitting over the pin in the faucet body. Then make sure the tab on the cam slips down into the notch in the body. Not aligning the tab and notch is the number one cause for a faucet leaking after it is repaired. Finally, screw on the cap and adjust the ring as described in Step 2. If a properly adjusted ball-type faucet leaks at the cap, the cam and gasket must be replaced.

- *Swing spouts.* If a single-lever ball faucet leaks at the base, you should replace the O-rings. Remove the spout-retaining parts, as well as the spout. Wrap the spout-retaining nut with electrical tape to protect it, and remove the nut with a wrench or pliers by turning counterclockwise. Remove the spout by pulling it up and side-to-side. One or more O-rings should now be exposed (Fig. 5). Take the O-rings to your hardware or home center store to get matching O-rings for replacement. Clean any scale that appears on the spout base, faucet body, and the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

inside of the swinging spout. Install the new O-rings and reverse the steps above to reassemble the faucet.

STEP 8

CARTRIDGE FAUCETS

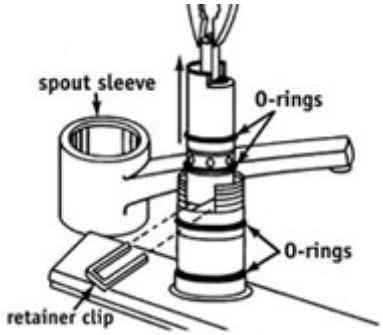


FIG. 6 - To take apart a cartridge faucet, remove the spout sleeve and retainer clip, and lift out the cartridge.

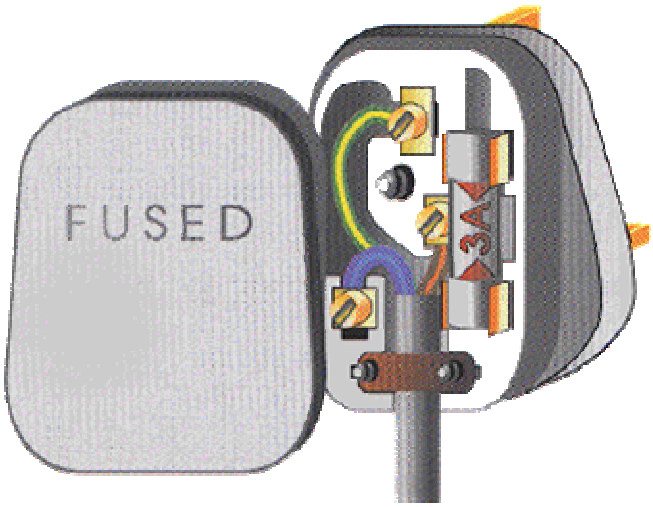
- Cartridge faucets have only one moving part. The stem slides up and down to open and close the faucet and rotates to regulate the flow of hot and cold water. Any leaking requires replacement of the cartridge.

- First, turn off the water. To remove the cartridge, you'll need to remove the handle. This project can be like working a puzzle. If you have the manufacturer's instruction sheet for the faucet, you're ahead of the game. Without it, look for a retainer clip at the rear of the faucet just below the handle. Or, you may have to remove a set screw or snap-in "hot-cold" button and a handle pin or screw. On some faucets the swing spout must come off first. The retainer clip may be hiding beneath the handle inside a lift-out tube. Some cartridge faucets use two retainer clips–one by the handle and another by the cartridge. Retainer clips can be pried out with a screwdriver.

- Once the retainer clip is removed, the cartridge simply pulls out. Use pliers, as shown in Fig. 6. Install the new cartridge by pushing it into place with the flat arrow, or other mark upward. If you use a lubricant on the cartridge, make sure it's silicone grease.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

How to wire a plug



Wiring a plug is not difficult but you would be surprised how often people get it wrong. They put themselves and their families at risk from *electric shock* or fire by not following **six** simple rules:

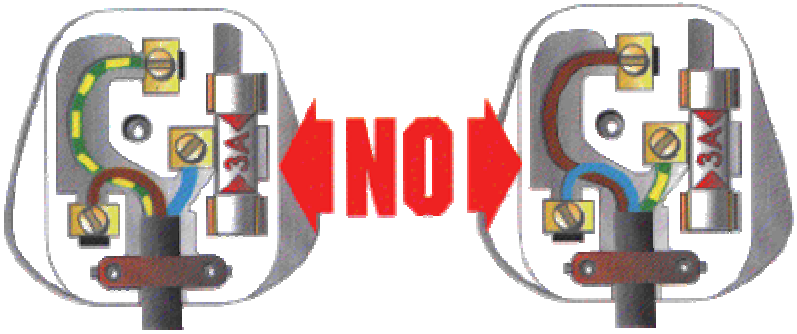
1. Strip off the outer cable sheathing to expose 4cm of the insulated wires. Remove the insulation to leave about 1cm of exposed metal core on each wire. Twist the strands of wire together neatly.
2. Connect the wires to the correct terminals. The brown Live wire to the terminal on the fuse holder marked **L**, the blue Neutral wire to the terminal marked **N** and the green and yellow Earth wire to the terminal at the top of the plug marked **E** or ⏚.

   Some appliances do not have an earth wire because they are double insulated and have no exposed metal parts - marked ⧈

3. Depending on the design of the plug, fit the exposed metal core of each wire through or around each terminal and tighten the terminal screws. Ensure that the insulation reaches right up to each terminal and that there are no loose strands of wire.
4. Fit the flex firmly into the cord-grip making sure that the grip fastens on the outer insulating sleeve of the flex.
5. Read the instructions on the appliance to see what rating of fuse is required and fir the correct fuse in the plug
6. Fit the plug cover - make sure that none of the outer insulation is cracked or chipped.

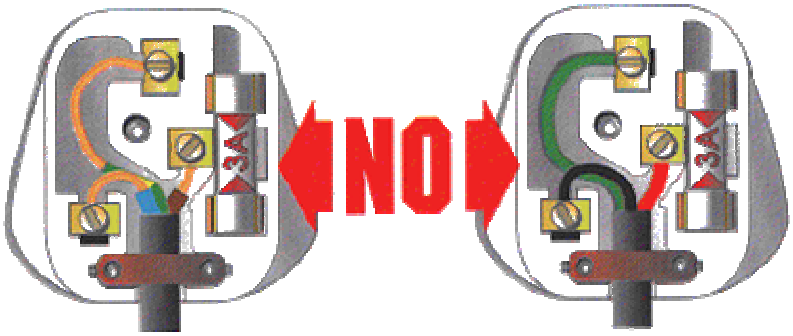
Plug errors - check you have not made any of these!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



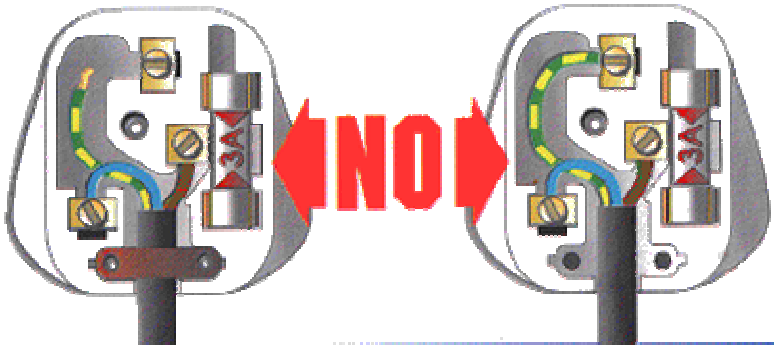
Blue wire connected to the Live terminal. What's wrong with this?

Green and Yellow cable connected to Live terminal. Any problems with this?



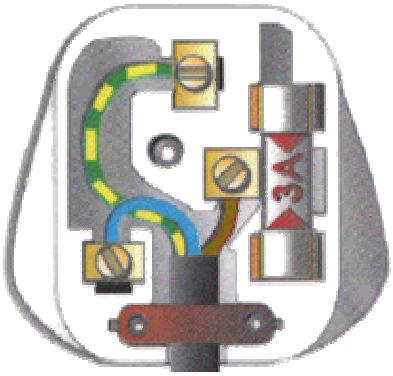
Plenty of bare wire here - but the plug is connected correctly - isn't it?

These are the old wiring colours but they are connected properly



The earth wire is not connected, but the appliance will work won't it?

Perfectly wired, no problem. Is something missing?



A correctly wired plug

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Always make sure that your plugs are wired and fused correctly. If in douAngliaCampus, always check with a qualified electrician.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

INDOOR LIGHTING

SKILL LEVEL

Basic DIY skills are needed to install the new wiring. Connecting things up takes electrical skills and technical knowledge, so if you are in any doubt, employ an electrician.

SAFETY FIRST

Always ensure that the power supply is switched off before starting any work on your home's lighting circuits. It is not sufficient to turn off individual light switches. These instructions comply with the requirements of the current IEE wiring regulations.

INTRODUCTION

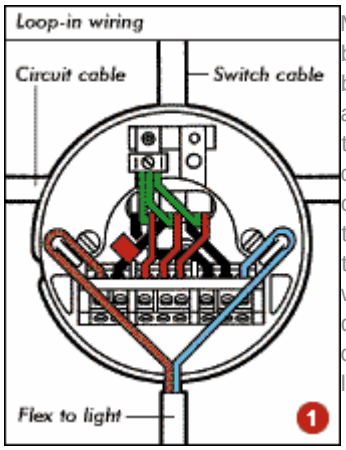
Get more from your indoor lighting by replacing old lights, installing some extra ones and putting in a dimmer switch or two.

Many homes still have only the most basic indoor lighting, with a central pendant lamp-holder or some other type of ceiling-mounted light fitting in each room, plus a plugged-in table lamp or two for extra task or background lighting.

Putting up new light fittings in place of what you have can make a big difference to the way a room looks. So can adding extra lights and replacing existing on-off switches with dimmer switches.

2 - Check out your system

Before you start changing the light fittings you already have, or planning where to install new ones, take a little time to examine your lighting-circuit wiring so you are aware of what is involved in working on it. Turn off the power to each circuit at the fuse box or consumer unit, then unscrew the cover on one or two ceiling roses.



Modern ceiling roses have a bank of terminals on their baseplates, and there will be at least two and probably three cables present (1). The circuit cable loops into and out of each rose in turn, terminating at the last rose of the circuit. A switch cable is wired into each rose and runs down to the switch that controls it. This is known as loop-in wiring.

Older roses have just one cable present, and are supplied from a junction box close by in the ceiling void into which

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

the switch cable is also connected. This is known as junction-box wiring.

You may find that some modern roses have only one cable present; they are also supplied from a junction box, usually to save on long cable runs if the rose and its switch are a long way apart.

Make sure that the lighting circuit cable has an earth core. The circuits in older houses were wired up using cable with no earth core, and one will have to be added if this is found to be the case - a job for a professional electrician. If you find old cable with rubber sheathing, do not touch it. It is probably brittle and dangerous, and needs replacing - again by an electrician.

3 - Replace a ceiling rose

Ceiling roses and their pendant lampholders discolour in time, as does the flex linking them. It is a simple job to replace an old rose with a smart new one.

You can buy complete pendant sets with the flex and lampholder already connected up. Alternatively, you could consider fitting a plug-in rose (called a luminaire support coupler or LSC). With this type, you can unplug the flex and lampholder from the rose for cleaning or when you are redecorating the room.

With the power off, unscrew the cover of the rose you want to replace. If you have loop-in wiring and more than one cable is present, identify the switch cable; it is the one with its black core running to the same terminal as the brown flex core. Mark its sheath with an S and wrap some red PVC tape round its black core to show that it is live. Then disconnect the pendant flex from the rose terminals and set it aside.

Disconnect the cable cores from their terminals. Undo the screws securing the rose to the ceiling and take it down. Press out one of the weakened areas (called knockouts) from the baseplate of the new rose or LSC, feed the cables through it and screw it to the ceiling.

Reconnect the cable cores to the terminals on the new baseplate. These will probably be labelled for identification. Connect all the red cores to the terminal marked LOOP. Connect the switch cable's black core to the terminal marked LINE, and the other black cores to the terminal marked N. All the earth cores, which should be covered with green/yellow PVC sleeving, go to the earth terminal.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

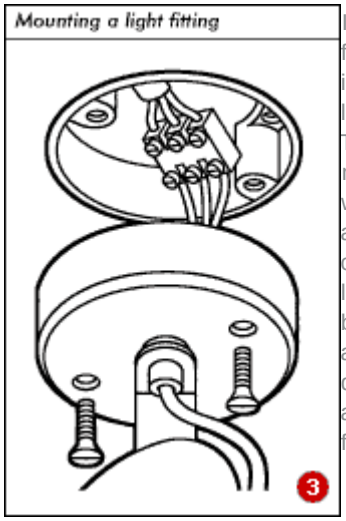
The pendant flex will already be connected to the baseplate of a pendant set, so screw up the rose cover. Insert the LSC plug in its baseplate and fit its cover.

4 - Install a new light fitting

You may want to put up a new light fitting in place of a ceiling rose. What this involves depends on whether you have loop-in or junction-box wiring, and on whether the new light fitting has an internal terminal block or is connected to the circuit wiring with a short flex tail.

Turn off the power and disconnect the old rose, as described previously. Label the switch cable.

If you have junction-box wiring and the new light fitting has a terminal block (most fluorescent fittings, for example), feed the cable through the entry point in the baseplate and screw the baseplate to the ceiling. Then connect the cable to the terminal block and fit the bulb or tube. Add the diffuser and restore the power.



If the new light fitting has a flex tail, you have to use insulated strip connectors to link this to the circuit wiring. The connection must be made inside an enclosure which is formed by recessing a round conduit box into the ceiling and then mounting the light fitting immediately below it (3). You will need access to the ceiling void to do this - easy if there is a loft above, but involving lifting floorboards otherwise.

Draw the cable(s) that supplied the old rose up into the ceiling void, out of harm's way. The rose was probably screwed to a joist, so push a bradawl through the ceiling from above to indicate where it is.

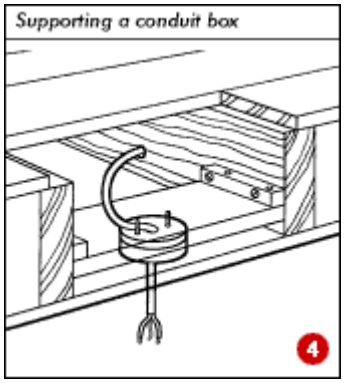
Then hold the conduit box (you need the type with rear knockouts but no spout) against the ceiling from below, clear of the joist position, and draw a line round it. Insert the tip of your padsaw in the cable hole, cut out to the line and then saw carefully round it. Remove the waste.

Remove a knockout from the base of the conduit box, and

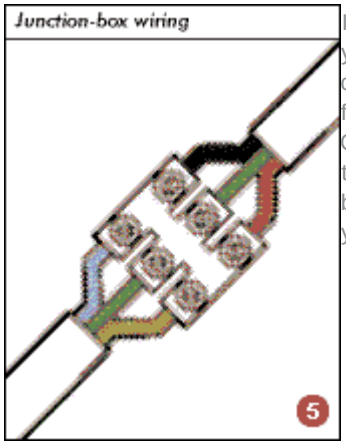
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

push it up into the hole so its rim is flush with the ceiling. If it is a loose fit, hold it temporarily in place with masking tape. Then gain access to the ceiling void. Cut a piece of wood or board to length to fit between the joists above the conduit box, and screw batten scraps to each end of it. Rest it on top of the conduit box and drive screws through the battens into the joist sides.

Go downstairs and screw the box to the underside of the board from below. Then drill a 18mm diameter hole up through the knockout you removed earlier to create an entry point for the cable(s).



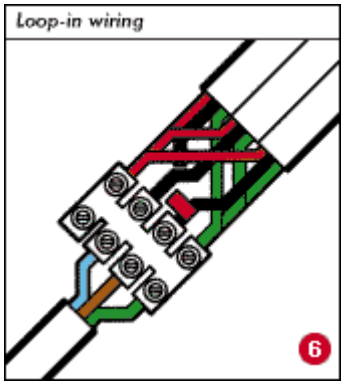
Feed the cable(s) down through the hole and into the conduit box (4).



If only one cable is present, you need three strip connectors to link it to the flex tail from the light fitting. Connect the red cable core to the brown flex core, black to blue and earth (green-and-yellow) to earth (5).

If more than one cable is present, indicating loop-in wiring, then four connectors will be needed to allow the connections in the original rose to be reproduced.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



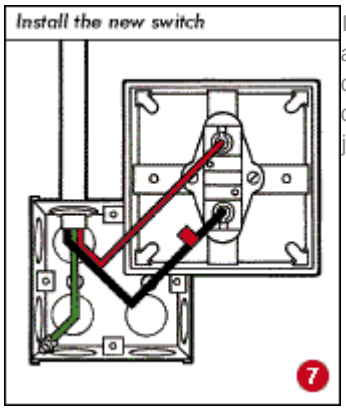
(6). Start by connecting all the cable earth cores to connector 1, the black core of the switch cable to connector 2, the other black cores to connector 3 and all the red cores to connector 4. Connect in the flex next, taking the earth core to connector 1, the brown to connector 2 and the blue to connector 3.

With the connections made, all that remains is to attach the light fitting to the ceiling. If it has a baseplate with screw holes at 51mm centres, you can secure it to the threaded lugs at each side of the conduit box with M4 (4mm) machine screws. Otherwise, use woodscrews long enough to pass through the ceiling and into the board that supports the conduit box.

5 - Extend a lighting circuit

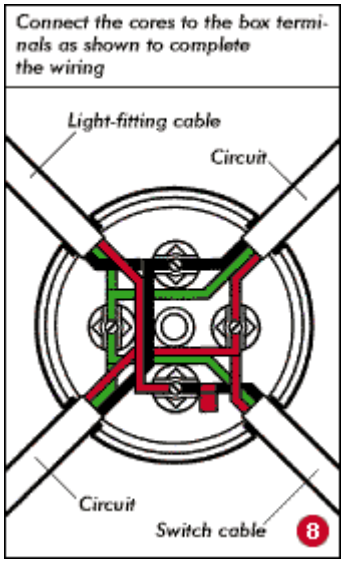
If you want a ceiling light at a new position, you will have to extend the lighting circuit with a spur cable to supply it, so once again you will need access to the ceiling void. That will enable you to decide where to make the connection into the existing circuit. You can connect your spur to the circuit in several ways, but the most straightforward is to use a four-terminal junction box connected into the circuit cable at a convenient point.

Turn the power off, locate the lighting-circuit cable and cut it. Remove some sheath from each cut cable end, strip the cores and reconnect them to the new junction box.



Install the new light fitting and its switch (7). Then run a cable back from each component to the new junction box.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Connect the cores to the box terminals as shown to complete the wiring (8), screw the box to a joist and fit its cover. Restore the power and test the operation of the light.

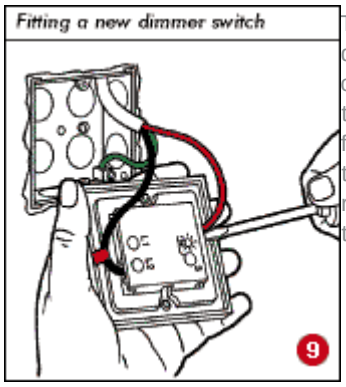
6 - Fit a dimmer swich

Dimmer switches allow you to control the brightness of your lights, from full on down to the barest glimmer, so they offer you the chance to create subtle mood-lighting effects. You can fit them in place of the existing plateswitches, but there are a couple of points you must check before you buy.

First find out the wattage of the light (or lights) the dimmer switch will be controlling. Each switch has a maximum and minimum wattage rating, so you need to choose one that can handle your wattage.

Next check whether the plateswitch you are replacing has one or two switches (called gangs in the trade), so you can buy a one-gang or two-gang dimmer as required.

Lastly, with the power off, undo the fixing screws holding the plateswitch you are replacing to its mounting box. Lift the switch away gently so you can measure its depth. Some dimmers need a box 25mm deep, while many plateswitches fit on shallower boxes. Buy a dimmer to suit the box depth.



To fit the new dimmer switch, disconnect the switch cable cores from the terminals on the old plateswitch. Then follow the instructions with the dimmer switch to reconnect them to the correct terminals (9).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If the dimmer switch has a metallic faceplate and is on a flush metal mounting box, you must link the earth terminals on each component with a so-called flying earth. Take a short length of earth core from a cable offcut, cover it with PVC sleeving and connect it to the two terminals. Then fold the cable neatly back into the mounting box and attach the faceplate to it.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

In-Ground POOL

Building an in-ground pool can be a rewarding experience, and less daunting than you first imagine. Swimming pools today are manufactured from a variety of materials, and (some) are engineered to be almost *easy* to install. We will not cover building a concrete pool because a homeowner generally will not be able to install a concrete pool as it requires knowledge and tools beyond the scope of most homeowners. Our project is a vinyl liner pool with cement bottom and structural plastic walls. The walls of today's pools are made of various materials that are assembled like a giant erector set. The pool manufacturers make the sides from aluminum, galvanized steel, plastic, and fiberglass. All of these materials are acceptable.

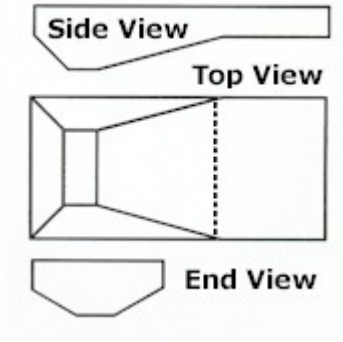
Step 1: Determine the answer to a variety of questions before you start. (see last pages for a discussion of these points and others)

- Pool location.
- How much fall the land has within the pool area.
- How deep you want your diving end to be.
- How high out of the ground the finished pool deck be.
- Local building code and permit requirements.

Step 2: Mark off the outline of the pool with stakes and string so that you can do fine tuning of final pool placement. Call for underground utilities to be marked (free service) so that you will not dig or trench through a buried cable or line. Secure your building permit. Determine supplier of pool and purchase pool kit, liner, Portland cement, vermiculite and all necessary supplies such as sliding board, pool vacuum etc. (These will be covered later)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Step 3: On the big day...start digging in the deep end. The pattern of the dig follows the diagram below. (which is a top, side and end view of the pool)



Step 4: The pool kit you purchase will provide the measurements for the final size of the pool bottom and sides. You will aim to **over dig** the sides of the pool approximately 24" bigger than your outline marked on the ground when you started. This provides working room for the panels, room for the panel braces shown in the picture to the right, and is where the concrete footer is poured that holds the bottom of the panel and panel braces.

Note: Our project in the photographs is a 6' deep Grecian style pool which has clipped corners. This changes the deep end bottom shape from that shown in our rectangular pool drawings above.

You will dig down **42"** for the pool walls and shallow end depth. The deep end is further excavated as shown in the picture on left. There is a 2' wide **shelf** outside the deep end as shown in both the picture and the drawing above it. The pool walls sit on the edge of this shelf and are held in place by 24" rebar stakes driven through the bottom.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

After excavation is complete it is time to clean up the rough excavation and start assembling and placing the panels. Clean up the rough edges and make the 42" shelf and shallow end level and straight using a transit/builders level, and tape measure. Make sure the shelf and shallow end bottom are **level and flat**, as this is what the panels will sit on. If this shelf and pool bottom are 1" out of level, then your final pool will be 1" out when you are finished.

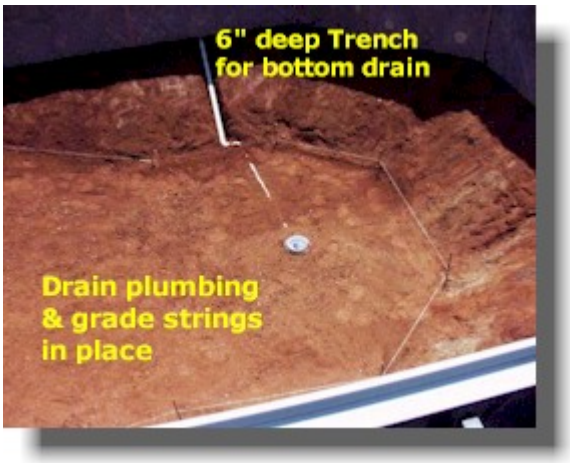
Step 5: Install panels. Use 2' long, 1/2" thick rebar as stakes through bottom of panels into ground to hold panels in place. Use spikes and string to make outline of pool for guide in assembling panels.

Step9: While preparing the bottom in step 8, also dig out for the bottom drain in the center of the deep end diving well as shown in various pictures. Make the drain box 2" above the excavation level of the soil.

Step 6: After your satisfied the pool panels are level (you can shim up low spots with pieces of brick or block) then run string along the top of straight runs and adjust wall braces to make the top straight.

Step 7: Cut and install coping. This also helps keep long runs of wall straight.

Step 8: Prepare bottom for cement mix. Run strings along all bottom angle lines in the dirt as shown in photo above. Place the strings on large nails or spikes in the soil, following the final measurements you want your pool bottom to be. (these are the liner measurements provided by the pool kit supplier.) Now make sure there is 2" space below these strings. This is for the 2" of cement mixture you will be adding to make the bottom.



Step 10: Time to install your plumbing. Run 1 1/2" PVC plumbing lines. You will have 3 lines from the filter to the pool.

1. Wall line to pool (1 line, 2 wall outlets)
2. Bottom drain line
3. Skimmer return line

Your skimmer should be in the deep end (on the side), and if there are prevailing winds, it should be downwind so floating debris is helped toward the skimmer. Water return lines to pool should be located at opposite end of

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

pool from skimmer.

Step 11 Pour footer concrete. The footer locks the bottom of the wall brace (which by design locks the top of the wall) and the bottom of the wall in place. Depending on vehicle access, and how much you want to "pull" concrete, you may find a loader helpful in placing the concrete in the footer cavity as shown in our pictures. The footer should be 6-8 inches thick.

Note: In-the-wall steps are a popular feature and will replace some panels in your pool wall. They need to be supported underneath as shown in the instructions that come with them.

As shown in the pictures you can run your plumbing lines through the wall braces for support. Simply drill your inlet holes through the pool wall at approximately the height of the middle horizontal support on the wall braces. This way the PVC piping can sit on the braces until it takes the turn away from the pool toward the filter.

Step 12: Work begins on the bottom. This is easier than it looks. The bottom of a pool is not as flat as sidewalks and patios, so most homeowners can trowel out an acceptable 2" thick bottom finish.

Rent a mortar mixer (the largest one they have!) The mix ratio is 1 large bag of vermiculite (50lbs) to 94lb bag of Portland Cement, and 10 gallons of water. Vary these measurements to suit your needs, as you may need less or more water. Also, you will have to cut these measurements in smaller increments as mortar mixers cannot hold the batch size described above.

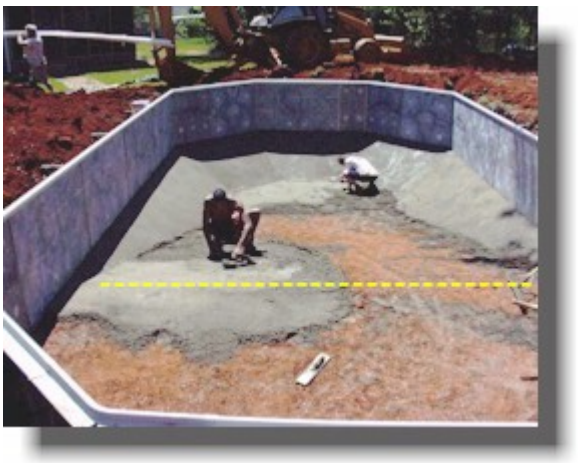
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Start placing and finishing the 2" cement mixture at the deep end as shown. Start at the top of the diving well slopes, working your way toward the bottom drain. Use a wood or metal concrete finishing tool. The correct finish is smooth and flat....not beautiful.

Remove the grade nails and strings as you finish an area. Work your way out of the deep end toward the shallow end.

The cement mixture with the correct moisture content will look relatively dry when compared to concrete.

Note: Any pool building supplies that are not available from the supplier of the pool such as vermiculite, can be purchased locally from a pool contracting company. Portland cement and PVC plumbing lines are available at home centers, and building material stores.



If you have in-the-wall steps, curve the cement bottom up on the plastic front piece of the step unit with a 2" radius. In other words add extra cement where the step unit meets the bottom, and smooth it up the front wall of the step unit 2". The vinyl liner has trouble stretching into this bottom corner of the pool, so it is being filled in.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Step 13: Installing the liner is next. Your pool will probably be backfilled by this step. (unlike these pictures)

When you order the liner you will provide the critical measurements shown on our discussion page, and any other measurements they ask for. Normally each liner is custom made for each pool after the exact measurements are known. This allows you to have small variations in your actual layout.

Start at the deep end and pull out the entire liner. Align the liner by lining up a seam in the vinyl with the appropriate wall panel seam, and start hooking the top of the liner in the grove in the coping.

Pool kits and liner information:

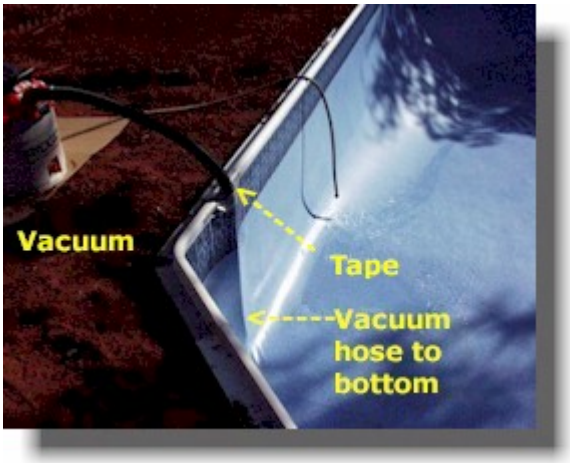
You can find many choices on the internet for your pool kits, filters and vinyl liners. Here is one:

WaterWarehouse.com

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

After the liner is hooked in to the top, kick out wrinkles and tuck into corners as shown. The boxes used are the box the liner was shipped in. They aid in tucking the liner into the corners. The liner will look small during this step. It stretches considerably after water is added.

Notice how the liner spans over the walk out steps opening. This is left this way until you have 8" of water in the shallow end, then screw on the flange and cut the liner out of the step well.



Open up a small section of the liner at the top and insert shop vacuum as shown. Vacuum hose should reach to bottom of pool. Duck tape closed the liner/hose opening. Turn on vacuum and it will pull the liner tighter to the sides of the pool. Smooth out any wrinkles. Vacuum should run until their is 8" of water in the shallow end.

Start filling pool. When there is 2" of water in the deep end, smooth any wrinkles, screw on bottom drain collar, and cut out liner from center of drain box. Place top on drain.

Notice in picture at right that your concrete deck will sit on top of the wall and be supported 18" out by the top of the wall braces.

Also notice the location of the extra cement placed under the liner at the bottom of the step unit during the bottom cementing step described on the previous page.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

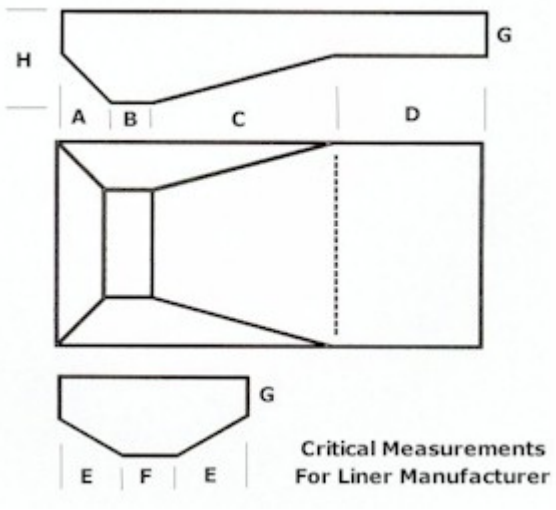
Swimming Pool Discussion

- Starting out correctly is very important...so do your homework. Determine the answers to the questions listed on page one of this article. Look for problems with your site such as drainage, or rock that may impact excavation.
- You can save about 50% by doing this job yourself over hiring it out to a swimming pool contractor. You can save about 150% over building a gunite/concrete pool.
- Contrary to popular opinion, when you sell your house, whether you have a vinyl liner pool or a concrete pool will make very little difference in the final outcome. Vinyl liner pools need a new liner every 8-10 years (at $800-$1600) and gunite pools need to be re-plastered every 10 years because the final coating of cement is etched away by the pool chemicals. (cost $1200-$1600). Besides, after you tell prospective home buyers your pool has a cement bottom and polymer sides under the liner, most concerns end there.
- A good rule of thumb is to put the top of the pool 6" above the highest point on your ground surrounding the pool.
- Find a good back hoe operator. You can try to hire the machine operator from swimming pool contractors and see if they will dig on nights or weekends privately for you. Another source of good machine operators will be septic system installers. You want someone who is on their machine daily. He will need a builders level/transit for determining that the excavation is level.
- Be ready for a mess. It does not matter whether you hire out the entire job, or do the entire job yourself, your back yard will look like a bomb went off in it!
- Plan on renting a skid loader (bobcat) for backfilling the pool walls and rough landscaping and grading in preparation for concrete pool deck.
- Plan on renting a 4 wheel drive tractor with grader box and stone rake for final landscaping and seed preparation.
- Polymer sided pools are excellent, and by far the most common. Do not believe just about any negative comment you read in competitive literature about polymer sides on in-ground pools.
- Galvanized steel sided pools are acceptable however future buyers of your home may question the longevity of steel, and it may raise questions...even though they are unwarranted. (With today's galvanizing processes...rust is not an issue)
- Fiberglas is hard to find and tends to be brittle.
- Aluminum is expensive, but probably the highest quality.
- Line up all your subcontractors ahead of time. If you use a standard concrete finisher in place of one for swimming pools, you will save between $.75-$1.00 per sq ft on the job.
- Fencing is an issue you will need to check with your local building code department about.
- For coping, buy the biggest and most expensive coping they offer for your pool. It holds the walls straighter, and the difference in cost is well worth it. Ask the supplier if they have a good, better and best selection in coping.
- The pool bottom will be a Portland cement and vermiculite mixture. This will harden to a softer surface than concrete, and is smoother and causes less wear on the vinyl liner.
- Add extra cement at the bottom of in the wall steps as described in the article.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Select Pump/Filter location based on proximity to pool and source of electricity. Your pump/filter should not be excessively far from pool just to be close to electricity source. Pump and filter should be 30' or less from pool.
- Pool kits, filters and liners are available on the internet at discounted prices. Here is one source...see if you can beat the offering here! WaterWarehouse.com
- You can make the deep end of your pool 6' or 8' deep, because the liner is going to be made to your specifications, for your pool. A 6' deep pool allows diving but no diving board.

Critical measurements your vinyl liner manufacturer will need.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

INSTALL A FIREPLACE

SKILL LEVEL

The way that modern surrounds are constructed makes installing one a very simple job that anyone can undertake successfully.

SAFETY FIRST

If you are installing a gas fire in a fireplace, it must be installed by a member of CORGI (Confederation of Registered Gas Installers). For further information contact: Gas Service Agents - Tel 0906 8517651.

INTRODUCTION

A fireplace is the focal point of a room and there are now so many wonderful surrounds available that you can't fail to create an eye-catching feature.

Even if you don't like an existing fireplace surround, someone else may do; so remove it carefully and put any money you get for it towards the cost of your new surround.

Your brand-new surround can be further enhanced by having a companion set comprising brush, tongs and shovel, plus a coal hod and a firescreen.

2 - Removing an old fireplace

Before removing an old fireplace, or if you are going to open up a chimney to have a new fire (solid fuel, gas or electric ornamental), have the chimney swept and tested. Contact a professional chimney sweep through your Yellow Pages.

Unless the room has been emptied for complete redecoration, roll back the carpet and cover any furniture that has to remain with dust sheets - there can be a lot of dust created.

If there is an old fireplace surround and hearth to remove, be very careful, since a cast-iron, brick or stone type is very heavy, and you will need help lowering it to the floor.

Due to its weight, you might have to allow a surround to fall. To help prevent any damage, pile some cushions and pillows on the floor in front of the hearth and cover them with dust sheets. Take care to stand clear.

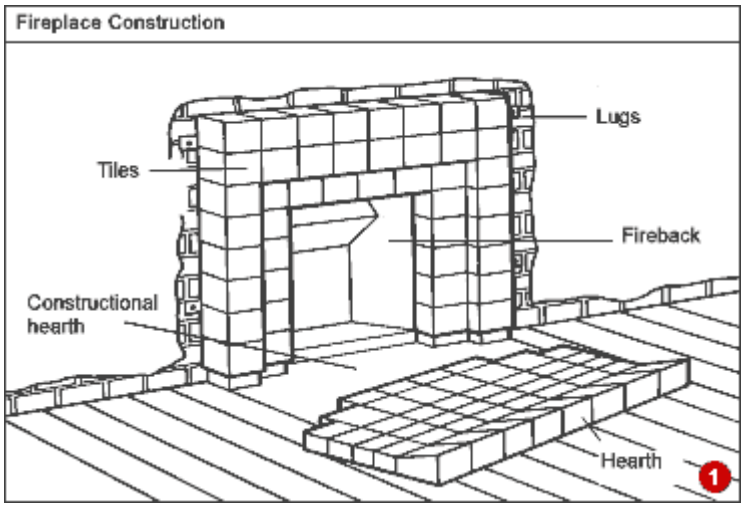
You will probably need to use a bolster chisel and club hammer when removing a surround. Be sure to wear a face mask, safety spectacles and gloves.

Usually the hearth will have been laid after the surround was

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

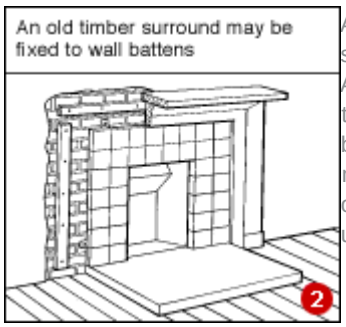
fitted. It is laid on a bed of mortar, so chisel away around the underside until you are able to get a crowbar or garden spade underneath, then lever upwards to free the hearth from the mortar bed. Remember, it will be heavy so have help on hand.

Below the hearth will be a layer of concrete which is level with the floorboards. This is the constructional hearth and can remain in place and be covered by a new hearth or floorcovering (1). If it needs to be smoothed, use a self-levelling compound; this is simply poured on to the floor, smoothed out with a trowel and left to dry to a level finish. Sometimes the hearth will comprise a layer of tiles level with the floorboards. These can remain in place or be lifted with the bolster chisel and club hammer.

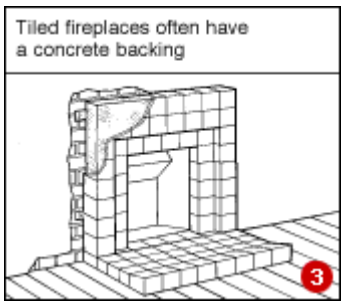


A fireplace surround will be held to the wall with screws driven through metal lugs. The lugs - there may be one or two on each side - will be buried in the wall plaster (1). To locate them, chip away an inch or so of plaster all around the edge, using the cold chisel and club hammer. This will reveal the screws which can be removed. They may, however, be rusted in and need to have the heads drilled off to free the lugs. The surround can now be lowered to the floor - remember it will be heavy.

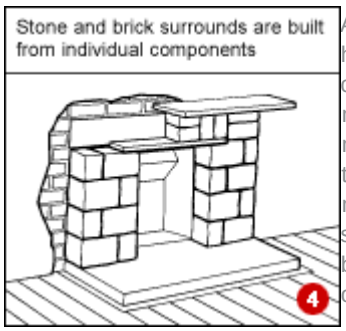
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



A wooden surround may be screwed to wood battens (2). Again, it's a matter of locating the screws which will be hidden behind wood plugs or filler. You may have to strip off any paint or varnish to locate the filler used to conceal the screw heads.



A tiled surround will have a concrete backing which will be fixed to the wall through lugs (3).



A stone or brick surround will have been built with individual components held together with mortar (4). Chip away the mortar bit by bit, starting with the top course. Sometimes there may be metal wall ties linking some mortar courses to the wall behind. These can be chipped out of the wall.

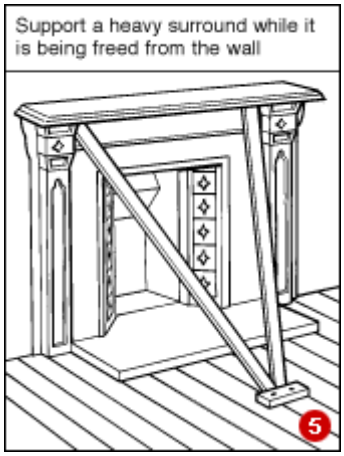
With the fireplace surround removed, you may be faced with a fireback. This will be in two sections and can be removed, top half first, followed by the lower portion using the bolster and club hammer.

Remaining in the hearth will be some rubble used as a backing for the fireback; remove all the rubble to leave a rectangular brick opening ready for your new gas or electric fire, fireplace surround and hearth. Depending on the condition of the brickwork in the opening, you may want to keep it or cover it over with a new facing of brick or stone as a feature, or fit a new fireback.

If you are not going to resell the fireplace, then break it up 'in situ' to make its removal easier. Cover it with old blankets before dismantling it with a club hammer. This prevents pieces of hardcore flying around dangerously - again, wear appropriate

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

safety equipment.



It is worth supporting a heavy surround while it is being freed from the wall (5).

3 - A new surround for a modern decorative fire

There is a vast array of fireplace surrounds, back panels (eg tiled inserts) and hearths which are interchangeable so you can mix and match to get the precise effect you want. Surrounds come in such materials as marble, pine and mahogany effects.

An electric fire does not need a flue. A gas fire requires a brick chimney, pre-cast flue or a pre-fabricated flue. Where there is no flue and the fire is to be installed on an outside wall, you can install a balanced-flue gas fire contained behind glass, or a rear-fan-flued gas fire which is open-fronted.

If you simply want a surround but no fire, then you could use something such as a dried-flower arrangement to form an eye-catching focal point in the room.

Your local B&Q now have the new flueless gas fires that can be installed on any wall, but they do require a vent constantly open to provide combustion air.

4 - Installing a surround

The new surround will be fixed to the wall using keyhole angle plates and screws.

A surround must not be installed against damp plaster - and plastering must be fully dried out. No lime or cement must come into contact with timber that will be visible on the completion of the installation.

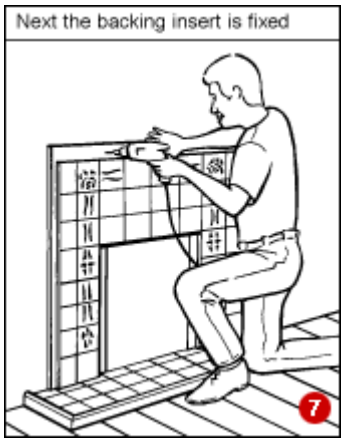
The surround must be fitted centrally around the fireplace

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

opening, so draw guide lines on the wall to ensure that it is correctly positioned and is aligned both horizontally and vertically.

The fireback needs to be removed and the fireplace opening reduced using bricks. Alternatively, simply remove the fireback and keep the wider opening.

First the hearth should be laid centrally in front of the opening (6). Ensure that it is flat on the floor and check with a spirit level that it is horizontal. If necessary, use packing pieces of wood to bring it level.

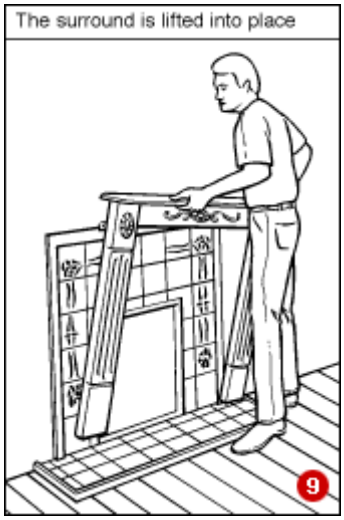


The back panel is usually supplied screwed to a chip-board frame to protect it in transit. The panel is removed from the frame, placed centrally on the hearth and screwed to the wall (7).

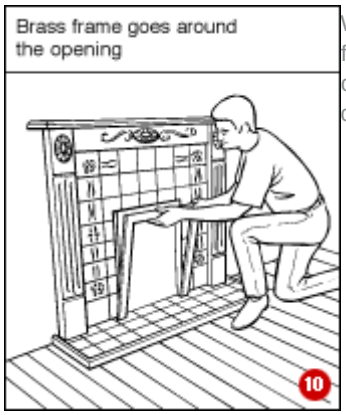
Natural and conglomerate marble back panels cannot be fixed to the wall on a permanent basis. Instead they should be stood vertically against the wall and held in place by the appropriate timber mantel. If you have any difficulty doing this (due to the wall not being square), use a small amount of Unibond No More Nails to fix the panel to the wall until you have the surround in place.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If a timber mantel is being used, this will come in sections and have to be assembled (8).



The assembled mantel is temporarily lifted into place so that the locations of the screw-fixing positions can be marked off (9). The mantel is then removed, and the wall drilled and plugged for the screws. The mantel is then permanently fixed with screws slotted through the keyhole plates.



Where applicable, a brass frame is located around the opening of the back panel to complete the job (10).

5 - Cleaning existing fireplaces

Brick: Use a stiff brush to remove general dust and dirt. If there is heavy soiling, use a brick, stone and concrete cleaner - be careful when using such cleaners as they are caustic. Wear protective clothing and rubber gloves, and ensure the room is well ventilated.

Cast iron: Most grime can be removed with a general household cleaner diluted with hot water, according to manufacturer's instructions. Stubborn patches of soot or tar can

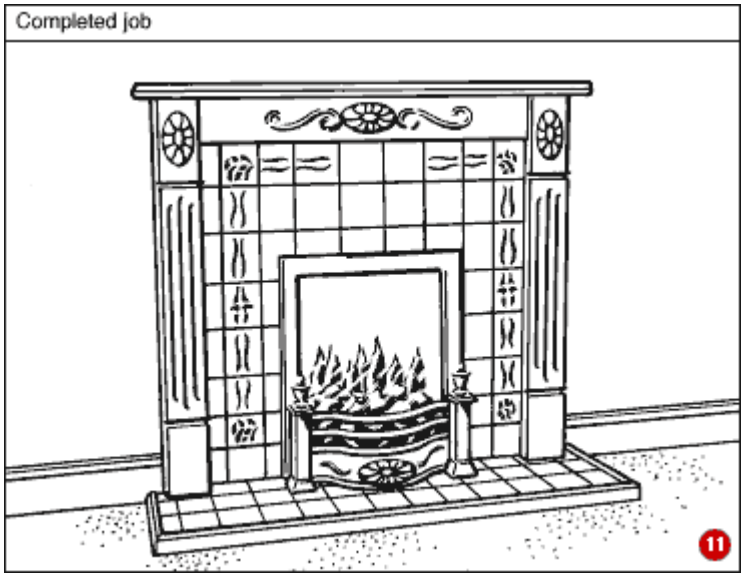
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

be removed with methylated spirit and fine wire wool. Any rust spots can be removed with an emery cloth. To restore the finish, use a coat of heat-proof matt black paint, or black-lead graphite polish.

Ceramic tiles: Wash with sugar soap or household cleaner diluted with hot water - the cleaner must be non-abrasive. A loose tile can be refixed with heat-resistant ceramic tile cement.

Marble: Polished stone surfaces can be washed with soapy water, dried with a chamois leather and shined with a good-quality wax polish. Be careful with the surfaces as they are easily damaged.

Slate and granite: Use a stiff-bristle brush (not a wire brush) to remove deposits from unpolished surfaces, then wash with a liquid detergent in hot water. Only use a caustic cleaner if all else fails.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

INSTALL AN ELECTRIC SHOWER

SKILL LEVEL

The plumbing and wiring involved in installing an electric shower requires sound basic skills in both areas of expertise.

SAFETY FIRST

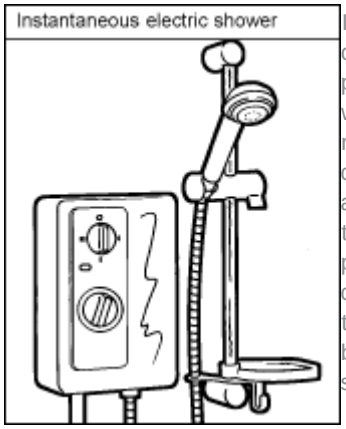
Ensure that wiring and plumbing are properly installed. It pays to have a professional electrician connect the wiring at the consumer unit. Always turn off the electricity when making connections to the mains.

INTRODUCTION

Electric showers are economical to run and provide hot water on demand.

Using an electric shower could save you up to a third of the water you would use for a bath and, because a shower heats the water instantaneously, you do not waste energy heating stored water. Electric showers are rated in kilowatts (kW) - the higher the wattage, the better the performance of the shower. An electric shower is relatively easy to install, requiring only a connection to mains electricity and a single cold-water pipe running from the rising main.

2 - Planning the work


Instantaneous electric shower

If you plan to install a shower over an existing bath, your primary consideration is where you can tap into the rising main. The most convenient location is often an airing cupboard close to the bathroom. If that is not possible, make the connection in the loft and run the branch pipe through the bathroom ceiling to the shower.

If you are building a new shower cubicle, you will need to consider drainage:

- The waste pipe must have the correct fall (slope) - this may entail raising the shower tray on a platform.
- When connecting to a two-pipe waste system, you can run the waste pipe to an exterior hopper head. Alternatively, connect the waste pipe to the soil stack of a one-pipe system.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Provide access to the trap beneath the shower tray, or it may become difficult to service a blocked waste pipe.

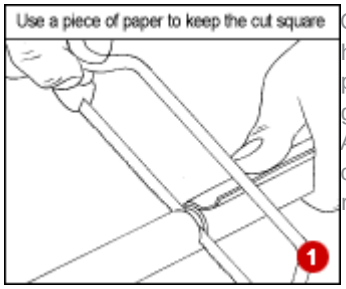
3 - Plumbing

Step 1: Start by mounting the shower unit in the required position. Mark the fixing points using the template supplied by the manufacturer or use the backplate if there is no template.

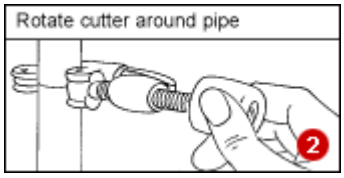
Step 2: Using a power drill fitted with a masonry bit of the appropriate size, drill holes to receive the wall plugs for the mounting screws.

When drilling holes in ceramic tiles, stick a piece of masking tape on the glazed surface to prevent the masonry bit slipping.

Step 3: Before you finally mount the shower unit, cut a piece of 15mm (1/2in) copper pipe long enough to pass through the ceiling or sideways into the airing cupboard. Try to make neat clearance holes through the wall or ceiling to minimise the amount of making good. Connect the pipe to the shower inlet.



Cut copper pipe with a hacksaw - wrap a piece of paper around the pipe as a guide to keep the cut square. Alternatively, use a pipe cutter. File the cut ends to remove burrs.



Ideally pipe runs should be concealed and, in some instances, it may be possible to make the connection at the back of the shower unit so that you can run the pipe into the walls.

- If the wall is a stud partition, it should be possible to run the pipework (and electrical supply) between the studs.
- In a solid masonry wall, you could cut a channel in

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

order to bury the pipe under the plaster. This type of work should be carried out before you fit the shower unit and tile the wall. Use soldered joints in this situation, to minimise the possibility of a leak.

Step 4: Inside the airing cupboard or loft, take the new branch pipe up to the rising main but stop just short of it. Fit a stopcock (not a gate valve) to the end of the branch pipe, with the flow arrow pointing away from the rising main.

Alternatively, fit a miniature isolating valve to the branch pipe, close to the shower unit, so that you can turn off the water for servicing.

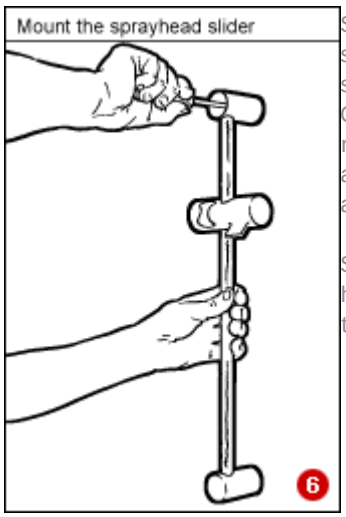
Step 5: Turn off the main stopcock and drain the water from the pipe by opening the kitchen tap.

Step 6: Fit the T-joint onto the rising main and hand-tighten the cap nuts. Measure and cut a short length of pipe to connect the T-joint to the stopcock.

Step 7: Assemble the component parts and tighten the nuts to make watertight joints. Test the plumbing.

Showers connected to the rising main must be protected with a double-check non-return valve fitted to the branch pipe - this prevents dirty water being siphoned from the bath or shower tray into the drinking supply. This applies only if the handset can come into contact with used water. Caution must be exercised when inserting double check valves in the water supply. If unsure, contact a professional plumber.

4 - Fitting the sprayhead



Step 1: Mount the sprayhead slider rail on the wall to one side of the shower unit. Check that there is enough room for the sprayhead to be adjusted up and down to suit all members of the family.

Step 2: Connect the flexible hose to the sprayhead and to the shower unit.

5 - Wiring the shower

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

An instantaneously heating electric shower requires a dedicated radial circuit running from the consumer unit. We recommend that the circuit should include a 30 milliamp Residual Current Device.

Use 10mm two-core-and-earth cable for the circuit, which must be protected with a 40amp Miniature Circuit Breaker (MCB) or a 45amp fuse in the consumer unit. If there is no room in your consumer unit for a new circuit, have an electrician install a separate 45amp switch fuse unit for the shower.

Electrical Wiring Regulations require all non-electrical metal components such as pipes, baths and basins to be connected, one to another, with earthing cable that then runs to the consumer unit where it is connected to the earthing block. For supplementary bonding, as it is called, use 6mm single-core cable, insulated with green/yellow sheathing.

Connect bonding cable to pipework with purpose-made earth clamps and attach it to the special earthing tags on metal baths and basins. Your shower unit must also be bonded to the pipework, using the earth terminal provided in the appliance. Please check the details of your product carefully, as the earth terminals within some showers should not be used for cross bonding.

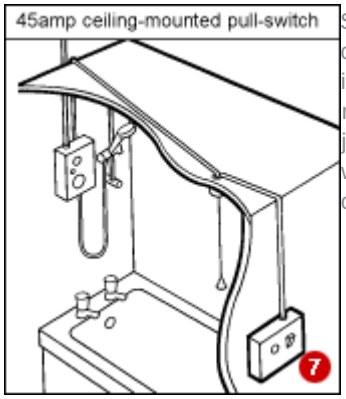
Fitting a pull-switch

Although an electric shower has its own on/off switch, there must be a separate 45amp double-pole switch to isolate the circuit. The isolating switch must be out of reach from anyone using the shower.

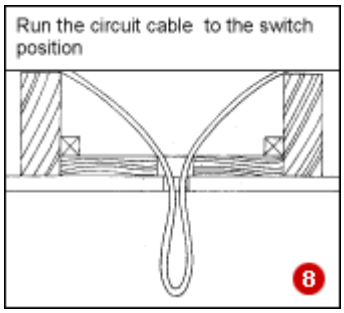
The isolating switch for a shower must have a contact gap of at least 3mm and an indicator, such as a flag which is normally incorporated in the switch to show it is on.

If the isolating switch is to be situated inside the bathroom, use a pull-switch mounted on the ceiling:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Step 1: Make a hole in the ceiling where the pull-switch is to be fitted. Screw a mounting board between the joists above the ceiling on which to fasten the backplate of the switch.



Step 2: Run the circuit cable to the switch position and pass a loop of cable through the hole in the ceiling and mounting board. Then run the cable on to the shower unit.

- You can run electrical cable inside plastic mini-trunking fixed to the surfaces of walls and ceiling.
- Alternatively, bury the cable behind the plaster.
    - One way is to pass the cable down between the studs of a hollow partition wall.
    - For a solid wall, you would have to cut out a channel in which to set the cable. In this case, it is safest to run the cable inside plastic conduit and cover it with plaster ready for tiling.

Step 3: At the switch point, cut the loop of cable and strip the ends of the cable. Fix the backplate of the switch in position. Cover the bare earth wires with green and yellow sleeving and connect them to the 'E' terminal.

Step 4: Connect the wires of the cable from the consumer unit to the 'Mains' terminals of the switch. Connect the wires of the cable to the shower unit of the 'Load' terminals - red to 'L' terminals and black to 'N' terminals.

Step 5: Strip the sheathing from the cable at the shower unit and connect the wires to the terminal block as shown on the instructions - Red 'L' (live), Black 'N' (neutral) and bare 'E' (earth). Cover the bare wires with PVC earth sleeving.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Strip about 100mm (4in) of sheathing from a cable - slit it lengthways, then peel it back and cut off the waste.

Call in an electrician to make the connection to the consumer unit and test the circuit.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

INSTALL GUTTERING

SKILL LEVEL

Care is needed in setting out the guttering accurately, but actually fitting it is relatively easy.

SAFETY FIRST

Before you climb a ladder, make sure it is stable and fixed securely to the structure of the house. Don't allow children to play under ladders or scaffold towers.

INTRODUCTION

Changing your own guttering can be a simple and straightforward exercise when you have the right products and you know how to select the few simple tools required

Two sizes of guttering cover most domestic situations:

- 75mm half-round gutters and 50mm circular downpipes for sheds, greenhouses and small detached garages.
- 112mm half-round gutters and 68mm circular downpipe for houses and large detached garages.

If you live in a large house or in an area of high rainfall, you may need a gutter which has a greater capacity - either 116 x 60mm 'square' guttering (used with 65mm square downpipe) or 120 x 75mm 'ogee' guttering (used with square or round downpipe).

2 - Planning the work

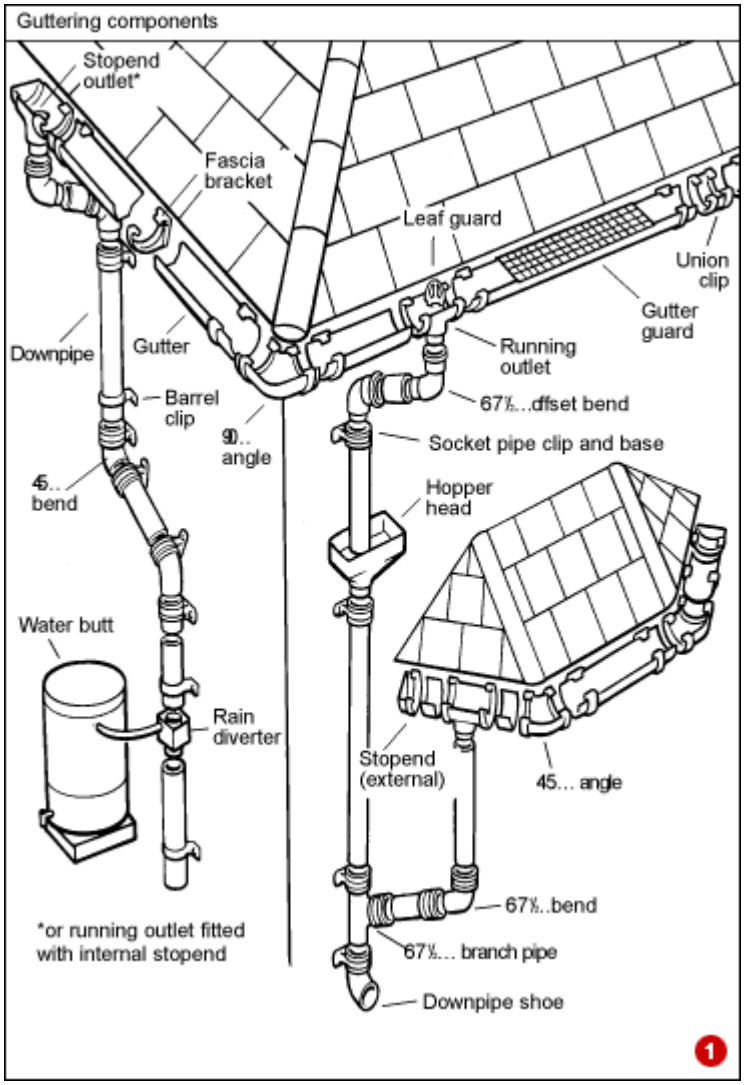
Whether you are planning to replace the entire guttering on a house, or just one side of a garden shed, following these few simple tips will make the job much easier.

Make a sketch plan of the house or outbuilding, and write down all the relevant dimensions. Work in metric units as this is how guttering is sold.

If you have difficulty measuring the height of a house, simply count the number of brick courses from the ground to the eaves and divide the answer by 13 to get the length of downpipe you need in metres.

Work out the lengths of guttering and downpipe you need (different standard lengths of both are available), and fill in a checklist for the necessary components (1).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Some gutter fittings (for example, union clips) need to be fitted with a separate strap to make the joint between the fitting and the gutter (these should be fitted before you start); other types have integral straps.

Fascia brackets should be placed no more then 1m apart; stopend outlets, running outlets, union clips, angles and stopends need a supporting fascia bracket within 150mm of the fitting. Some running outlets, union clips and stopend outlets are designed to be screwed directly to the fascia, but also require support brackets within 150mm.

Some 'ogee' guttering fittings are 'handed' - for internal or external corners or to fit on to the left- or right-hand end of the gutter.

Always over-estimate when ordering. It is better to have too

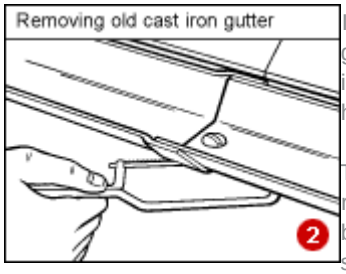
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

much rather than too little.

3 - Remove the old guttering

Unless you are fitting guttering to a new building, you will need to remove the old guttering. Old plastic guttering is simple to remove, but you should take great care with cast-iron guttering as it is extremely heavy, and can have sharp edges. Wear stout gloves to handle it and lower it to the ground with a rope.

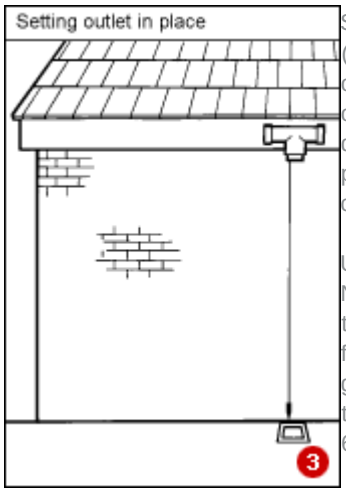
If the screws holding the old gutter or gutter brackets to the fascia have rusted in place, saw through them with a padsaw fitted with a thin metal-cutting blade. To remove brackets secured to the rafters, you may need to lift the edge of the roof covering.



If the bolts holding cast iron guttering together are rusted in place, saw them off with a hacksaw (2).

Take the opportunity to refurbish the existing fascia board, filling all screw holes, stripping off flaking paint and re-painting or re-staining as required.

4 - Fitting the outlet and brackets

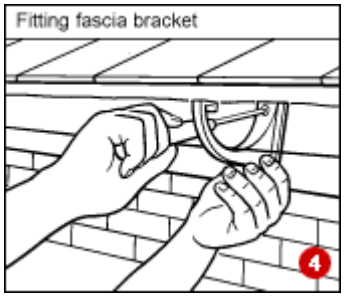


Start by fitting the outlet (running outlet in the middle of a gutter run, stopend outlet at the end of a run) directly over the drain position - use a plumbline to check this (3).

Using 25mm x 5mm (1in x No. 10) screws, fix the outlet to the fascia, allowing for the fact that the far end of the gutter must be higher than the outlet by 10mm for every 6m of gutter (a fall of 1:600).

Now fit the end fascia bracket furthest away from the outlet, allowing for the required 1:600 fall. Check that the fascia board itself is level (it should be) and then use this as a reference line to position the bracket. Repeat with the other end fascia bracket if the outlet is in the middle of the gutter.

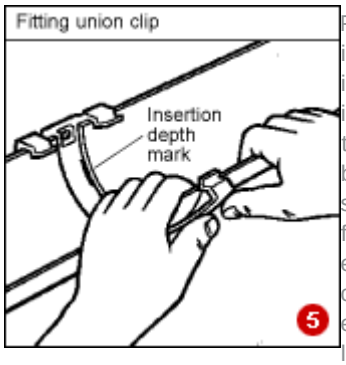
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Tie a string line tightly from the end fascia bracket(s) to the outlet and use this as a guide for installing the remaining fascia brackets, which should be placed no more than 1m apart, working outwards from the outlet. Screw each bracket to the fascia with two or three screws (4).

5 - Installing the gutter

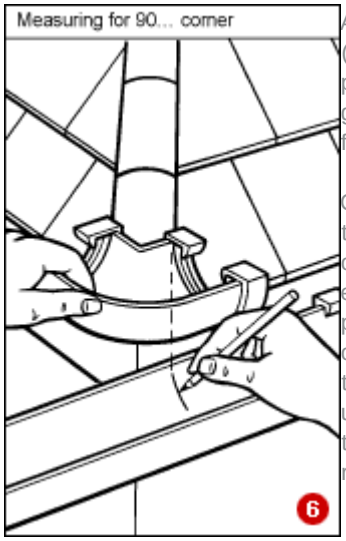
Once all the brackets are in place, you can install the main guttering.



Push the first gutter length into the outlet and then clip it into its fascia brackets. This is done most easily by tilting the gutter to fit under the back clip and then straightening it under the front clip. To allow for expansion in hot weather, care should be taken to ensure the gutter end is in line with the insertion depth mark (5).

All fittings provide for expansion and contraction of the gutter. When installing the gutter, make sure it does not go past the insertion depth mark in the fitting.

Use a union clip to join the first and second lengths. The joint is made by clipping the two ends into the union clip, which is also secured to the fascia with a single screw (5).

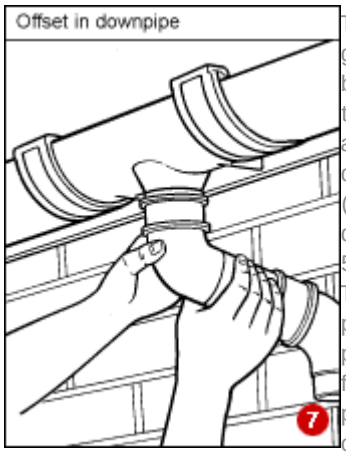


At a corner, hold a 90º angle (or 45º angle for a bay) in place to mark where the gutter is to be cut before you fit the angle (6).

Cut the last length of gutter to the correct size. At the end of the gutter run, fit an external stopend, clipped in place in the same way as outlets, angles and unions. If the new guttering has to join up with an existing gutter, fit the appropriate ogee or half-round adaptor.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

6 - Fitting the downpipe



The distance between the gutter and the wall is bridged by an offset. This consists of two 67.5º offset bends and an appropriate offcut of downpipe cut to size (7), (with 65mm square downpipe, a ready-made 50mm offset is available). The offset bends can be push-fit or solvent-weld; if push-fit, ensure a pipe clip is fitted under the socket on the pipe immediately below the offset. When using solvent cement, follow the safety instructions on the tube.

To keep the cut square, wrap a piece of plain paper round the downpipe at the place to be cut, and use this as a guide for a hacksaw. Clean up the cut edges with a file.

Fit the first length of downpipe with its socket uppermost, securing it to the wall with a socket pipe clip at the top (8) and one-piece barrel clips (where available) for holding the pipe to the wall. For masonry walls, use an electric drill fitted with an appropriate bit to make holes to take wallplugs for the securing screws. The maximum spacing of pipe clips is 1.8m (6ft).

Continue to fit the remainder of the pipe in the same way, fitting the open end of one pipe into the socket of the pipe below, allowing a 10mm gap between the end of the pipe and the bottom of the socket for expansion in warm weather.

Some downpipes are fitted with a hopper head to receive waste from another pipe. Secure the hopper head to the wall. Adaptors are available for square downpipes.

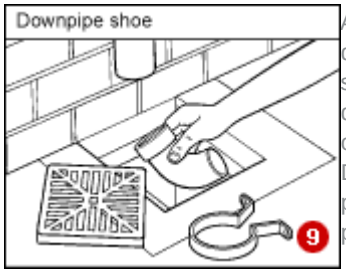
If necessary, the downpipe can be run at an angle across the wall, using pairs of 45º, 67.5º or 87.5º bends. On angled or near-horizontal runs, fit pipe clips every 1m (3ft).

Where the downpipe from a second gutter (around a bay, for example) joins the main downpipe, use a 67.5º branch pipe. If you need to cut both ends of a pipe, fit a loose pipe socket

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

(available with wall-fixing lugs for 65mm square pipe) to the end of the pipe.

With 65mm square and 68mm circular downpipe, you can fit an access branch into the downpipe. This makes future downpipe cleaning easier.



At the bottom of the downpipe, fit a downpipe shoe if the water is to discharge onto a flat surface or into an open gully (9). Downpipe shoes on round pipe need supporting with pipe clips.

For direct connection to the underground drainage, ensure that you have the correct connector (or adaptor for 65mm square pipe); to connect to a back inlet gully, remove the old mortar and replace with fresh mortar with the pipe in place.

7 - Fitting extras

There are extras you can buy for your guttering system, available through B&Q

A gutter guard comes in 10m lengths and is fitted to the top of a gutter to keep leaves out. It simply clips into place once you have cut it to the required width and length.

Similarly, a leaf guard fits into the top of a 68mm circular downpipe and will keep leaves out of the downpipe. It also prevents birds making nests there.

A drain cover keeps leaves out of an open gully. You need to cut a hole in the cover to allow the downpipe to pass through.

A rain diverter allows rainwater to be collected in a water butt - the cunning design allows surplus water to flow down the remainder of the downpipe once the water butt is full. Instructions are supplied: the rain diverter simply fits into a 68mm circular or 65mm square downpipe at an appropriate point, and is connected to the water butt by the flexible pipe supplied. A second water butt can be connected to the first, using a water-butt connector.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Do It Yourself

To print this page, select **File** then **Print** from your browser

URL: http://www.diynet.com/diy/dr_hardware/article/0,2037,DIY_13795_2272687,00.html

Installing a Peephole

From "Ask DIY"
episode ADI-206 -- More Projects »

Q: I'd like to add a little more security to my home. Any quick and easy projects that I can do?

This peephole will give you a 180-degree field of vision from the front door.

A: (Brad Staggs, *Ask DIY* Home Repair expert): You've got to install a peephole in the front door. That should be at the top of your home-security project list. It costs less than 20 bucks in most cases and should take you about 30 minutes to install. Just follow these steps.

Materials:

Purchased peephole
Measuring tape and pencil
Power drill
1/8" bit
Spade bit

Figure A

1. Install the peephole at a height that's convenient for you but still accessible to kids -- 5' from the ground usually works well. Make a pencil mark at the height in the direct center of your door (measure first to be exact).

2. Put on safety eyewear and then drill the hole for the peephole in two steps. First, drill a pilot hole all the way through the door using a 1/8" drill bit (**figure A**).

Figure B

3. To complete the drilling, attach a spade, or "paddle," bit to an electric drill. Drill only halfway through the door, using the pilot hole to get started (**figure B**). Then shut the door and switch the spade bit to the other side to drill completely through. Make sure the drill is nice and level. Drill only half at a time to avoid having the door splinter.

4. Place the two parts of the peephole mechanism in the hole in the door, making sure that the proper piece is facing out. Thread them together and hand-tighten the connection with one of your arms on each side of the door.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

More Questions for Brad:

Q: I'm selling my home, and I'd like to increase its value. What can I do to improve the exterior of the house on a budget?

A: To improve the "curb appeal" of your home and still stay on a budget, consider planting flowers around the walkway, painting the exterior trim, or hanging something like a porch swing -- something that will make people notice your house.

Q: I've heard that salting my walkways will damage them. Is this true?

A: If you leave it on there too long, salt will damage the concrete. So sweep it off as soon as you can. Also, look into the new mixtures out there that are designed to melt the ice without damaging your concrete.

Q: I have a draft coming in under my front door. What should I do?

A: You probably need to install a doorsweep at the bottom of your door. You can buy one in the weatherproofing section of your home store, and it screws on.

Books:

Big Book of Easy Home Repair
By Time-Life Books
ISBN: 0783549148
Time-Life Books Inc.
2000 Duke St.
Alexandria, VA 22314
Phone: 703-838-7233
Fax: 703-518-4127

Home Repair Handbook
By Sunset Books
ISBN: 0376012587
Sunset Publishing Company (1999)
Division of Time-Warner
80 Willow Rd.
Menlo, CA 94020
Phone: 650-321-3600
Fax: 650-322-1043

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- **ALSO IN THIS EPISODE:**

Quick Tip: Upper-Body Fitness
Installing a Peephole
Fabric Headboard
Obedience Training
Formal Dinner
Miniature English Garden
Photo Collage Transfer

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Do It Yourself

To print this page, select **File** then **Print** from your browser

URL: http://www.diynet.com/diy/dr_repair/article/0,2037,DIY_13800_2276826,00.html

Installing a Pre-Hung Door

From "Ask DIY"
episode ADI-602 -- More Projects »

Q:The door to my laundry room is in pretty bad shape. Painting it won't help because some of the wood is cracking and falling off. How do I replace the door?

Figure A

A: (James Young, DIY Home Improvement expert) Replacing a door is not that difficult, so you may want to start from scratch by pulling the whole door out and reinstalling a **pre-hung door**.

If you want to replace only the door -- using an ordinary slab-door -- keep in mind that you may have to mortise the door and hinges, and you may also have to make holes for your doorknobs. Installing a pre-hung door is probably simpler. These may cost a little more, but they're much simpler to install. Here's how to do it.

Figure B

1. If there's a problem with the door as well as the door-jamb, unfasten the hinges, remove the door and use a pry-bar to remove the old door-jamb.

Figure C

2. On a split-jamb pre-hung door, the jambs are already pre-mounted on each side of the door, sandwiching the door itself between (**figure A**).

3. Remove the inner jamb temporarily, and position the door in place. Use a carpenter's level to ensure that the door is installed evenly and plumb.

Figure D

4. It's easier to work on installation with the door closed. Use wood shims to hold the door and door-jamb plumb and steady as you work.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

5. With the door held securely plumb, use an air-nailer to nail the door-frame to the surrounding studs. Nail directly through the frame and shims (**figure B**) all the way around the frame so that it is secure.

   Safetey Alert: Always wear eye protection when working with power tools.

Figure E

6. Once the frame is nailed in position, use a utility knife to score (**figure C**) and break off the shims. Repeat the process all the way around the door.

Figure F

7. Position the inner jamb back in place, line it up evenly and nail it secure in the same way (**figure D**). Install the nails in the inner jamb on the same plane as the ones used on the outer one so that the inside and outside nails are fastened through the same shim in each case.

8. Once the jamb is nailed securely, remove the rubber stopper from the pre-drilled doorknob hole (**figure E**). This was placed there prior to shipping to help hold the parts together, making the door easier to work with.

9. **Important**: If you want to paint or stain the door, wait until after the door-jamb and frame is hung. Remove the hinges, take down the door itself and lay it flat to paint.

10. This prefabricated door makes installation easier, and the doorknob holes are already pre-cut (**figure F**).

RESOURCES:

Taunton's Build Like a Pro: Windows and Doors: Expert Advice from Start to Finish (Build Like a Pro)

Model: 1561584835

Author: Scott McBride

(April, 2002)

To order this title from Amazon.com, click here.

Newtown, CT 06470
Phone: 203-426-8171
Fax: 203-426-3434
Email: service@taunton.com

Installing and Hanging Doors (For Pros by Pros Series)
Model: 1561586358
Author: Gary Katz
(August, 2002)

To order this title from Amazon.com, click here.

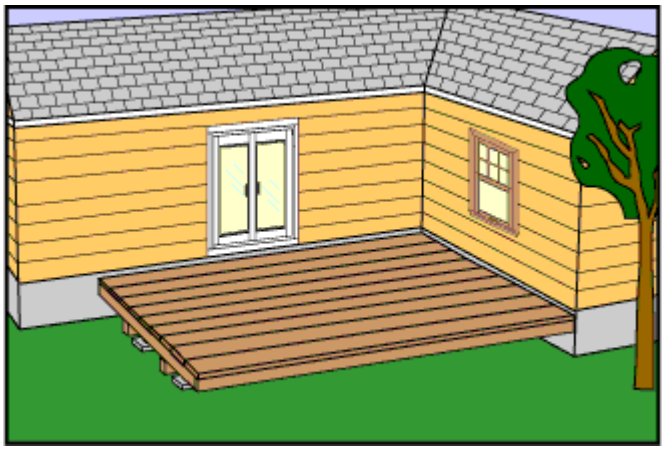
The Taunton Press Inc
Newtown, CT 06470
Phone: 203-426-8171
Fax: 203-426-3434
Email: service@taunton.com

- **ALSO IN THIS EPISODE:**
  DIY Basics: Kitchen Disposals
  Climbing Vines
  Basket Liners
  Healthy Mashed-Potatoes
  Installing a Pre-Hung Door
  Decorative Party-Light Strings
  Pets Quick-Tip: Parrots as Pets

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Installing Deck Boards

OVERVIEW



Introduction

Now that the deck frame and joists are in place, you can install the decking, or floor, of your deck. You have a variety of materials to choose from - pressure-treated wood, redwood, cedar or even artificial wood. Your choice will be based on your preference for aesthetics versus ease of maintenance.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

Time to complete this project depends on the size of the deck and the level of help available, the times listed here are for two people on a 10'x 30' deck with the house defining two sides of the deck.

- Beginner - 2 to 3 days
- Intermediate - 1 to 2 days
- Advanced - about 1 day

HELPFUL TIP Install decking boards with the bark side up. Boards can "cup" away from the bark side. This will enable the water to run off the boards.

HELPFUL TIP Decking boards should be about 1/8" apart to allow for the boards to swell and shrink. This also allows for water drainage through the deck.

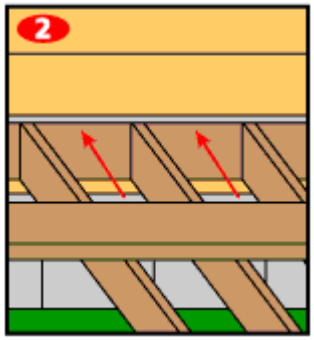
COMMON MISTAKE Make sure that butt joints in the decking do not occur on the same joist for 2 consecutive rows. Make sure they are staggered for both aesthetic and structural reasons.

STEPS

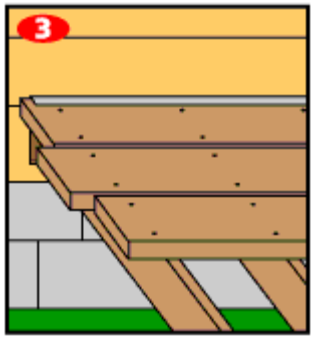
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

1. When installing the decking boards, you can use screws or galvanized nails. Use 2 screws or nails where a decking board and joist intersect. For both nails and screws, pre-drill the ends of the boards to avoid splitting.

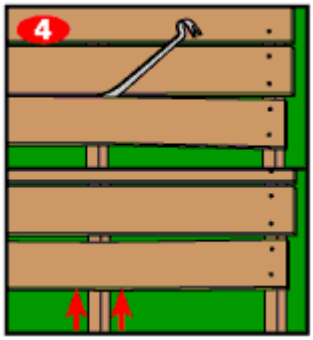
2. The first piece of decking should be the straightest board in the stack. It will go right up against the house. Cut it to length and slide it up against the house. Nail it or screw it in place.



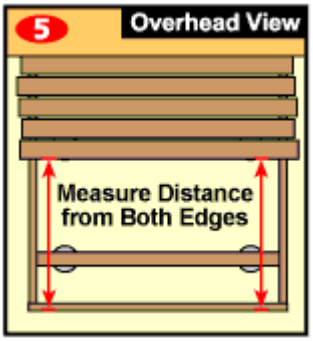
3. Lay each row of decking in place and nail or screw it to the joists. Maintain a consistent 1/8" gap in between row. For boards around the edges of the deck, allow the boards to fly a few inches past the deck. Later you will cut them all at once when they are all installed.



4. If a board is warped, screw it in place at one end, 1/8" away from the previous row. Move to the next joist. If the gap is less than 1/8", use a pry bar in between the new board and the last row to spread the boards apart. If the gap is greater than 1/8", have a helper grab the free end of the board and push it into the correct position. Screw the board in place.

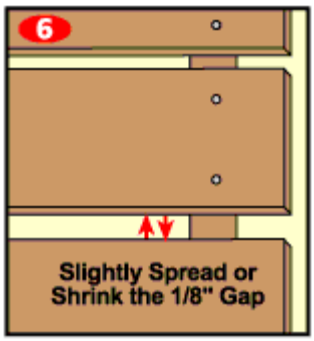


5. Every few rows, measure the distance remaining on both edges of the deck. Make sure the distance is the same. If one dimension is longer, you can get the rows of decking parallel to the end of the deck by spreading the gap at one end over the next row or two.

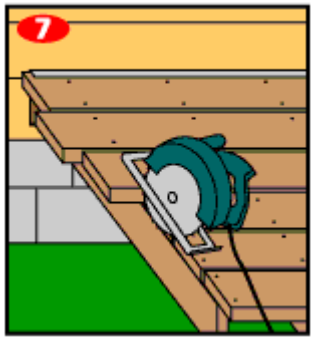


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

6. When you are about 4 to 6 feet from the end of the deck, check the remaining distances. Divide this distance by the width of the decking boards plus 1/8". You want to end the decking with a full width board if possible. Over the last 10 or so rows, you can slightly spread or shrink the 1/8" for a perfect fit.



7. Once all the deck boards are installed, you can cut off the ends that extended over the edge of the deck. Snap a chalk line and use a circular saw to cut all the boards in one step. Where the circular saw can't reach, use a hand saw in corners or next to your house.



SHOP LIST

Materials Needed

- Decking Boards
- Screws
- Silicone Caulk

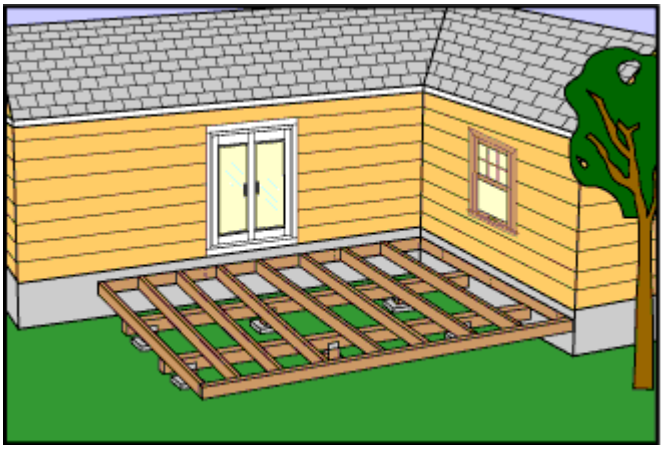
Tools Needed

- Circular Saw
- Hammer
- Pry Bar
- Square
- Screw gun
- Drill bits
- Tape measure

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Installing Deck Joists

OVERVIEW



Introduction

Joists provide the framing platform for the deck boards. Before you can install the joists, the ledger should be in place along the house and the grider(s) should be secured to the posts. The joists will be anchored to the house via the ledger and then supported by the girders.

BEFORE YOU START...

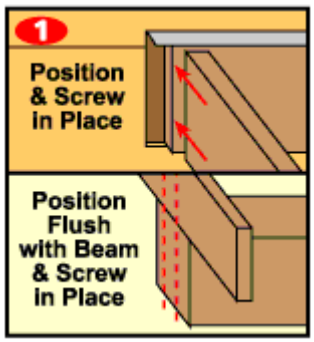
SKILL LEVEL & TIME TO COMPLETE

Time to complete this project depends on the size of the deck and the level of help available, the times listed here are for two people on a 10'x 30' deck with the house defining two sides of the deck.

- Beginner - 2 to 3 days
- Intermediate - 1 to 2 days
- Advanced - about 1 day

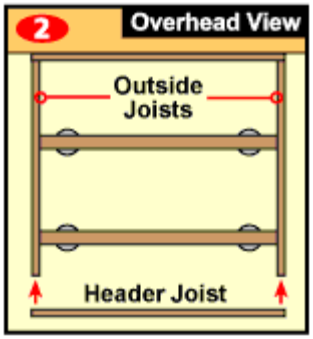
STEPS

1. Cut the two outside joists to length. Take the first joist and position it next to the end of the ledger. Screw it in place with a screw gun. Position the opposite end of the joist on top of and flush with the end of the beam. Screw it in place by angling a screw through the edge of the joist and into the beam. Repeat for the other outside joists that attach to the house.

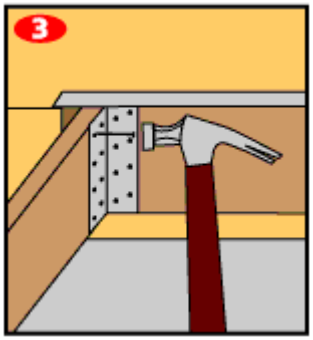


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

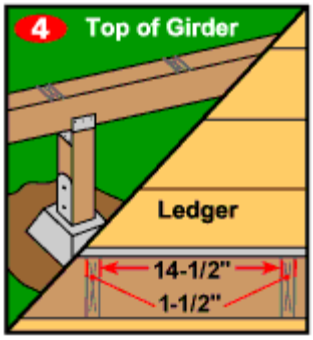
2. Measure and cut the header joist. Position it across the ends of the outside joists and screw it into the ends of the outside joists.



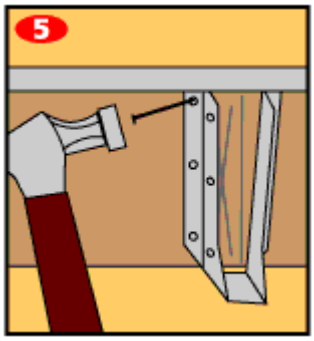
3. To add support to each of the 4 corners of the deck, screw in angle brackets in each inside corner. You can now remove the braces that were holding the posts in position. Your deck frame should now be locked in position.



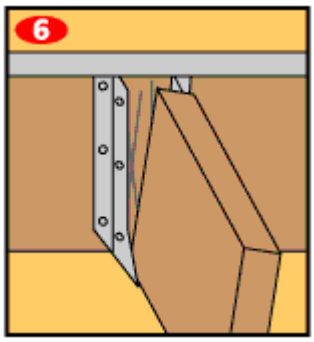
4. On the ledger, on top of the girders and on the inside of the header joist, mark the locations for the joists. They should be 16" on center. You need 2 marks to indicate either side of each joist. This translates to 14-1/2" in between each joist and 1-1/2" for the thickness of each joist. Then use a square to scribe the lines across the face of the board. Take a short piece of joist material, butt it up along the line and scribe the other line for positioning each joist. Put an X in between the lines to indicate the location of the joist.



5. Position a joist hanger along one of the scribed line. Screw or nail 1 side of it in place through its flange.

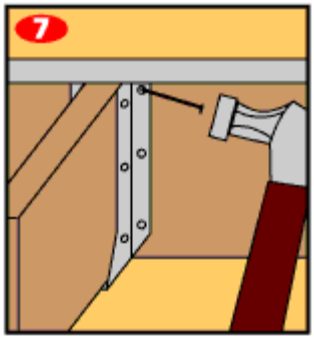


6. Take the short piece of joist material and put it in place in the open joist hanger.

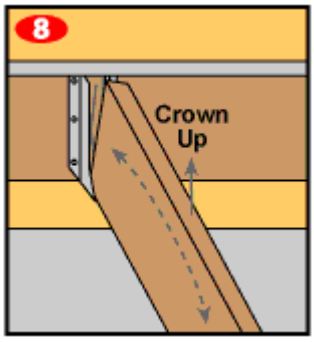


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

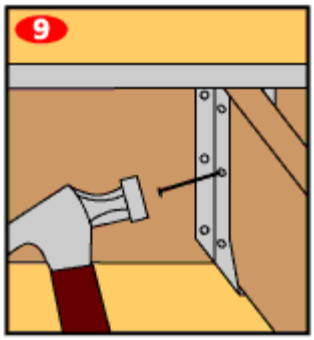
7. Flex the joist hanger up tight against the board. Make sure the top of the board is flush with the ledger of header joist. Nail the other side of the joist hanger in place. Repeat the last 2 steps until all the joist hangers are in place.



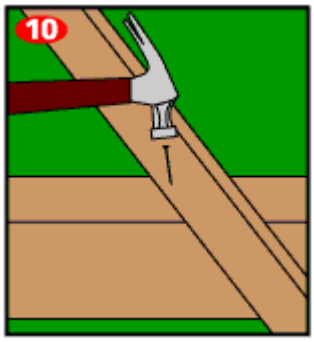
8. Measure and cut each joist to length using a circular saw. Use a square to mark each board to ensure a square cut edge. View down the end of each joist to determine which side has a crown. Lay each joist in place with the crown side up.



9. Screw or nail the ends on each joist to the joist hanger.



10. Where each joist crosses the beam, screw or toe-nail the joist to the beam. The deck frame is now complete. It is time to proceed with decking and railings.



SHOP LIST

Materials Needed

- Lumber for joists
- Joist hangers
- Screws

Tools Needed

- Miter saw
- Circular saw
- Pry bar
- Square

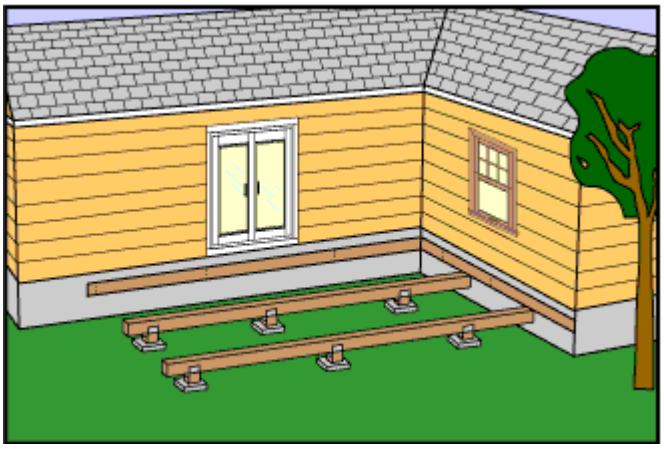
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Level
- Screw gun
- Reciprocating saw
- Tape measure

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Installing Deck Posts & Beams

OVERVIEW



Introduction

Before you begin framing your deck, you should have the ledger installed along the house and the concrete pads poured. These create the various supporting elements for your deck. Next to the house, the deck joists will be attached directly to the ledger. Meanwhile, the concrete pads hold up the posts, which support the girders (or beams) that the support the deck joists opposite of the ledger.

BEFORE YOU START...

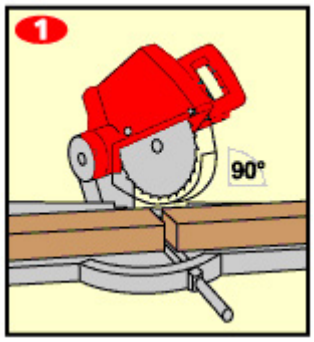
SKILL LEVEL & TIME TO COMPLETE

Time to complete this project depends on the size of the deck and the level of help available, the times listed here are for two people on a 10'x 30' deck with the house defining two sides of the deck.

- Beginner - 2 to 3 days
- Intermediate - 1 to 2 days
- Advanced - about 1 day

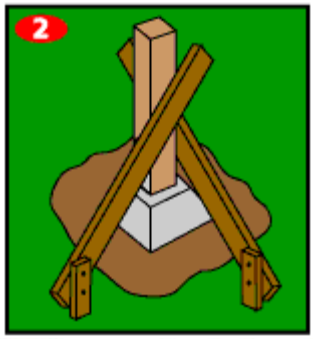
STEPS

1. Refer to your deck plans and determine the height of each post. Add at least 6" to the length of each and mark the appropriate dimension on each post. Cut the posts at the marks using a miter saw or circular saw.

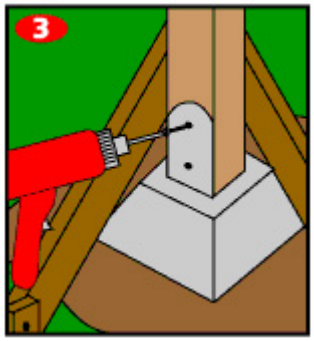


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

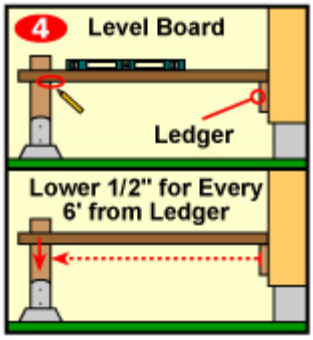
2. Place the posts in the piers on top of the appropriate concrete pad. Using pieces of 1" or 2" thick wood, put 2 braces on each post at 90 degrees from each other. Drive a stake into the ground and screw the tail of the brace to the stake. Then use a level to make sure the post is perfectly plumb and screw the two braces to each post. Make sure the braces are below the area where you will be installing the deck beam.



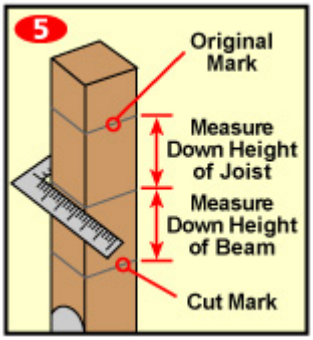
3. Screw each post to its pier using a screw gun.



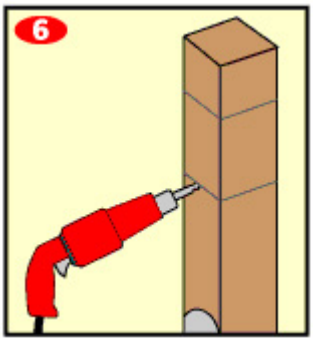
4. With the posts now in position, you need to determine the position of the top of the joists on each post. To do this, take a long straight 2" x 4" and rest it on the top of the ledger. Place a level on top of the 2" x 4". Hold the board level and then lower the board ½" for every 6' of distance between the ledger and the post. This is to provide a slight slope for water runoff away from the house. Mark the post at the bottom of the 2" x 4"board.



5. From the mark on each post, measure down the height of a joist and the height of the beam. Then use a square to mark all 4 sides of the post. This will be your cut line.

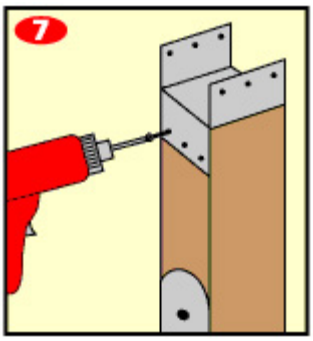


6. Cut each post to its marked height. Use a reciprocating saw and cut squarely across the lower mark on each post.

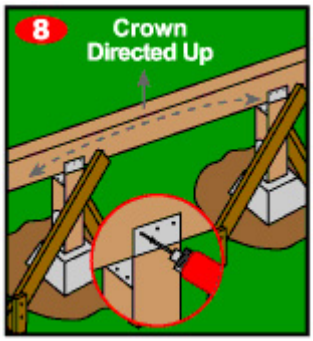


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

7. Install the post cap brackets on top of each post. Use the appropriates screw or lag bolts to securely anchor the brackets in place.



8. Measure and cut to length girders to length. Eyeball each girder to determine which way it crowns. Place each girder in position on top of the posts with the crown of the girder directed upwards. Screw the girders into place through the post cap brackets with screws and a screw gun.



SHOP LIST

Materials Needed

- 4" x 4" Posts
- 4" x 6" Girders
- Brace boards
- Wood stakes
- Post cap brackets
- Angle brackets
- Lag bolts
- Washers
- Screws
- Silicone caulk

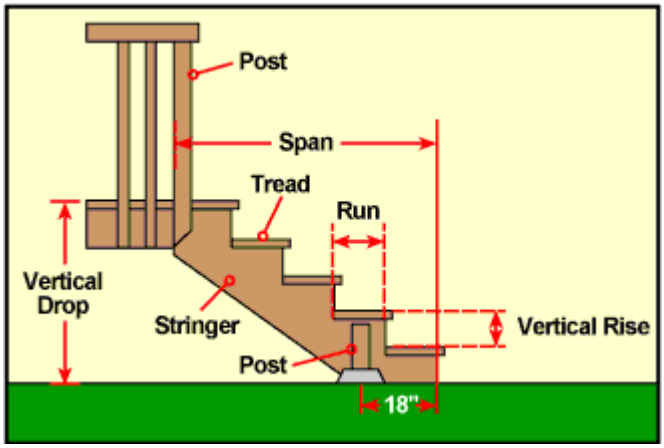
Tools Needed

- Miter saw
- Circular saw
- Square
- Level
- Screw gun
- Plumb bob
- Reciprocating Saw
- Tape measure

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Installing Deck Stairs

OVERVIEW



Introduction

Most likely you have planned one or two flights of stairs from your deck to the surrounding yard. Steps can be built a number of different ways depending on your aesthetic preference, however most municipalities have specific codes that must be taken into consideration when you design and build your steps. For instance, many cities require a minimum width of 3 feet for the stairs.

From a design standpoint, your stairs can have notched stringers or solid stringers. You can have deep tread runs of 16" or a more standard run of 11". At the foot of the stairs, you can use posts on concrete pads like the rest of the deck or build a solid base of concrete or stones. Design stairs that suit your style.

To understand this tutorial, note the main illustration and the following terms:
- Vertical rise - distance between 2 steps. Usually 6" to 7"
- Run - depth of each tread. Can range from 11" to 16"
- Vertical drop - height of stairs from the ground to the deck surface
- Span - distance the stairs cover from the deck to the foot of the stairs

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

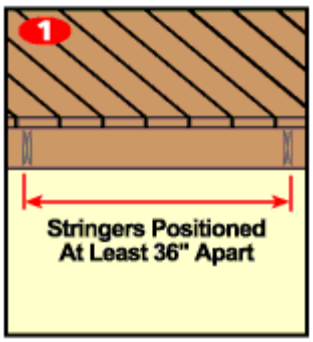
Time to complete this project depends on the size of the deck and the level of help available, the times listed here are for two people on a 10'x 30' deck with the house defining two sides of the deck.
- Beginner - 4 to 6 hours
- Intermediate - 3 to 5 hours
- Advanced - 2 to 4 hours

CAUTION Check with your local building department to get the deck railing requirements for your area.

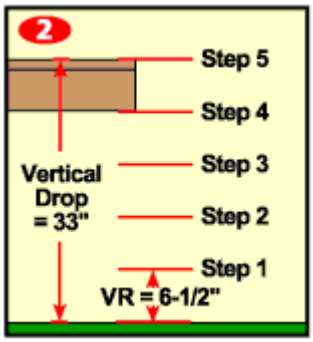
STEPS

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

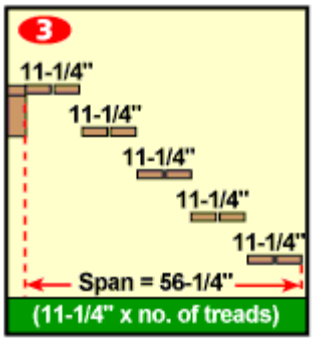
1. On the side of your deck, mark the location that the two stair stringers will attach. They should be at least 36" apart.



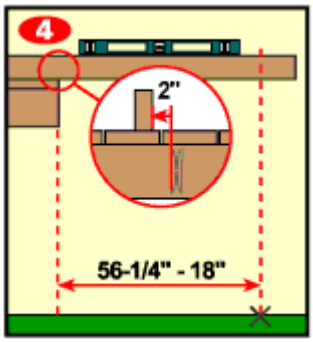
2. Measure the vertical drop from the deck surface to the ground. Divide this number by 7 to determine the number of steps. For instance, if the deck is 33" off the ground, you need 4.7 steps. Since you can't have 4.7 steps, round it to 5 steps. Now divide 33" by 5 steps. You get 6-1/2". This will be the vertical rise of your steps.



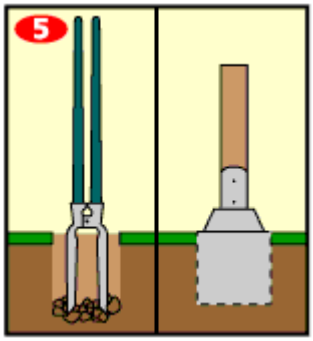
3. Determine the run you prefer. Using two 2x6's is a good choice. That means your step treads will be 11-1/4" deep. So your run is 11-1/4". Multiply 5 (steps) times the run (11-1/4"), you get 56-1/4". This is the span of your stairs.



4. Now it is time to mark the post locations. Using a 2x4 and a square, lay the 2x4 on the deck about 2" on the outside of one of the stringer marks. Measure out the distance of your span calculation minus 18". Drop a plumb bob and mark the ground. Follow the same procedure for the other stringer mark.

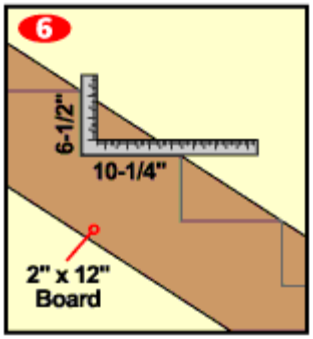


5. At the marks on the ground, dig round postholes and pour concrete footings. Attach the post piers and posts as described in the Digging Deck Post Holes tutorial.

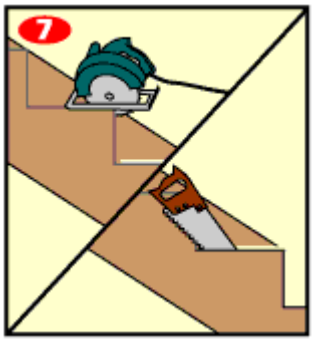


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

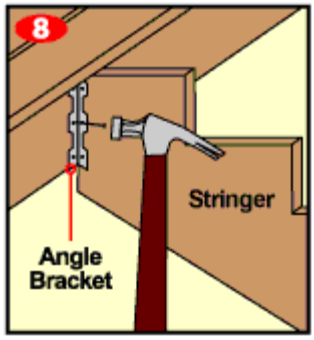
6. Take 2x12 boards and a square to mark out your stringers. If the deck surface overhangs the frame of the deck, factor that into the top step. The other steps should be 10-1/4" to allow a 1" overhang on each step. The rise measurement in this example is 6-1/2" as calculated above.



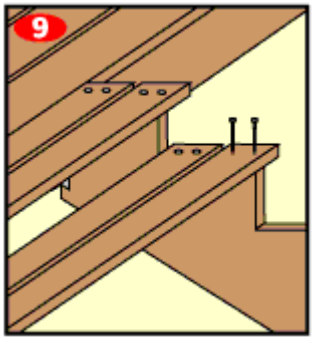
7. Use a circular saw to cut the stringers. Since a circular saw can't get all the way into the corners, use a hand saw to finish each cut.



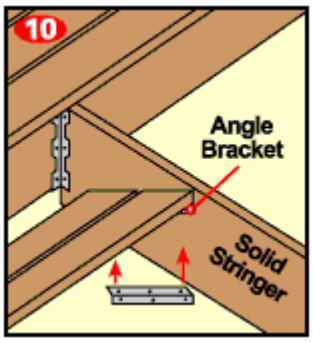
8. Attach each stringer to the deck frame using an angle bracket. Use lag bolts and washers to secure the foot of the stringers to the support posts.



9. To build the stair treads, cut 2x6 boards to span the stringers. If you factor in a 1" overhang on each side, cut the boards to 38" per this example. Allow ¼" gap in between the two boards on each tread. Screw the boards into place with two screws per board per stringer.



10. As an alternative to the stringers used in the above example, you can use solid stringers with angle brackets to support each tread. With solid stringers, the first step tread is one step below deck level. That means you will have 1 fewer tread in your flight of stairs. In step 2, subtract 1 from your step calculation (5-1=4 in the example above).



SHOP LIST

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Materials Needed

- 4" x 4" Posts
- 2" x 12" Lumber
- 2" x 6" Lumber
- Lag bolts
- Washers
- Screws
- Angle Brackets

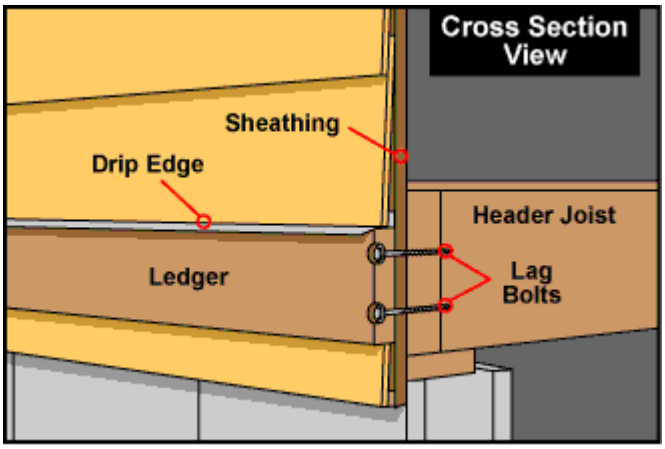
Tools Needed

- Miter saw
- Circular saw
- Hand saw
- Plumb bob
- Square
- Socket wrench
- Screw gun/Drill
- Drill bits
- Level
- Tape measure

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Installing the Deck Ledger

OVERVIEW



Introduction

It attaches the deck to your house and it is also provides the reference point for laying out the deck for construction. Because of its importance, the ledger must be correctly positioned and fastened very securely to the house.

Pressure-treated lumber is the preferred material for the ledger. It is very sturdy and resists rot and pests. It should be secured directly to a header joist or to a masonry foundation for maximum strength. For installation into a header joist, you will use lag bolts. Masonry installation requires anchors that expand as the lag bolts are screwed in.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

Time to complete this project depends on the size of the deck and the level of help available, the times listed here are for two people on a 10'x 30' deck with the house defining two sides of the deck.

- Beginner - 4 to 5 hours
- Intermediate - 3 to 4 hours
- Advanced - 2 to 3 hours

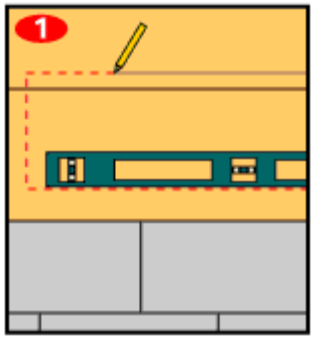
CAUTION Install the ledger at least 1" below any doors that will open out onto the new deck. This will help prevent water, ice and snow from building up and leaking under the bottom door seal.

HELPFUL TIP When marking the height for cutting the siding to fit the ledger, remember that 2" x 6" lumber is typically only 5-1/2" wide.

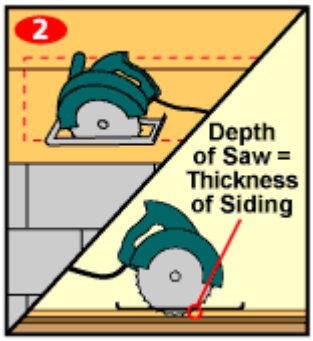
STEPS

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

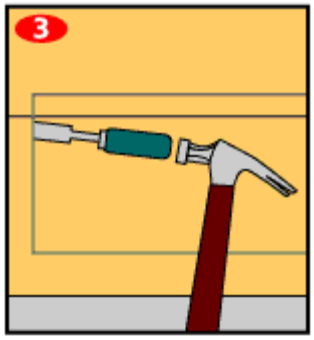
1. Reference your deck plans to determine the exact location and size of the ledger board. You need to cut out the siding on your house where the ledger will be installed. On the side of the house, use a level and mark the siding to match the size of the ledger. The length of the cut out area will actually be longer than the ledger to allow room for the outside joists and any decorative trim you plan to install.



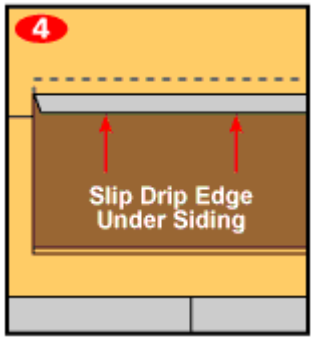
2. Set the depth of your circular saw to the exact thickness of your siding. You only want to remove the siding and leave the sheathing underneath intact. Cut around the marked area with the saw.



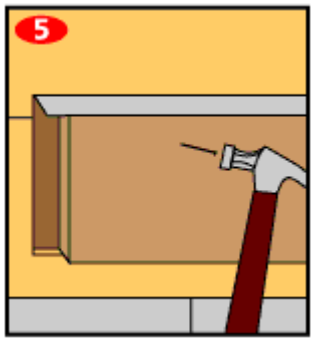
3. There are probably some areas, such as corners, that you could not get to with the circular saw. Use a chisel with the flat side facing the finished edge and cut loose any remaining areas.



4. Measure the length of the cutout area for the metal drip edge. It will need to span the entire length of the opening. Cut the metal drip edge using tin snips. Slip it under the siding. It should stay wedged in position for now.

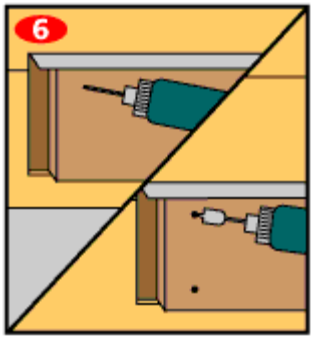


5. Measure the length needed for the ledger. It will be shorter than the cutout. Mark the ledger lumber and squarely cut it to length. Put the ledger in position in the cut out area. Make sure you center it in the cutout area, leaving room (about 1-1/2 inches) for the outside joists and trim on each side. Tack the ledger in place with a few nails or screws and a screw gun.

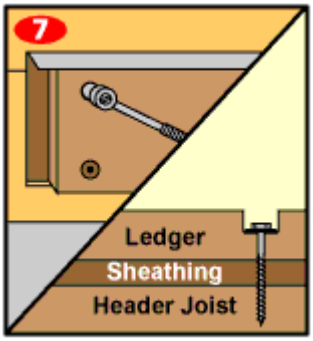


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

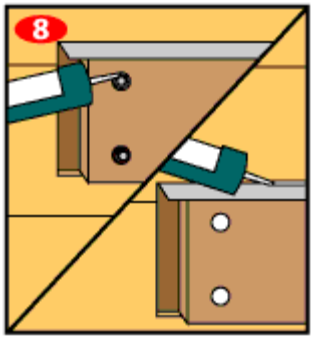
6. About 1-1/2" from the top and bottom edges, drill pilot holes. Make each set of pilot holes about 2 feet apart from each other. Then, using a 1" paddle bit, retrace your steps and drill 1/2" deep holes to countersink the washers and heads of the lag bolts.



7. Using a socket wrench, screw in lag bolts with washers in each of the holes. The lag bolts should be about 4" long so that they go through the ledger, the sheathing and into the header joist.



8. Now that the ledger is securely in place, take silicone caulk and fill in the holes with the lag bolts. Then run a bead of caulk along the seam between the siding and drip edge above the ledger.



SHOP LIST

Materials Needed

- Pressure-treated 2" x 6" lumber
- Lag bolts
- Washers
- Silicone caulk
- 16d nails Drip edge

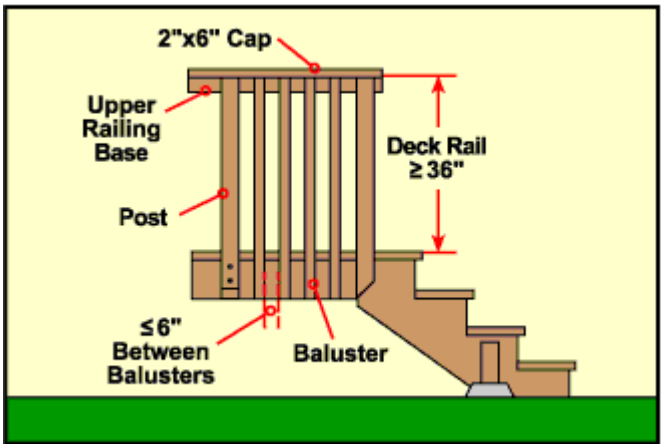
Tools Needed

- 4-foot level
- Circular saw
- Hammer
- Chisel
- Tin snips
- Socket set
- Hammer Drill
- Drill bits

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Installing the Deck Railing

OVERVIEW



Introduction

Deck railings are important to both the safety and the aesthetic appearance of your deck. In other words, a railing is the perfect blend of "strong and good-looking".

A deck railing must be built to comply with your local code requirements. For instance, a deck rail should be at least 36" tall and should not have any gaps that are greater than 6". To ensure its stability, the railing should be securely attached to the deck frame as opposed to the deck surface.

To make your deck railing attractive, you can design a fancy railing that still complies with your local building codes. A simple and visually appealing solution is to create a railing with vertical balusters spaced 4" to 6" apart. This is the approach we will cover in this tutorial.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

Time to complete this project depends on the size of the deck and the level of help available, the times listed here are for two people on a 10'x 30' deck with the house defining two sides of the deck.

- Beginner - 2 to 3 days
- Intermediate - 1 to 2 days
- Advanced - about 1 day

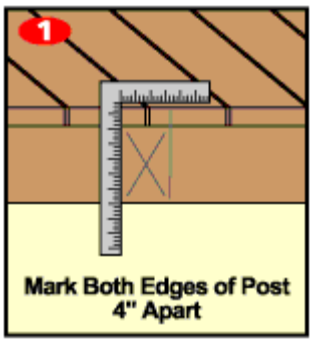
CAUTION Check with your local building department to get the deck railing requirements for your area.

COMMON MISTAKE Railing posts should be no more than 72" apart. You run the risk of the railings sagging if the span is too great.

STEPS

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

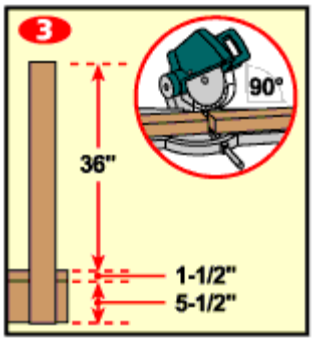
1. Refer to your deck plans to determine the location of the railing posts. Along the outer joists and joist header, mark the location of each post using a square. Mark both edges of each post, which should be 4" apart.



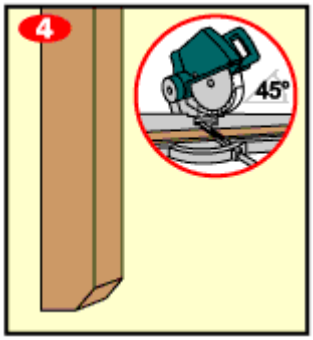
2. If your deck surface overhangs the edge of the deck framing, use a handsaw or reciprocating saw to cut notches in the deck so that the posts can fit squarely against the deck framing.

3. Determine the correct height of the railing posts. Assuming the finished height is 36", you will need to add the thickness of the deck surface (usually 1-1/2") and the height of the joists (usually 5-1/2"). Squarely cut all the railing posts to length using a miter saw.

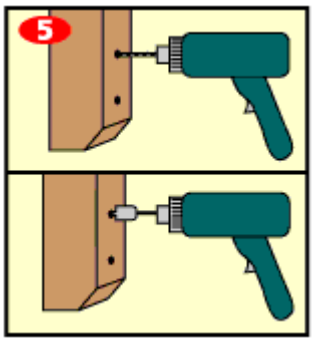
   Notch out the bottom of each post for a more stable and attractive finish. Measure up from the bottom 7" (joist height + decking thickness). Set your circular saw to a depth of 1-1/2" and cut the post at this mark. Then cut every ½" to the end of the post. Use a hammer and chisel to clean out the notch.



4. For a more attractive post base, click the corner with the miter saw set at 45 degrees.

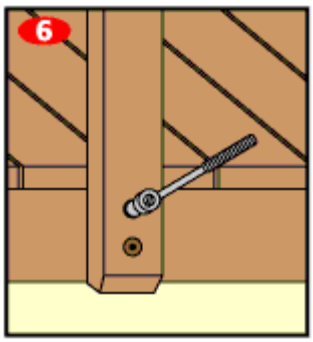


5. Pre-drill that base of the posts with 2 holes for the lag bolts. After the drilling 2 holes all the way through the base of each post, drill holes about ½" deep with a larger bit to counter-sink the lag bolt heads.

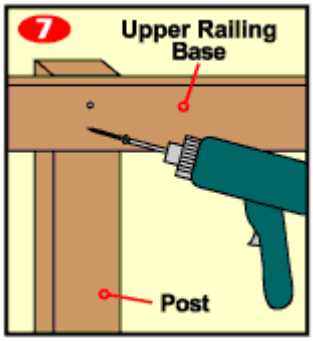


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

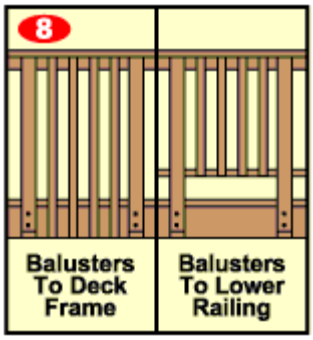
6. Install the railing posts using 2 lag bolts each. Use a socket wrench to drive them into place.



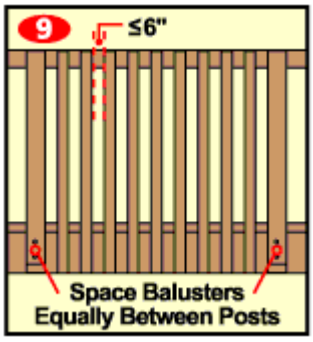
7. Using 2x4 lumber, measure and cut the upper railing base. Install the upper railing base to the top of the posts using 2 screws per post.



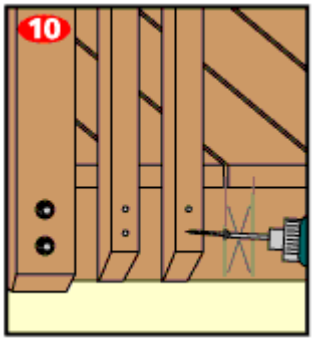
8. When installing the balusters, you can run them all the way down to the deck frame or you can install a lower railing the supports the bottoms of the balusters.



9. Measure the distance between each set of posts. Calculate the number of balusters you will need to maintain an equal distance between all balusters. Remember the balusters should be no more than 6" apart. Mark the location of each baluster on the top railing and lower railing or joist.

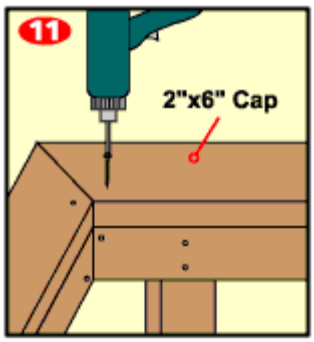


10. Measure and cut the balusters to length. For an attractive appearance, cut the bottoms of the balusters at a 45-degree angle. Using 2 screws at the top and 2 screws at the bottom, install the balusters.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

11. To top off your railing project, install a 2x6 cap on top of the upper railing base and posts. Miter the corners at 45-degree angles. Use screws to screw the railing cap to the 2x4 upper railing base.



SHOP LIST

Materials Needed

- 4" x 4" Posts
- 2" x 4" Lumber
- 2" x 6" Lumber
- Lag bolts
- Washers
- Screws
- Silicone Caulk

Tools Needed

- Miter saw
- Circular saw
- Hand saw
- Chisel
- Square
- Socket wrench
- Screw gun/Drill
- Drill bits
- Hammer
- Reciprocating saw
- Tape measure

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

INTERIOR PAINTING

SKILL LEVEL

No special skills are needed in order to paint and decorate successfully - attention to detail is the key to it all.

SAFETY FIRST

Even when working just a couple of feet off the floor, always use a strong stepladder - never stand on a chair or other 'hop-up'. Use protective clothing when necessary.

INTRODUCTION

Painting is a cheap and easy way to give your home a new look.

To get the best results when painting, choose good materials and equipment; keep brushes and other tools clean and in good condition.

Never skimp on preparation work or you'll be disappointed with the finished results. Take time to rub down surfaces properly and fill cracks and holes neatly. Only start painting when surfaces are smooth, clean and dry.

2 - Preparing a room

Clear as much furniture from the room as possible. Whatever has to remain should be gathered in the middle of the floor. Vacuum the room thoroughly. Use dustsheets to cover furniture and floor coverings.

Remove all fixtures and fittings from walls and doors. In the long run, it is far quicker to do this rather than to try and paint around them, which leads to paint runs and smudging on the fitting itself. With electrical fittings, turn off the power before loosening switches, ceiling roses, etc.

Mask off window-panes and woodwork using masking tape, newspaper and polythene dustsheets.

3 - Preparing walls and ceilings

If there are any damp patches on walls and ceilings, find out the cause and remedy it first. There's no point in trying to paint over dampness, because it will probably cause the paint to flake off quickly and the damp patch will seep through again anyway. When the damp patch has dried, it should be primed with a damp seal. Watermarks will seep through even several coats of emulsion.

Use sugar soap or mild detergent and a large decorator's sponge to wash down all surfaces, starting with the ceiling. Rinse thoroughly, but do not saturate the surfaces. Allow to dry before painting. Make sure that electrical fittings are protected from water. Plaster surfaces tarnished by nicotine

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

stains need to be coated with a stain block or nicotine block before painting.

In older houses, you can still find walls and ceilings coated with distemper, and paint will not adhere to this. You can tell if this is the case, because the powdery coating will come off when you wash down the surface. Distemper is best removed. Wet the distemper thoroughly with water and remove with a nylon-scouring pad, or for thicker layers, scrape off as much of it as possible. Use a stabilising solution over the area to bind any last traces of distemper.

Ceiling paper that is sound and well adhered can remain and be painted. Any loose edges can be stuck back with wallpaper adhesive or overlap adhesive and allowed to dry before painting. Loose or bubbled paper has to be stripped off. Remember that paper may have been applied to a wall or ceiling to hide minor cracks that are superficial but unsightly. If necessary, you may need to re-paper.

4 - Cracks and holes

Filling cracks with a filling knife

Use interior filler to fill any small cracks and holes in plaster. Use a flexible filling knife to force the filler into the hole (1).

Sanding filler smooth when dry

Leave the filler slightly proud of the surface, allow it to dry, then rub it smooth with dry sandpaper wrapped around a wooden block (2). You may need to repeat the process in some areas for a really smooth finish.

Larger holes and cracks are more economically filled with deep-repair filler, or a plaster filler. Check manufacturer's instructions for use - a larger crack may have to be filled in a couple of stages. Any loose plaster should be chipped off first. Where a surface is sound but covered with a network of crazed superficial cracks, you can use a textured flexible paint, or first hang lining paper. Alternatively, use a textured wallcovering that is specifically made to be overpainted and

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

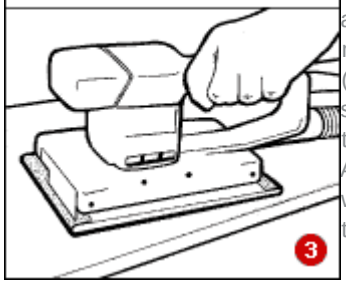
ideal for uneven walls.

5 - Preparing woodwork

If existing paintwork is in a sound condition, there is no need to strip it off - it will make a good base for the new paint. The only exception is where a thick coat of paint is causing windows or doors to jam.

If the paint is to remain, then it should be washed down with sugar soap and water to remove all traces of dust, grease and stains. Rinse thoroughly.

Rubbing down old gloss with an orbital sander

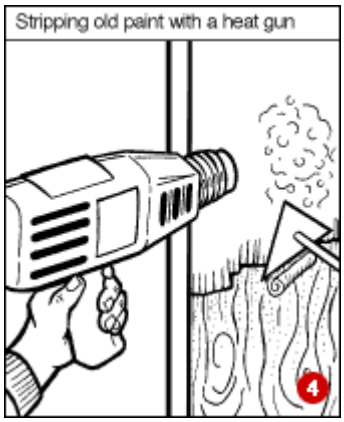


Rub down the surface with medium-grade sandpaper, or an orbital sander fitted with a medium-grade sanding sheet (3). This roughens the surface, giving a good key for the new paint to adhere to. Always wear a facemask when sanding (please refer to the section 'Lead in Paint').

Finally, wipe over the surface with a lint-free rag moistened with white spirit. Use a pointed stick to get the rag into corners where dust can be trapped - it may be picked up on the brush and spread across the surface to leave a pimply effect on the dried paintwork. Don't forget to clean out keyholes and the top edges of doors where dirt and dust can be picked up on the brush.

Paintwork that has the odd chip or crack need not be stripped off. Fill any chips and holes with interior filler or a wood filler and sand it flush with the surface when the filler has dried.

Stripping old paint with a heat gun



If the paintwork is in bad condition and has lots of cracks and flaking areas, then it is best to strip it off back to bare wood. You can strip paint by dry sanding, with a chemical paint stripper or with a heat gun (4). Dry sanding with sandpaper is not recommended for anything other than the smallest area, and even then it is advisable to wear a facemask. Chemical stripper, in the form of pastes, gels and liquids, is best where you suspect that the old paint may have contained lead. See the section 'Lead in

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

paint' for details. However, it is a much lengthier process than using heat, and more costly. A hot-air gun melts the thickest paint coat so that it can be scraped off with a shave hook. It is best to use a chemical stripper near to windows where heat can crack the glass. Bare wood should be rubbed down with medium sandpaper or an electric sander.

Bare wood will need treating before painting. Knots must be treated with knotting. This prevents the resin seeping out and staining the paintwork. To seal the surface, use a wood primer before undercoating and then painting your surface.

6 - Preparing varnish

Like paint, there is no need to strip sound varnish. If it needs to come off then remove it just like paintwork. Fill any holes and cracks with woodfiller, sand down surfaces lightly, wipe over with white spirit and then start varnishing.

7 - Preparing metal

Iron or steel windows can rust, and if this is happening all traces need to be removed. Small patches can be treated with emery cloth or wire wool, but larger areas need wire brushing, either with a hand-held brush or a wire cup brush fitted to an electric drill. Always wear a facemask and safety goggles.

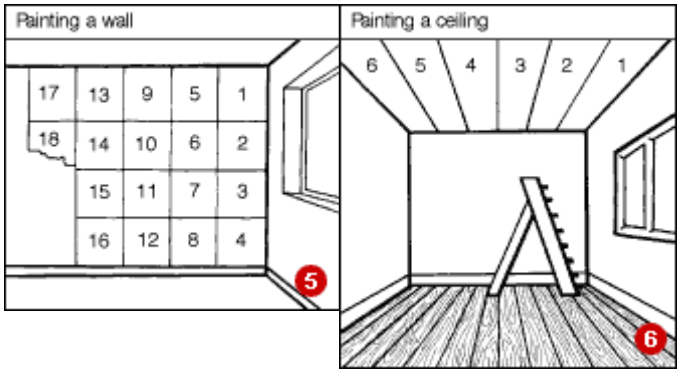
Rust can reform overnight, so fill any holes with a filler suitable for metal, then apply a coat of metal primer as soon as possible. Aluminium just needs to be washed with sugar soap and rubbed down with medium-grade sandpaper. There are various primers available, for both ferrous and non-ferrous metals.

8 - Painting ceilings and walls

Bare plaster needs to be sealed before applying emulsion paint. This can be done with a plaster sealer, dilute PVA sealer, or a diluted coat of emulsion. You do not need to prime a surface that has been painted previously, except the areas you have had to fill and repair.

Always plan to decorate a ceiling or a complete wall in one work session. If you take a break and the paint dries, a paint line will show where you stopped and restarted.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Start painting at the main window and work back into and around the room (5 & 6). This makes it easier to see what you are doing.

If using a roller, first paint a narrow band, using a brush, along all edges and into corners where the roller won't reach; this is called cutting in. Brushes are best held like a pen and paint applied with even strokes.

Do not dip your brush too far into the paint, a third of the brushes bristles is enough. Make sure you feather the edges of the paint so you do not leave a hard edge that is difficult to blend and cover.

Tip some paint into the well of the roller tray and load the roller by dipping and rolling it in the paint and running it backwards and forwards on the slope of the tray, completely and evenly covering the roller sleeve.

Now apply the paint with the roller in a zigzag motion over the surface and work systematically across the room. Paint the ceiling in 600mm (2ft) bands, and on walls work downwards from the top to the skirting.

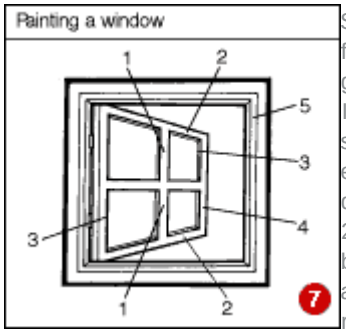
Paint pads are also used in zigzag directions, working quickly to join up wet edges.

9 - Painting woodwork

Always use a primer on bare wood first to help seal the surface. Where a surface has already been painted, use the undercoat colour recommended by the manufacturers of your chosen gloss or satin paint. In some cases it might require a second undercoat to completely obliterate the old paint. It is important that you do this or the colour will show through the new coat of paint. When each coat has dried, sand down lightly with medium-grade sandpaper and wipe with a lint-free cloth moistened with white spirit, before applying the next coat.

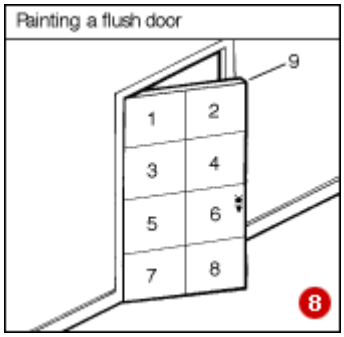
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

When painting woodwork, apply the paint with the grain and then, without reloading the brush, work it across the grain, and finish with the grain. Then reload and move on to the next section, joining up wet edges quickly. Do not over brush areas that have already started to dry.



Start painting window frames from the edge closest to the glass and work outwards (7). If an open window is a security risk, complete it early in the day so that it is dry for closing by night. Use a 25mm (1in) and 50mm (2in) brush for covering narrow and wider sections, respectively.

It is recommended to take a margin of about 3mm of paint onto the glass - this prevents condensation running down into the frame causing it to rot. Masking tape stuck in place on the glass, or a paint shield, will ensure a neat finish around window frames.



Paint a flush door using a 75mm (3in) wide brush or a small foam roller. Start at the top corner of the hinge side and work in square sections across and down the door, finishing at the bottom corner on the handle side (8).

With a panelled door, it is best to work with a couple of brushes - a 25mm (1in) one for mouldings and a 50mm (2in) or foam roller for the wider areas. First paint the moulded areas around the panel then paint in the panels. Then paint in the centre verticals, followed by the cross rails. Finish off by painting the outside verticals followed by the edge of the door.

10 - Painting radiators

The best paints to use are special radiator enamels, as these will give you a tough and durable surface that will not discolour with the heat. However, solvent-based gloss or satin can also be used to good effect. Only paint a radiator when it is cold and don't turn it back on until the paint is thoroughly dried. There may be a paint smell initially when

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

the radiator is warmed, but this will soon dissipate. Don't paint the radiator connections and valves.

It is not recommended to use emulsion paint or some water-based paints on radiators as they are not tough enough. There are now, however, some water-based paints available that can be used to paint walls and woodwork, as well as radiators. Always follow the instructions on the tin for individual products.

11 - Lead in paint

Up until the mid-sixties, lead was used in some kinds of paint, especially those use on wood and metal work. This is a hazardous substance, especially for young children and pregnant women, and should always be handled with care. Lead can be absorbed into the body through the skin or by inhalation of dust particles. The danger occurs if the paintwork is loose and flaking, or if it is likely to get knocked, chewed or scratched by a child or a pet. This could potentially release lead dust into the house.

If your house was built after the sixties, it is unlikely that paint containing lead was used. But any house built before the sixties, even if it has been painted since then, most likely has some lead-based painted woodwork. If you are in any doubt, there are lead-testing kits available that are quick and easy to use.

If your old painted surface is in good condition - not flaking or chipped - it is best left alone. You can paint over this surface sealing the old paint in.

If it is necessary to remove the old paint, then the best way to do this is to use a liquid chemical paint stripper, as this will not release harmful dust.

You can also use a hot-air gun, but use only enough heat to soften the paint - burning it will release fumes. Set your heat gun to below 450 °C.

- Do not use an electric sander
- Wear protective clothing and a suitable facemask
- Clear the room as much as possible
- Seal the work area from the rest of the house and cover carpets
- Open windows for plenty of ventilation
- Keep other people away from the working area - especially children and pregnant women
- When taking a break, store the clothes you have been wearing in a sealed bag and wash any bare skin carefully as soon as you finish working
- Do not eat or drink while you are working

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- When most of the paint has been removed, moisten the surface and smooth it with wet-and-dry paper - not sandpaper
- When the paint has been removed, collect all paint peelings as you work and put them in a sealed plastic bag for collection by your refuse collector
- Clean the room with water and detergent. Hire an industrial-standard vacuum cleaner (British Standard 5415) to clean carpets and to make sure all traces of dust are removed from the house

If you are not confident about dealing with lead in paint correctly and safely, call in a reputable, professional decorating firm.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Ladders

Various types of ladders are available. When considering buying or hiring a ladder, look at the choice available and decide what kind you need for the work you are going to use it for. For occasional work it will be cheaper to hire what you want when you want it. It is probably worth while buying a set of multipurpose steps to suit your most frequency needs.

Platform step ladder

A platform step ladder gives stable working position with a high level platform for resting tools and materials being used. Available in various heights and with or without a high level hand rail. This type opens up like scissors to give a free standing set of steps with a small platform at the top, thus leaving your hands free and saving the need to keep getting off the steps for tools and materials. They are very stable and, if fitted with a handrail above the platform, extra safe. When choosing a platform ladder, make sure the treads are wide enough to allow you to stand comfortably for long periods. When not in use, the steps fold up and are quite compact to store.

Combination ladder

A combination ladder offers various arrangements to give a step ladder, an extension ladder and a stair ladder in one piece of equipment. The combinations fold down to about the same size as the platform step ladder but is much more versatile. Three way combination ladders (illustrated right) consist of a pair of ladders which can be arranged in three different configurations to give a simple step ladder, an extension ladder and a step ladder which can be positioned astride steps. Four way combination ladders consist of 3 ladders which can be arranged in the same ways as the 3 way plus an additional arrangement which provide an extension to the basic step configuration. If you live in a bungalow or flat, a combination ladder should be sufficient for most jobs.

Extension ladder

Extension ladders are used for working at height. These consists of two or three parts which can be slid apart to give the required height. Available as two or three extensions and in various 'closed' lengths (2.5 to 3.5m). A double extension ladder, which can give a length of upto about 8 meters, should be suitable for most two storey properties. Longer, 3 section ladders can give lengths upto about 10 metres.

On smaller ladders, the ladder may be extended by hand and secured with stay locks which rest on to a selected rung. On larger ladders, the sections are extended by means of a rope loop running down the side of the ladder and secured upon a cleat.

As the average diy'er will use an extension ladder infrequently, it is probably better to hire one when it is required. Although if you do use an extension ladder frequently, it will be more economical to purchase one.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Roof ladder

Always use this type of ladder when working on a pitched roof - fit it and climb onto it from scaffolding (or a scaffold tower), not a ladder. The roof ladder has two wheels at the upper end which enables it to be pushed up the roof without damaging the slates or tiles. On the other side to the wheels, the ladder is formed into a hook which fits over the top ridge of the roof and stops the ladder from slipping down the roof.

Choosing a ladder

Ladders are available in either aluminium or fibreglass (timber ladders have more or less disappeared from the market). Fibreglass ladders cost more that aluminium, but they do have advantages.

Aluminium

Aluminium is lightweight and durable, but bends easily and can present risks when electrical work is being performed. Never use a metal ladder to do electrical work unless it is fitted in insulated feet.

Aluminium ladders can corrode and weaken by salt air or chemicals an aluminium ladder. The aluminium sections can also be bent if they are knocked or fall, a distorted section cannot be reliably repaired.

Fibreglass

Fibreglass is not as light as aluminium, but it does not conduct electricity, is not susceptible to damage by moisture or rot and does not bend easily.

Fibreglass ladders have not been available for very long, as time passes disadvantages to them may come to light.

Weight rating

All steps and ladders have a weight rating which indicates the load which will be safely placed on it.

Look at the quality of the connections and hinges on the ladder, if they look weak and liable to break, they probably will.

Length needed

To calculate what length of ladder you need, work out the highest point at which you will want to stand when working and allow for the ladder to extend at least three clear rungs above that point. Remember that the foot of an extension ladder has to be away from the base of the wall by about a quarter the height of the ladder, so the working height will be less than the length of the extended sections. Also remember that the sections need to overlap, a 2 section 3.4m ladder will give about 6.2m working length and a 3 section 3.4 ladder will give about 8m.

Useful accessories

Various ladder accessories can be bought or hired. Some of them are worth using as they make working at height more comfortable and convenient.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Ladder platform

Clips onto a rung to provide a convenient area for tools and materials at the top of the ladder.

Ladder tray

This attachment holds bucket and tools in a high position. A stout 'S' hook may also be used to suspend a bucket or paint can, but is less versatile.

Ladder stay

One end locks onto the top two rungs of the ladder and the other end rests against the wall so the ladder is held off a small distance from the wall. It allows the underside of the eaves and guttering to be worked on without having to lean back.

Maintaining a ladder

Very little maintenance is required for aluminium or fibreglass ladders. Check that the hinges of step ladders are not binding and that the sections on extensions ladders slid freely - aluminium to aluminium friction can weaken the material over a period of time.

On extension ladders, check where rope is used, that it is in sound condition and the fixing positions are secure/undamaged. Fit new rope as soon as there is any sign of fraying.

Storage

Step and combination ladders can easily be stored in any dry corner but make sure they are not likely to be damaged or twisted.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

An extension ladder presents a bigger problem due to its size. An ideal place is the garage, where it can be kept dry and under lock and key and possibly hung along the wall on strong hooks or angle brackets and make sure it is well supported in the middle.

Make sure that any ladder is secure and not available for the local burglars, a bicycle style security chain is useful to secure a ladder to a metal eye in a wall or other fixed point.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Laminate flooring-Lay it yourself!

In today's trend of homely yet modern design is plenty of space for laminate flooring. The ease of maintenance and hygienic properties of this type of flooring are just two of the reasons that more and more people choose to go 'laminate'. It will be able to give you the feel of a wooden floor, without having to spend bags of money. And nowadays it is so easy to lay it yourself!

With the development of the click-and-go laminates, you really don't need to be a professional to be able to lay your own floor. Which saves you a lot of money! In this guide we will give you a few handy pointers to laying your own laminate floor and how to care for it.

What is laminate flooring?

Laminate is a type of flooring that exists of different layers of material that all have different qualities. From top to bottom, in a typical laminate floor there are: a decorative surface (made of a resin-based melamine that is hard wearing), a wood-based core (which is the main component of a laminate floor), and a backing that is bonded to the underside of the core, which gives it its rigidity.

Laminate flooring comes in all sorts of designs, mainly copying wood patterns and is produced in rectangular plank shape. But recently new designs have been put on the market, imitating slate and tiled flooring. Therefore these laminates have a square shape, but will still have the same main features of laminate flooring, namely durability, ease of maintenance and ease of fitting.

Which flooring to choose?

There are different types of laminate flooring, but both of them work with the tongue-and-groove principle and both of them are 'floating systems', which means that the floor is not attached to the under-floor, but is resting on the under-floor. First of all, there are two methods of putting the floor together: with glue and without glue. Glued flooring is put together by putting a bead of glue between the tongue and the groove. Glueless flooring is a system by which the panels are clicked together and gets more and more popular every day, as it is quicker and cleaner than the glued system. It is also possible to 'unclick' the panels and take them with you when you move.

Laminate flooring comes in a lot of different qualities, thickness and water resistancy. Choose the best flooring you can afford and make sure the flooring you choose is appropriate for the room you're going to put it in. For example, you best use waterproof laminate flooring for the bathroom and the kitchen! Have a look around your local DIY stores, comparing qualities and prices to make sure you make the right choice.

Tools and materials that you will need

- Laminate flooring (!). Be sure you check and double check the size of your room and buy 5% more than you think you need. You will always need more for cutting and nobody likes going back to the DIY shed for one pack of planks! Besides that, when you do return, they might not have your colour match anymore!
- Underlay (to make the floor sound proof and to provide insulation). Take 5% extra of this as well.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Edging trim (a laminate flooring is not fixed anywhere, edging trim is used to keep it in place along the sides and to provide a neat finish). Take some more of this as well, as you will always have to cut around funny corners you hadn't anticipated.
- Tape measure
- Mask and goggles
- Scissors
- Circular saw/Jigsaw
- Handsaw
- Spirit level
- Square
- Nails/screws etc.

Tools and materials that you might need

When you have a concrete sub-floor:

- Chisel
- Hammer
- Levelling compound
- Bucket
- Damp-proof membrane (for when you have tiles, asphalt/concrete or vinyl as your sub-floor)

When you have a wooden sub-floor:

- Hammer
- Detector for pipes and electricity cables
- Plane (for protruding areas)
- Filler or levelling compound (for holes and hollow areas)
- Pipe covers to neatly finish flooring around pipes

How to start

First of all you have to condition the flooring to the room's temperature and humidity. Leave it in its packing and lay it horizontally (to prevent bending of the laminate) for at least 48 hours before you start to lay it.

Remove all the flooring you will not need anymore (like carpets, etc.). Leave only the sub-floor. You will now have the opportunity to access any under-floor electrics and plumbing, so take it! It will save you a lot of time in the long run.

Determine whether your floor is level enough to start adding the underlay or whether you have to level it out first. **Important!** Not taking enough time to level the floor at this stage will later surface in a number of problems, like bending and warping of the boards and a general unevenness of the floor. This will reduce the enjoyment you will have from your floor and will also shorten its life expectancy. A floor is considered level when difference in height is less than 1mm over a metre.

To level a concrete sub-floor, you will use your hammer and chisel to chip away the protruding areas, and your levelling compound to fill any gaps. However, if they floor is generally not level, it is best to apply the levelling compound over the whole area, which will give a perfectly smooth finish all-over. A damp-proof membrane now has to be put in place according to the composition of the sub-floor.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A wooden sub-floor needs to checked on protruding nails and loose floorboards. A plane can be used for any uneven boards. Filler for smaller areas and levelling compound for larger areas can be used to even out the floor.

What next?

Put the under-floor down according to the instructions on the packet. As soon as you've done this, check whether the door will clear the final height of your floor by putting a laminate floorboard against the door. If the door gets stuck on the floorboard, now is the moment to remove the door and sand or plane away the excess in order to let the door open properly.

Decide which way you would like to have your floor laid. It is recommended that the floor is laid at a 90o angle across the floorboards (if you have any) in order to reinforce the joints. Another solution might be to first apply a hardboard underfloor to the floorboards. This way it doesn't matter which way you lay your laminate.

Use two spacers in one corner of the room in order to leave a gap between the floorboards and the wall, and lay your first board against it. Make sure it is aligned properly with the wall. Now you can start clicking the boards together until you get to the end of the first row, making sure you use spacers all along the entire wall.

To cut the last board off at the correct point, place the board next to the flooring that is already in place. Make sure you allow for the spacers that need to be placed at the end of the row.

If the cut-off of the last board of the previous row is longer than 300mm, you can use it to start the next row. It is important to create a staggered effect, as the boards shouldn't end at the same place.

It is now easy to click and fit the biggest area of your room, and quite quickly it will look like you're creating something! The only areas you really have to take care of are around doors and pipes. Try to fit your floor as neatly as possible around your door mouldings. You might have to carefully saw into the moulding to ensure a snug fit. Use a laminate floorboard as a guide to show you how much you need to cut away. For pipes you have to measure the distance into the floorboard where the pipes will emerge (taking care to allow for a gap between the boards and the wall). Also measure the width of the pipe. Use a jigsaw to cut out the area around the pipe, starting at the edge of the board. This way you can remove the bit where the pipe will come through the board, and you can replace the bit behind the pipe (using a bit of glue to hold it in place). Use pipe covers to neatly cover around the pipe.

After removing the spacers from around the floor, use edging trim around the room to neatly finish off the floor.

Now you just have to give it a sweep and you're ready!

Top tips

- Have a good look around your local DIY sheds before you commit yourself to a particular type of flooring. Nowadays there are a lot of different

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

designs and colours available, and there are quite a few offers on laminate flooring, so shop around and get yourself a good deal!

- A shopping list is always a good idea!
- Measure measure measure before you go to your DIY shed. And even then buy about 5% more than you need. Especially if you've never done laminate flooring before it helps if you don't need to worry about mis-cutting a few boards. You don't want to go back for one extra pack just because you couldn't be bothered with it in the first place!
- Always buy the right flooring for the right environment. Check whether the floor will be water resistant when you want to apply it to your kitchen or bathroom.
- Plan any electrical or plumbing work ahead. When you remove your carpet or old floor, you have the easiest access to the wires and pipes under the floorboards, so do it before you lay your new floor!
- Check whether the spacers are included in the pack of floorboards you're buying. They are handy tools to keep your floor in place while you're fitting.
- Take your time while fitting the floor! Although you really want to finish it tonight, deep in your heart you know the floor will look a lot better when you sleep on it and look at it again with fresh eyes the following morning!
- If you decide to go for a glued laminate floor, please keep the drying times in mind. This mainly determines the strength of the flooring.
- If you decide to take the floor with you when you move (only possible with the glueless variant), be careful with unlocking the boards. The tongues snap quite easily if treated roughly.
- Use a special laminate floor cleaner to optimise the shine and durability of your floor. Do not use any abrasive or bleach-based products.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Lay a Laminate Floor

SKILL LEVEL

To complete this project, you'll need accurate measuring and cutting skills.

Floormaster laminate floors are precision-made, making them easy to work with.

SAFETY FIRST

Always wear a face mask and goggles when cutting laminate flooring. Ensure children and animals are out of the way.

INTRODUCTION

Laminate flooring can transform any room with its warmth and beauty. Simply choose from our range of LOC or Tongue and Groove laminate flooring and give your room a facelift by following these step by step instructions

2 - How Much Will I Need?

How much underlay will I need?

To work out the amount of underlay needed for your floor, measure the length and width of the room. Multiply the two numbers together - this figure will tell you how many square metres the underlay needs to cover.

For example: if your room is 4 metres long and 3 metres wide, 4 x 3 =12 square metres. You will need to buy underlay to cover 12 square metres of flooring.

Never be tempted to buy less than you really need and allow an extra 5% for cutting.

How much laminate flooring will I need?

Remembering the length and width of your room, use the tables below to calculate the number of packs of laminate flooring you will need.

For example, if your room is 6 metres long and 5 metres wide and you have chosen to use Floormaster 900 LOC laminate flooring, you will need to buy 15 packs of flooring to cover the floor.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

FLOORMASTER 900 LOC (Allowing approx. 5% wastage)					
L \ W	3m	4m	5m	6m	7m
3m	5	6	8	9	10
4m	6	8	10	12	14
5m	8	10	12	15	17
6m	9	12	15	18	21
7m	10	14	17	21	24

Floormaster 900 LOC
LOC laminate flooring requiring no adhesive.

- Can be fitted anywhere except bathrooms and humid areas
- Resistant against cigarette burns, fading, stains, impact and scratching
- Available in wood effects and coloured

FLOORMASTER 1600 LOC (Allowing approx. 5% wastage)					
L \ W	3m	4m	5m	6m	7m
3m	5	7	9	10	12
4m	7	9	11	13	16
5m	9	11	14	17	19
6m	10	13	17	20	23
7m	12	16	19	23	27

Floormaster 1600 LOC
LOC laminate flooring requiring no adhesive.

- Water resistant, so can be fitted anywhere **including bathrooms**
- Resistant against cigarette burns, fading, stains, impact and scratching
- Available in wood effects and coloured

FLOORMASTER TILE LOC (Allowing approx. 5% wastage)					
L \ W	3m	4m	5m	6m	7m
3m	6	8	9	11	13
4m	8	10	12	15	17
5m	9	12	15	18	21
6m	11	15	18	22	25
7m	13	13	21	26	30

Floormaster Tile LOC
LOC laminate flooring requiring no adhesive.

- Water resistant, so can be fitted anywhere

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

including bathrooms

- Resistant against cigarette burns, fading, stains, impact and scratching
- Ceramic tile effect, available in a range of colours

Extras

You should not fit your laminate floor right to the edge of the room. You will need to allow a 10mm gap for it to contract and expand with the room temperature. Use fitting wedges (shaped pieces of plastic), included in the fitting kits, to create this 10mm expansion gap. When the floor has been laid, the wedges are removed and the gaps can be covered with skirting or laminate flooring edging trim for a professional looking finish.

Measure round the perimeter of the room (or add the length and width measurements of your room together and multiply by two) to find the length of beading needed to cover the extension gap.

3 - Laminate Flooring Basics

Laminate flooring is laid as a loose, 'floating' floor. The boards are not nailed to the floor but simply joined to each other without the need for nails or screws. This means laminate flooring can be laid on top of most surfaces, including timber or concrete, as long as it's dry, clean, and level.

Choose carefully

In bathrooms or other areas of high humidity, ensure you select a suitable grade of flooring. The Floormaster 1600 LOC and Floormaster Tile LOC ranges are water resistant and suitable for bathrooms where the flooring may get wet.

And remember, inappropriate floor covering is always a false economy, especially where there is a lot of foot traffic or other wear and tear.

Condition the laminate flooring

Before you lay your laminate flooring, it must be conditioned to the room's atmosphere. If this is not done it could warp (become twisted and bent out of shape).

To condition the flooring:

- Make sure it's kept in its original packaging

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Put it in the room where the floor will be laid (ideal temperature of 18°C to 20°C)
- Lie the pack horizontally
- Leave the flooring in this position for at least 48 hours

4 - Sub-Floor Preparation

The floor you intend to lay the laminate flooring on top of must be dry, firm and level. A floor is considered level if the deviation in height is less than 1mm over a distance of 1 linear metre. Sheets of fibre-board can be used to level minor deviations and they have additional acoustic and thermal properties. Deviations above this must be levelled out before laying the new floor. The following sections advise how this should be done, depending on the type of sub-floor you have.

Wooden sub-floor preparation

- Remove any protruding nails or tacks to ensure you have a smooth surface.
- If you are laying your laminate flooring on an upper floor, re-fix any loose boards using screws rather than nails as hammering might damage the ceiling plaster below.
- Use a detector to identify if there is any underlying pipework or electricity cables so that you can avoid these areas when driving in nails or screws.
- Smooth any high spots in the floor using a plane, and fill hollow patches with levelling compound (sometimes called screed) to make the floor level.

Concrete sub-floor preparation

Some concrete sub-floors have raised 'high' spots of concrete that can be chipped away with a bolster, but the easiest way to achieve a smooth surface is with levelling compound (screed). Simply mix this in a bucket with water, then pour and spread with a trowel. It will then set to a level finish.

We recommend that newly laid concrete or screed be allowed to dry at a rate of 1mm per day prior to fitting laminate flooring, i.e. 50mm screed = 50 days.

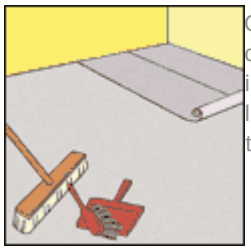
Damp-proof membrane

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A damp-proof membrane should be fitted to stop any moisture from damaging the new boards. This is in addition to a damp course which may already be present in the sub-floor. The following sub-floors require a damp proof membrane of 0.2mm thick:

- concrete
- vinyl tiles
- asphalt
- quarry tiles

Underlay



Once you are sure the sub-floor is clean, dry and level, you will need to install underlay prior to laying your laminate flooring. There are three types of underlay available:

- Floormaster Laminate Flooring Underlay - can be used with all laminate floors
- Wood Fibre Underlay - has extra acoustic and thermal properties
- Combilay - laminate floor underlay and damp proofing all in one

Doors

Check that your doors will clear the new floor. Place a board of the laminate flooring you have chosen to lay, together with any underlay you are using, on top of your sub-floor and mark off how much of the door (if any) needs to be planed away.

While you have easy access to your sub-floor, carry out any plumbing tasks or electrical installations you have planned.

Cutting laminate flooring

You will need to cut your laminate flooring to fit the shape of your room, remembering to leave space for items such as pipework.

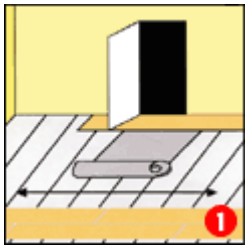
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Use a power circular saw with a carbide toothed blade and cut from the non-decorative underside of the boards to avoid chipping. Alternatively, use a hand saw and cut from the top of the boards. Ensure you cut the planks carefully - they are strong and durable but may chip during cutting if care is not taken.

5 - Laying a LOC laminate floor

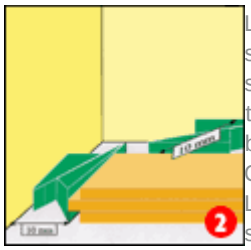
LOC laminate flooring simply 'locs' together, so no adhesive is required. It is quick and easy to install and can be re-laid up to six times - but remember that care should always be taken when doing this.

Choose the direction



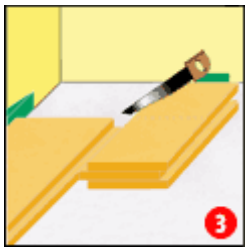
Most manufacturers recommend flooring is laid lengthways, along the room, running the boards towards the window if there is one. If you're laying over floorboards, lay the laminate boards at 90° (right angles) across them to reinforce the joints (1).

Laying the first row



Lay the first board with the Groove or small tongue against the wall. Two spacers should be used to allow for the 10mm expansion gap between the boards and the wall (2).
Check alignment and squaring.
Lay the next board against the short side and fix into place. Once fixed be very careful if separating the joints as this may result in damage.

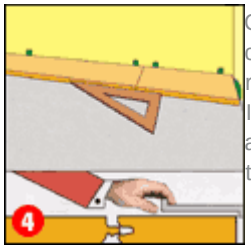
The end of the row



To measure the correct length of board to use at the end of a row (allowing for the 10mm gap), place the final board next to the existing flooring with the tongues facing each other. The groove end should be pushed up to the spacers against the wall (3).
Cut the required length and turn the board so that the groove and tongue are together.

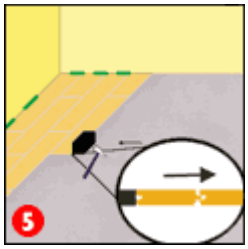
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Fitting the boards



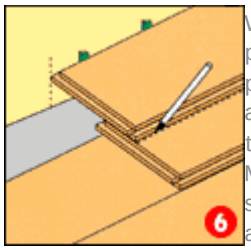
Check that the first row is positioned correctly and the spacers are in the right place.
Insert the tongue of the first board at an angle to 'loc' the boards firmly together (4).

Starting a new row



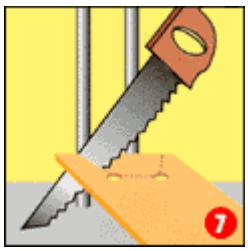
When starting to lay a new row of flooring, make sure that the first piece you are going to lay is at least 30cm in length.
Remember to stagger the joints (creating a 'brick wall' effect) when laying the boards (5) and tap them together using a tapping block - the long side first, followed by the short side.

The final row



When you come to lay the last row, place a loose board on top of the previously laid row, then place another board on top of this with the tongue touching the wall.
Mark the board underneath so that it shows the required width (6) and cut along this line before fitting it.

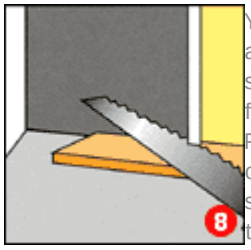
Pipes



If you need to fit your flooring around pipes, start by measuring the diameter of the pipe then drill a hole, 20mm larger than the pipe diameter, in the laminate board. Saw a section out of the board which goes through the hole (7) so that it can be laid around the pipe and replace the sawn out section and glue in to place.

Mouldings and skirtings

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



You may need to make minor adjustments to door mouldings and skirtings to ensure your new flooring fits comfortably.
Place a piece of the flooring face down on to any underlay you are using and saw the moulding above this board at the base (8).
Fit the floorboard under the moulding, remembering to leave a 10mm expansion gap.

Finishing

When you have laid your floor, remove the fitting wedges. If you are using floor edging to hide the expansion gaps, pin or glue it to the wall or skirting board (not the floor). Use a nail punch to drive the pin heads below the surface. Cover holes made for pipes with pipe covers and glue into place.

To restore your floor's shine, go over the surface with a broom or vacuum cleaner (with the brushes down). To add extra shine to your newly installed floor, use a laminate floor cleaner.

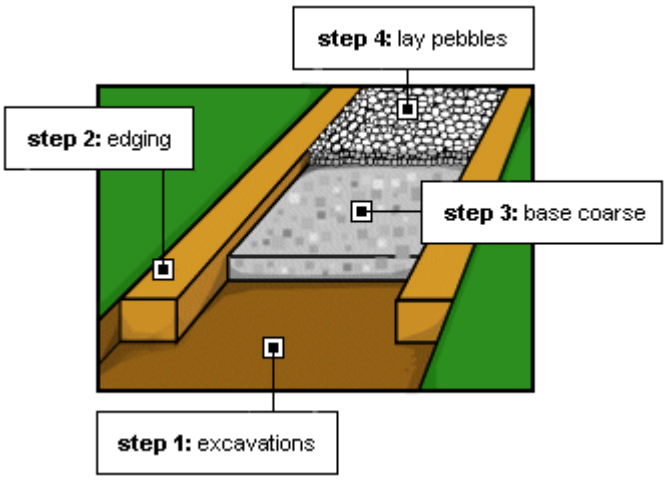
Laminate flooring repair kits are available should your new floor suffer any damage. Please refer to the product instructions for advice on ongoing care and maintenance.

If you require additional advice on fitting a laminate floor, please contact the Floormaster Helpdesk on 01276 410200.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Pebble Path

In this project we are going to show you how to make a pebble path. We are going to use 100x75 h4 treated tanalised posts for the edgings, gap 20 basecourse and a choice of a number of topings (pebbles, bark, shell, chip etc.) A pebble path is easier and cheaper to construct than a paving stone path and irregular and curved shapes offer no problem although weeds can be a nuisance and regular raking can sometimes be necessary. For this project we are assuming the ground is moderate to firm, if not, soft ground will need to be excavated deeper and replaced by basecourse metal.
Read at bottom of page for material list and other notes.

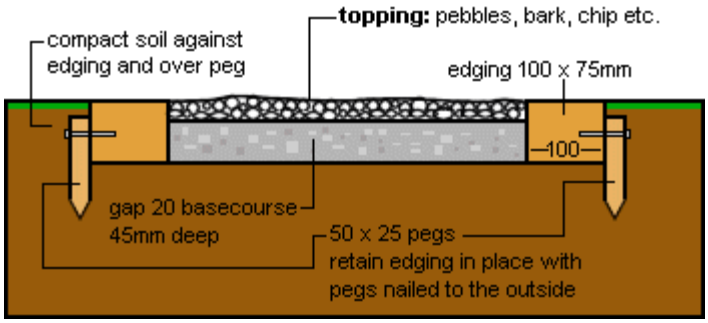


Step 1: **Excavations** Dig out the proposed pathway to a depth of 75mm below finished path height (usually existing ground level) and the required path width.

Step 2: **Putting down the edging.** Lay the edge boards (100x75 sawn h4 treared posts) into place so the top of the edge boards are at the required path finished height. Retain them in place with stakes nailed to the outside and trim the stakes off 20mm below the top of the edging board. (see drawing below)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Pebble Path - cross section:



Step 3: Base course Add a layer of GAP 20 base course in between the edging boards. (GAP 20 is a mixture of rock. The abbreviation, GAP 20, General All Passing, means the metal is graded to one certain size, 20mm in this case, and everything below this size is included in the product). Add and compact the base course with a mechanical plate vibrator until the finished height is 30mm down from the top of the edge boards. At the same time compact the soil against the outside of the edge boards thus ensuring they stay in place parellel. You can hire a plate vibrator from your local hire centre.

Step 4: Lay pebbles Lay pebbles on top of the base course and flush with the top of the edge boards. Other preferences to pebbles might be garden bark, gravel, shells, white chip etc.

Material List	
MATERIALS	INFORMATION
100x75 sawn h4 treated	Normally used as standard fence posts. Come in lengths of 2400mm
GAP 20 Base course	GAP 20, **G**eneral **A**ll **P**assing, is a mixture of crushed rock graded to 20mm and everything below. One cubic metre would be enough to do a path 1m wide x 20m long or 20 sq metres
river pebbles	Different sizes. One cubic metre would be enough to do a path 1m wide x 30m long or 30 sq metres
garden bark	An alternative to pebbles. One cubic metre would be enough to do a path 1m wide x 30m long or 30 sq metres
Shells	An alternative to pebbles. Different sizes. One cubic metre would be enough to do a path 1m wide x 30m long or 30 sq metres
McCallum chip	An alternative to pebbles. One cubic metre would be enough to do a path 1m wide x 30m long or 30 sq metres
White chip (limestone)	An alternative to pebbles. One cubic metre would be enough to do a path 1m wide x 30m long or 30 sq metres

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

LAY CARPET, VINYL OR CORK TILES

SKILL LEVEL

Only simple skills are needed to lay carpet, vinyl or cork tiles. Even where tiles have to be cut to fit awkward shapes, a simple cardboard pattern can be made first as a guide.

SAFETY FIRST

If adhesive has to be used to stick down tiles, ensure there is adequate ventilation in the room. When cutting tiles, use a sharp knife fitted with the correct blade for the material being laid.

INTRODUCTION

Floor tiles are very versatile - they can be used in any room in the house and make an excellent, hard wearing floorcovering.

Buy good-quality tiles and you will have a floorcovering that will withstand wear, tear and spillages. The beauty of carpet tiles is that if one is damaged or stained beyond repair, it can simply be picked up and replaced.

The performance of any floorcovering is determined by the care taken to prepare the sub-floor. Whether timber or concrete, it should be dry, clean and even. Where necessary, the sub-floor should be covered with hardboard.

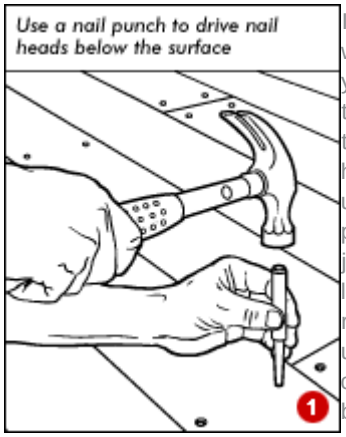
2 - Calculating tiles needed

Tiles are sold in packs and the size and number of tiles contained in the pack will determine the area of floor that they will cover - usually stated in both metric and imperial measurements. If the area is given only in metric, then measure the room in metric or errors could occur in your calculations.

Measure the room and multiply the width by the length to find its total area. Any reveal or bay should be measured separately and its total area added to the main floor area. Round up the total to the nearest whole number to establish the number of packs of tiles you need to buy.

3 - Sub-floor preparation

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



If you have chipboard floors which are smooth and level, you can lay tiles directly on top. Remove any protruding tacks or nails or drive their heads below the surface using a hammer and nail punch (1); drive any screws just below the surface. Any loose boards should be refixed - use screws in upstairs rooms as hammering could damage the ceiling below.

Make sure that there are no wires or plumbing pipes where you are driving in nails or screws.

Floorboards will need to be covered with sheets of 3mm thick hardboard. If you lay tiles directly on to floorboards, it is likely that the boards will start to show through and cause premature wear, especially in areas of heavy traffic.

Use sheets 1220mm (4ft) square, or 1220mm x 610mm (4ft x 2ft).

Condition the boards to the room's atmosphere before laying them. This prevents them warping later. Brush water on to the mesh-side of the board, then stack the boards for 48 hours, mesh-side to mesh-side, in the room in which they are to be used.

Lay the boards smooth-side up. Use 19mm annular nails, hardboard nails or staples. Fix them every 150mm around the edges and across the boards. Butt up the edges of adjoining boards tightly, and stagger them in brickwork fashion so that joints don't coincide (2).

When cutting boards at skirtings, you do not need to get a perfect fit - a gap of around 6mm will be covered by the tile.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Any dampness in a solid floor must be treated before laying a floorcovering. There are various damp-proofing compounds that can be brushed on to cure the problem.

Holes or uneven patches can be filled with a self-levelling compound which is poured on the floor and spread out with a trowel (3 & 4). It will then set to a level finish.

A concrete floor which gives off dust when brushed can be treated with a purpose-made sealer or with diluted PVA adhesive.

A new concrete floor must be allowed to dry out before laying tiles. Allow about one month for every inch of thickness.

If wood preservative has been applied to floorboards, don't lay tiles, even if the boards are covered with hardboard. There is a risk that the preservative could bleed through and ruin the tiles.

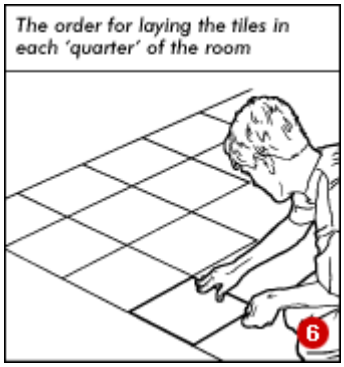
4 - Setting out the tiles

For the best appearance, establish how the tiles are to be set out beforehand. Avoid leaving narrow strips along skirtings and especially at a doorway (5).

First find the centre point of the room. Establish the centre point of opposite walls and snap a chalked stringline across in both directions. Working out to each wall, loose lay the tiles until the skirtings are reached. If narrow pieces are left, adjust the starting point to avoid this happening.

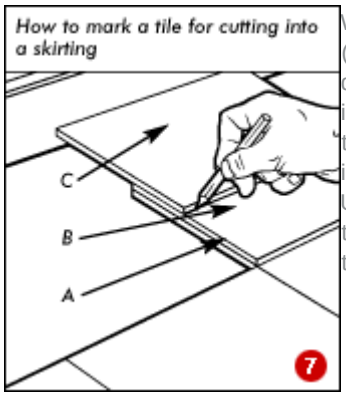
Any bays or window reveals will have to be taken into account and the starting point adjusted if necessary.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



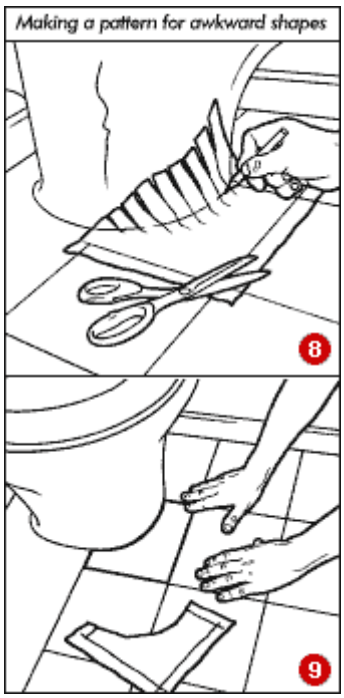
The best way to work is to lay the tiles in each quarter of the room formed by the string lines (6).

5 - Cutting tiles



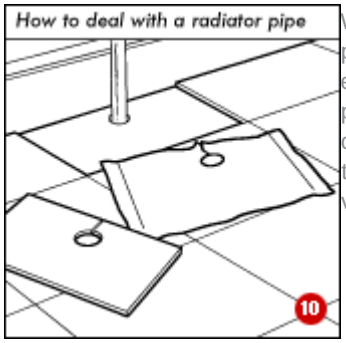
When cutting into a skirting (7), lay the tile to be cut (B) directly on to the last full tile in the row (A). Now place a third tile (C) on top and press its edge against the skirting. Using a pencil or biro, mark the other edge of tile C on to tile B.

Place the tile to be cut on a scrap piece of board and, using a sharp knife pressed against a steel straight-edge, cut firmly through the tile. It will fit perfectly into the space left for it.



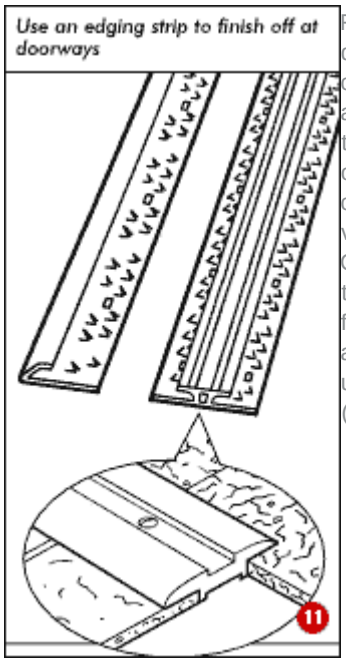
Awkward shapes around sink pedestals, door architraves etc, are best overcome by first making a cardboard pattern of the precise shape and transferring this to the tile (8 & 9).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



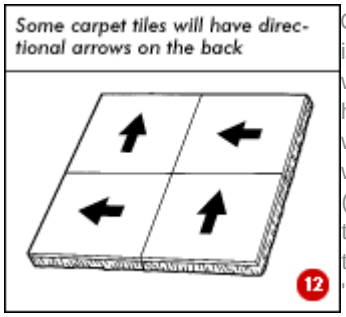
Where there is a radiator pipe, cut a slit from the back edge of the tile to the pipe position and then cut a circle out for the pipe. When the tile is laid, the slit will not be visible (10).

6 - Dealing with doorways



For a neat finish at a doorway, fix an edging strip centrally, using screws, adhesive or double-sided tape. There are various types of bar suitable for joining carpet or vinyl to carpet, vinyl, wood, ceramic or cork. Check that you are buying the correct type. Edges of floor-coverings not protected at doorways are likely to turn up, causing people to trip (11).

7 - Carpet tiles



Check the manufacturer's instructions for the correct way to lay the tiles - some have arrows on the back, which show the direction in which each tile is to be laid (12). It's important to follow the arrows as, with plain tiles, it is this which gives the 'chequerboard' effect.

Carpet tiles are loose-laid so that they can be taken up, if necessary, and relaid in different parts of the room to spread wear, or for cleaning. The first tile in the centre of the room can be dislodged slightly when the second and third tiles are laid. To prevent this, fix the first tile with carpet adhesive or double-sided carpet tape.

Butt up the edges of the tiles closely to neighbouring tiles.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

8 - Self-adhesive vinyl tiles

Check that the batch and item numbers are the same on each pack.

Keep the tiles in warm conditions before laying them; this will ensure they are supple.

Vinyl tiles can be laid over old tiles which are well stuck down.

Use a suitable primer on hardboard or screeded floors before tiling.

Self-adhesive vinyl tiles have a paper backing to protect the adhesive (13). Do not remove this until the tile is to be laid.

Starting with the centre tile, peel off the paper and align the edges of the tile carefully with the guide lines. Press down the edges and then the remainder of the tile. If the tile is laid inaccurately, peel it off the floor immediately and relay it. The adhesive is sufficiently strong to allow for a second attempt.

If a tile is misaligned with the starting point, the error will be obvious at the skirting, where each edge tile will be tapered, giving a very poor appearance.

When laying subsequent tiles, butt up the edges, then roll out the tile flat on the floor, using hand pressure all over to ensure it has made good contact.

Go over the whole floor again at the end, pressing down all tiles to ensure they are well fixed.

Allow seven days before washing the floor with water.

9 - Cork tiles

Keep the tiles in their packs in a warm atmosphere, and only open the pack immediately before laying.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Shuffle each pack of tiles to blend the various differences there might be in the shade of each tile.

Where tiles are being laid with floor-tile adhesive, spread sufficient adhesive for the first tile, allowing about 10mm extra at each edge. After that, spread about one square metre at a time before laying further tiles. Use a V-notched spreader to apply the adhesive.

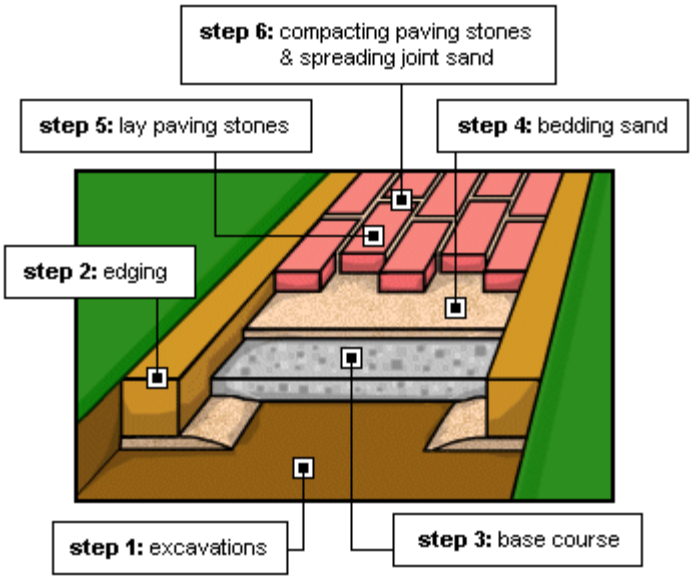
Any adhesive that comes up between the edges of the tiles should be wiped away immediately with a cloth dampened with either white spirit or water, according to the manufacturer's directions.

Check to see if you need to apply a coat of floor seal when all the tiles have been laid. Often the tiles are supplied with just one coat of sealer applied - a second may be needed to seal and waterproof the joints.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Paving Stones

In this tutorial we explain how to lay a paving block path. For added style and ease we have replaced traditional paving stone concrete edging with 125x125 senton posts. This method of edging not only creates a great look, but also makes the project easier for those attempting it. We are using common solid concrete cobblestone paving blocks 230mm long x 190mm wide x 60mm thick. These pavers come in a variety of colours for individual tastes. Other materials required include basecourse metal (gap 20) and sand. All materials are ready avaliable in the Auckland area. This project is suitable for moderate to firm ground. If your ground is soft, you will need to excavate deeper and replace with basecourse metal.

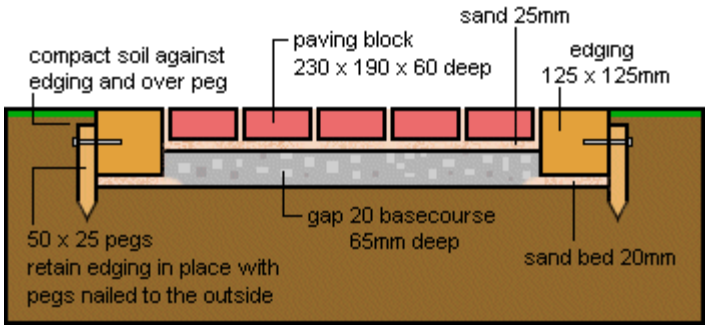


Step 1: Excavations Dig out the proposed pathway to a depth of 150mm below finished path height (usually existing ground level) and the required path width. Try to plan the width of the path so that full pavers can be placed without the need for cutting. When working out the overall path width, allow an extra 3mm between each paver (spacings that allow sand to penetrate around the pavers). Some pavers have space nibs (packers) already on them.

Step 2: Putting down the edging. Lay a bed of sand along each side of the path excavation approximately 40mm thick and about 200mm wide. Lay the edge boards (125x125 senton posts) on top of the sand and tamp down into place until the top of the edge boards are at the required path finished height. Retain them in place with stakes nailed to the outside and trim the stakes off 20mm below the top of the edging board. (see drawing below)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Paving Block Path - cross section:



Step 3: Base course Add a layer of GAP 20 base course in between the edging boards. (GAP 20 is a mixture of rock. The abbreviation, GAP 20, **G**eneral **A**ll **P**assing, means the metal is graded to one certain size, 20mm in this case, and everything below this size is included in the product).
Add and compact the base course with a mechanical plate vibrator until the finished height is 85mm down from the top of the edge boards. At the same time compact the soil against the outside of the edge boards thus ensuring they stay in place parellel.
You can hire a plate vibrator from your local hire centre.

Step 4: Bedding sand Add a layer of bedding or paving sand (approximately 35mm) and level with a screeding board so the finished height is 50mm down from the top of the edge boards.

Step 5: Laying the paving stones Commence laying the pavers from one end of the path. (work uphill). Space the pavers approx 3 mm to allow filling sand to penetrate around the pavers. Kneel on a board across the area you have already laid. Use full pavers only, go back later and fill in with the cut ones.

Step 6: Compacting and putting in joint sand The pavers should now be, prior to compacting, 10mm above required finished height. Compact the pavers consistantly with the plate vibrator. The final step is to brush jointing or filling sand over the surface. This fills the joints and binds the pavers together. Vibrate again.

note 1: Purchase all the pavers from the same place and batch to ensure consistancy of colour.
note 2: Any paving against buildings should be at least 150mm below concrete floor level or below ground level under timber floors. The paving should slope away from the building.

Materials	
MATERIALS	INFORMATION
125x125 senton posts, h5 treated	comes in various lengths. Sold at most timber merchants.

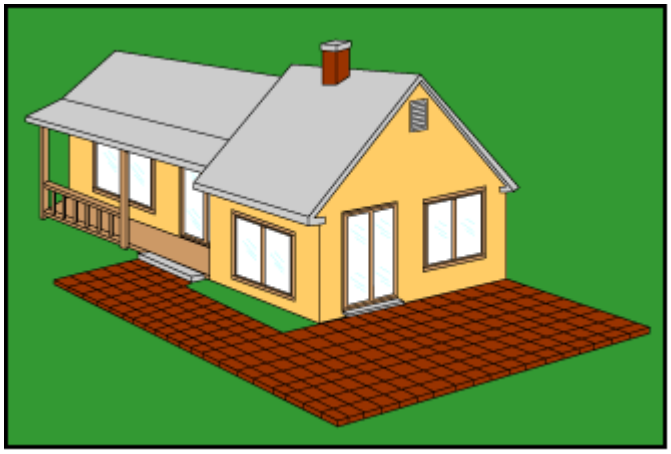
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Cobblestone paving blocks. 230mm x 190mm x 60mm thick	A common paver. Comes in a variety of colors. Requires 23 pavers per sq meter.
Paving / filling sand	Sold loose in increments of quater cubic metre. or in handy bags (more expensive). One cubic metre would be enough to do a path 1m wide x 30m long or 30 sq metres
GAP 20 Base course	GAP 20, **G**eneral **A**ll **P**assing, is a mixture of crushed rock graded to 20mm and everything below. One cubic metre would be enough to do a path 1m wide x 12m long or 12 sq metres

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Laying a Brick Walkway or Patio

OVERVIEW



Introduction

The durability and aesthetic characteristics of brick patios and walkways make for the foundation of great spaces around your home. While installing brick walks and patios is not a difficult task, it may be rather time consuming depending on the size of the patio or walkway. When laying brick that will be walked on it is necessary to use paving quality bricks. These bricks are generally fired longer and at a higher temperature making them more suitable for a variety of weather conditions and more durable to wear and tear. Be sure that you have all the materials necessary for your project before you begin. You may want to have the materials delivered to your home to minimize wear and tear on your vehicle, and on your back!

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

- Beginner - This is a project for all skill levels. Time invol
- Intermediate - This is a project for all skill levels. Time invol
- Advanced - This is a project for all skill levels. Time invol

CAUTION Be careful when lifting and transferring bricks. Be sure that you use proper lifting techniques. You may want to use a back brace as lifting and carrying bricks can strain your back.

HELPFUL TIP Map out where you want your patio or walkway using a garden hose. This will allow you to visualize a variety of designs before you begin.

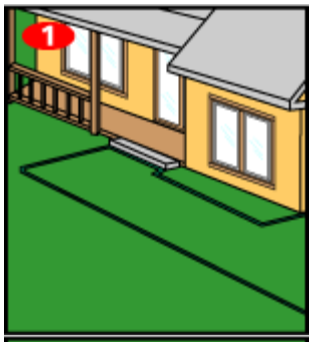
HELPFUL TIP If you live in the north where winter means snow and ice, you will want to use SW (severe weather) rated bricks. These bricks cost more but will resist cracking under cold weather conditions.

HELPFUL TIP If you live in the north where winter means snow and ice, you will want to use SW (severe weather) rated bricks. These bricks cost more but will resist cracking under cold weather conditions.

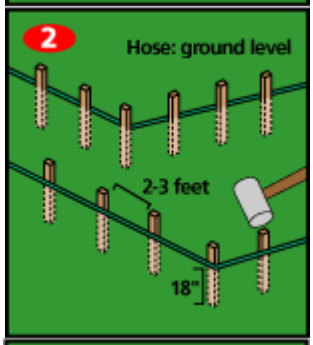
STEPS

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

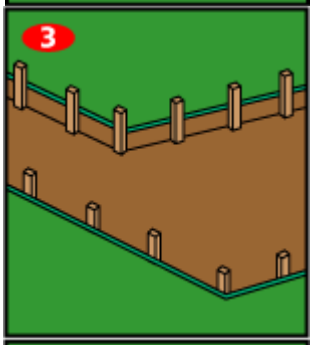
1. Lay out the area in which you want to install bricks for your patio or walkway. Use a household hose -- it is a great tool to lay out the area.



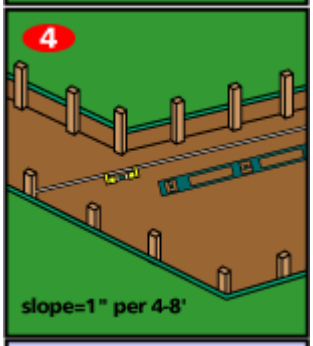
2. Drive wooden stakes about 18 inches into the ground every 2-3 feet around the perimeter of the planned patio or walkway. These stakes will outline the area that you will dig out for your new patio or walkway and be used to line up your bricks.



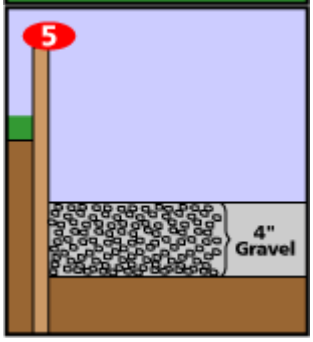
3. Remove the grass and dirt making the edges completely vertical. You should dig down about eight inches to assure that you have room for the base layers upon which your bricks will lie.



4. Be sure that the dirt is leveled appropriately for your project. Walkways should be level across the walk, and have a gentle slope. Patios should be nearly level in all directions. You should round out your brickwork slightly so that water runs off the edge of it instead of puddling in the middle. You should create a slope of about 1" for every 4-8 feet. Use a 4-foot level or a string level and make any adjustments as needed. As you add new layers to the dirt, confirm that your slope is maintained throughout.

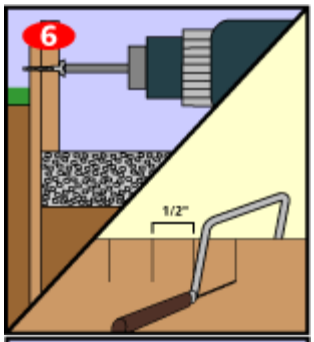


5. Put a layer of gravel about 4 inches thick in the bed and tamp it down. Again, be sure that the level of the gravel is even as appropriate to your project.

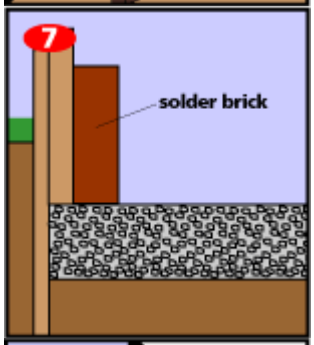


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

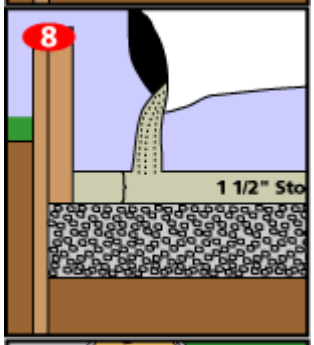
6. Secure the wooden strapping to the stakes using wood screws to define the edges of the walkway or patio. If there are curves in the border of the patio or walkway you will need to kerf the strapping. This is accomplished by sawing part way through the wood against the grain about every ½-inch. This will allow you to bend the strapping to fit the desired curve. Alternately, there are now plastic forms available to define the edge of your bricks. These stay in the ground and act as a permanent lateral support for the bricks.



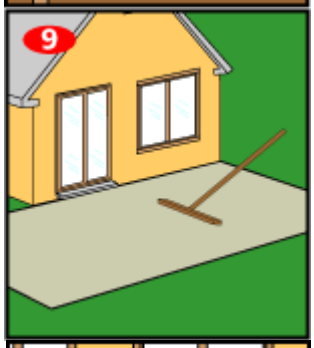
7. If you want to border the patio or walkway with solder bricks (bricks standing on end face to face) put them in place now along the edge of the strapping.



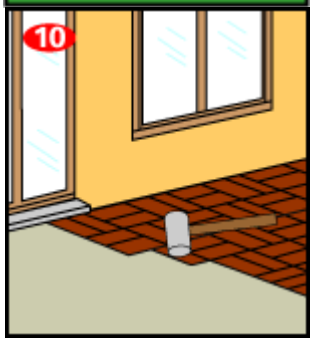
8. Fill the bed with about 1-1/2 inches of stone dust. Stone dust is an excellent underlayment to the bricks, as it will act almost as concrete once it has been wet and dried a few times. Be sure that you account for the depth of your bricks and only lay down enough stone dust to be sure that your bricks are level with the surrounding landscape.



9. Tamp the stone dust, and level it using a strip of wood while keeping it moist with water. Check it every few feet with a level to be sure that you maintain the appropriate curve to your patio.



10. Lay the brick over the stone dust, tamping each brick with a rubber mallet. Brick scars easily so do not use a regular hammer. You have a few alternatives to the pattern that you choose. The easiest and most versatile is the basket weave as it is attractive and easily rounds corners.

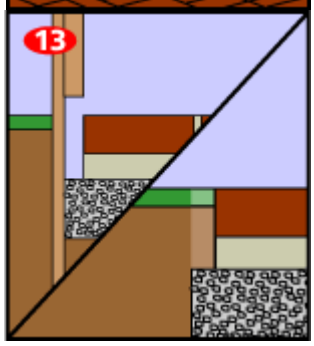


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

11. Once all of the brick is in place, spread another layer of stone dust over the brick and carefully sweep it into the cracks between the bricks and along the edge.

12. Spray water over the brick to secure them in the stone dust. The stone dust will harden much like concrete over time.

13. Leave the wooden strapping in place for at least a week to allow the walkway or patio time to settle. Carefully remove the strapping by pulling it straight out. Fill in the hole with topsoil and seed to replenish the grass next to the brick.



SHOP LIST

Materials List
Bricks
Wooden stakes - 2 feet long
1x3 wooden strapping
Drywall screws
Gravel Stone dust

Tools List
Shovel (flat edged shovel is best)
Hand saw
Broom
Level
Garden hose
Tamper
Rubber mallet
Screw gun

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

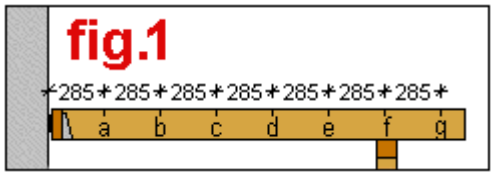
Laying a Deck Straight

A method of laying decking straight

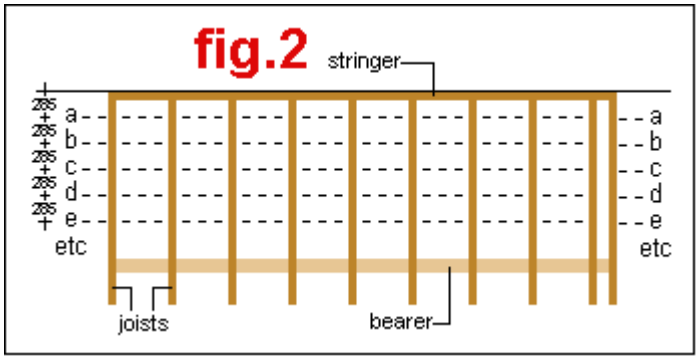
Assuming the joists are fixed in place. If not go to **How to Build a Deck**

This is an ideal method of how to lay decking straight and is most suitable for extra long decks. It involves 'pinging' a **chalkline** where every third decking board is to go, giving a perfectly straight line of where to fix that decking board to.

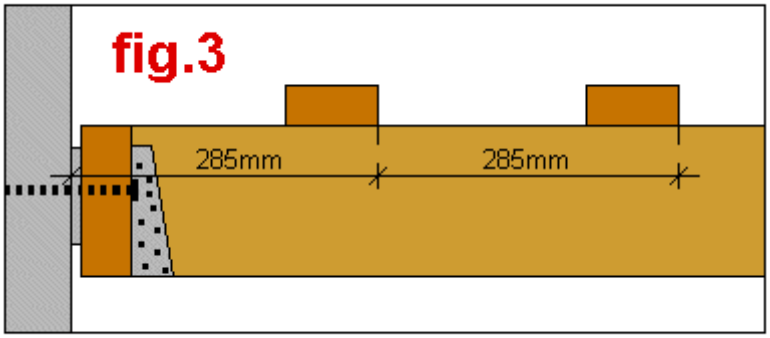
Step (1) Along the two end joists, mark the outside edge of every third decking board. Start out from the building the deck is attatched to. eg: If a decking board is 90mm wide (a standard deck board usually is) plus a gap of 5mm, then three decking boards including the gap would equal 285mm. Therefore mark along the two end joists, out from the building, increments of 285mm. **See fig.1**



Step (2) Mark a straight line, using a **chalkline**, from one end joist to the other end joist, from A to A, B to B, C to C etc. **See fig 2**



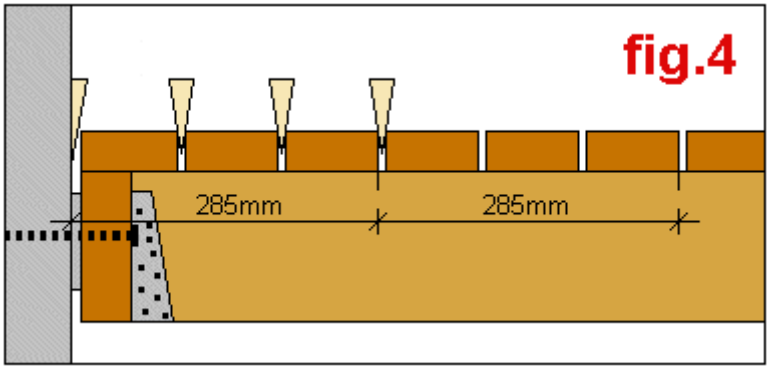
Step (3) Lay and nail every third row of decking board on the building side of the **chalklines.** **See fig.3.** Make sure any necessary joins are made on joists. Let the decking overhang the end joists.



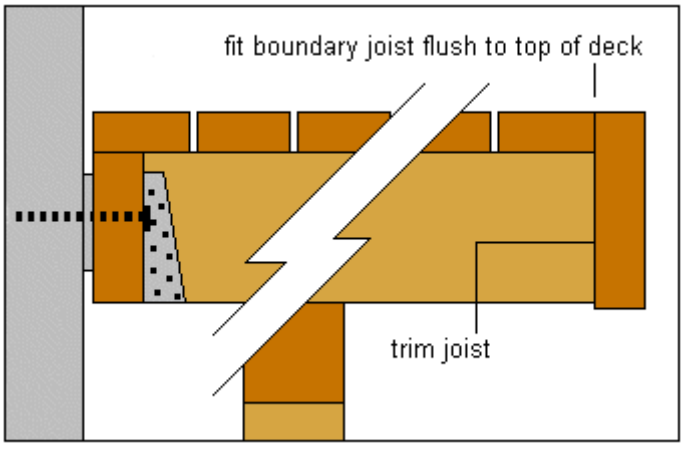
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

What's a chalkline?
A chalkline is a builders stringline (a piece of string) saturated with powdered chalk, usually coloured. The line is held taut at two points and then 'pinged' (in a bow and arrow type motion). The chalk flicks on to the timber or material that the chalkline is 'pinged' against and leaves a perfectly straight line. Chalklines can be purchased from any building supplier and are relatively inexpensive.

Step (4) Lay the intermediate deck boards inbetween the fixed deck boards and make the gaps even, using wedges to adjust where needed. This is done by eye. Nail the deck boards to the joists. Use 60mm galvanised jolts for kwila and 75mm galvanised jolts for 35mm thick pine. The kwila should be drilled before nailing to avoid splitting. Ensure any joins are staggereg between rows (no two joins should be next to each other). see fig.4
Let the decking overhang both end joists while laying, and then trim them flush with the outside of the end joists.



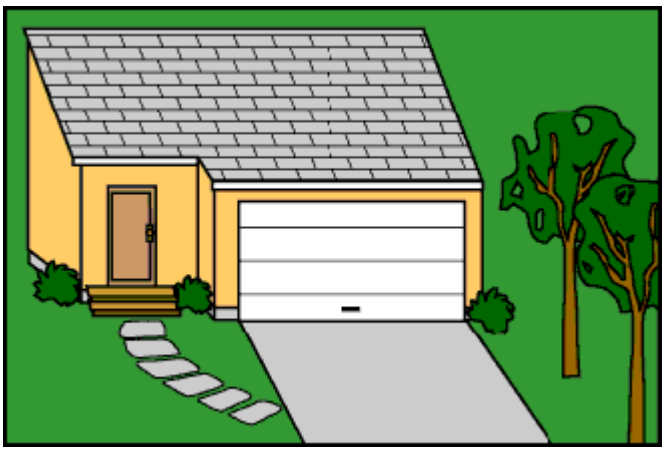
Step (5) Cut the joist ends vertical and flush with the outside edge of the last decking board. Nail the boundary joist around the perimeter of the deck making sure the top of the boundary joist is is flush with the top of the decking. See diagram below.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Laying Stepping Stones

OVERVIEW



Introduction

Do you need a simple, yet attractive way to move about your yard or garden? Stepping stones create a very natural looking walkway through a garden or to the front door of your home. There are a multitude of materials that can be used as stepping stones, everything from large flat field stones that you have unearthed from your gardens to flag stone or the manufactured stepping stones found at the local garden shop. These represent only a few of the choices that you have available.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

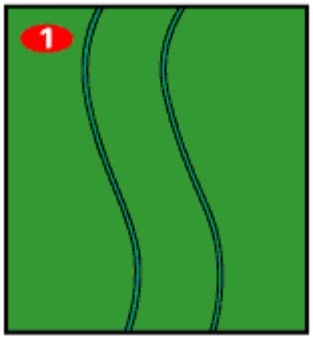
- Beginner - 4 to 6 hours
- Intermediate - 3 to 5 hours
- Advanced - 3 to 4 hours

CAUTION Make sure to wear safety goggles and gloves when cutting stones for this project.

COMMON MISTAKE Your stones should be at least 2 inches thick, as thinner stones may crack.

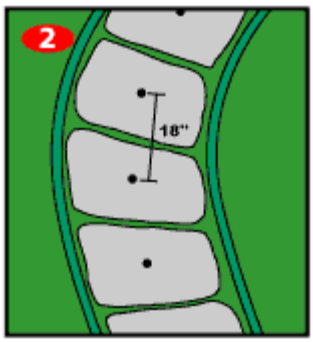
STEPS

1. Begin by marking your path using 2 lengths of rope or 2 garden hoses. You should consider the path that you would like to take and consider laying the hoses out straight or in a curved fashion.

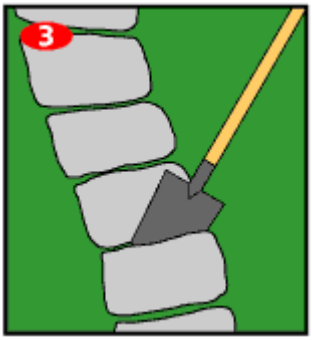


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

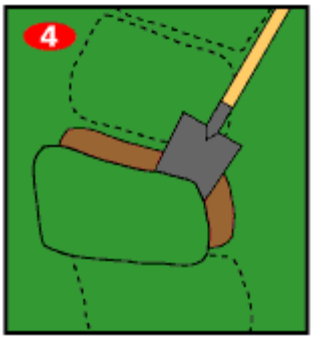
2. Position the stones on the ground so that you can adjust the pattern and distance between stones before digging the holes. Keep in mind that a natural stride is about 18 inches so you will want to place the stones so that each stone is 18 inches from the center of the next.



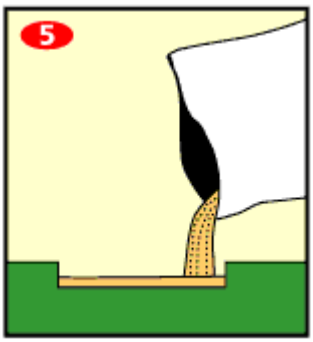
3. Leave the stones in place and dig straight down with the trowel or flat spaded shovel to outline each stone in the earth below each.



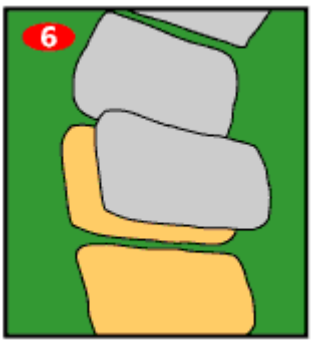
4. Then remove the stone and dig out the sod and earth within the outline so that the stone will sit about an inch above the ground once you have poured an inch of sand into the hole. You will need to consider the thickness of each stone in this step.



5. Pour about an inch of sand into the hole and level the bottom of the hole, so that the stone will lay flat.

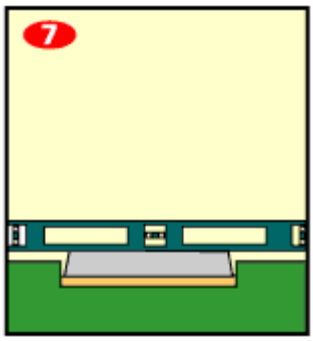


6. Place the stone into the hole.

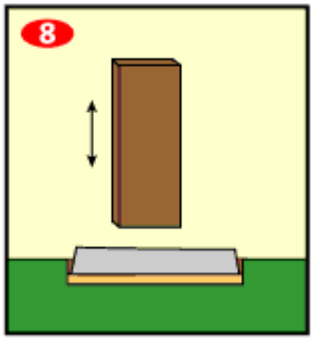


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

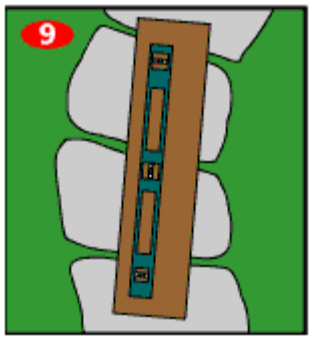
7. Use the level to make sure the stone is relatively level. Push on the stone to make sure it does not rock. You can add or remove sand to accommodate for oddly shaped stones at this point.



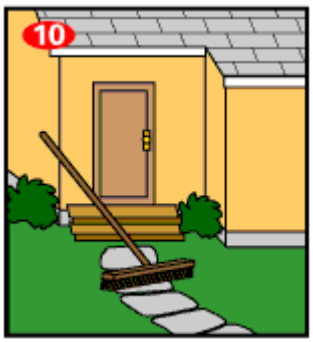
8. Once the stone is level, fill in the area around the stone with soil and tamp it firmly.



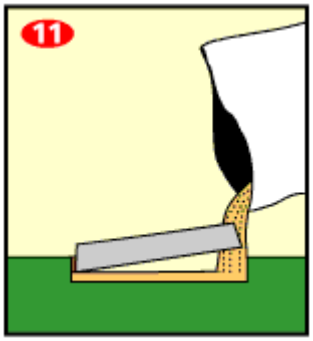
9. Make sure that the stones are about the same height by laying a board across a few stones and using the level.



10. Once you have completed the walk sweep each stone so that each is clean.



11. Over time you will find that the stones will settle. You can adjust the height or the level of the stones by simply lifting the stone and filling in the hole with some sand or soil.



SHOP LIST

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Materials List
Your choice of stepping stones
Sand

Tools List
Tape measure
2 lengths of rope or garden hose
Trowel or narrow flat spaded shovel
Level
5 foot 2x4

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our decorating guide, in this part of the guide we will take you through the process of cross lining a wall.

To complete this task you will need the following items:	
• Lining Paper • Suitable Wallpaper Paste • Wallpaper Pasting Brush • 2 Trestle tables (or step ladders) and two scaffold boards (there should be a local company where these items can be rented) • Suitable filler (if required) along with a suitable applicator	• Tape Measure • Spirit Level • Blunt Pencil • Paperhanging brush • Suitable Scissors • Decorating table (pasting table)

When working at heights always ensure that the structure is safe and secure. Never stretch out, always get down and re-position the scaffold.

Lining Paper.

The benefits of hanging lining paper far outweigh the work involved, especially if you are going to hang expensive or embossed wallcoverings. Lining paper hides any imperfections on the wall and gives an ideal surface onto which to hang your wallcovering.

NOTE: If you intend to hang the lining paper vertically (for painting) then see our guide to hanging wallpaper.

The lining paper should be hung horizontally (across the wall) if you are going to hang a top covering as this stops the edges of the lining paper and the wallcovering falling in the same place and protruding, it also reduces the risk of the final covering upseating the first.

Roll Calculation

The first thing is to establish how many rolls of lining paper are required, to do this you use a simple calculation.

1. Divide the drop by the width of the lining paper roll.
2. Multiply this figure by the perimeter of the room.
3. Divide by the length of the roll.

For example say the drop (room height) is 2m and the roll width is 0.60m wide that gives: **2m ÷ 0.60m = 3.4 (rounded up)**

and let's say the room is 14m in perimeter (including doors/windows) that means the next part of our calculation is: **3.4 * 14m = 48 (rounded up)**

and finally let's say our roll of paper is 11m long, that gives us: **48 ÷ 11 = 4.37 (rounded up)** so we need **5 rolls** of lining paper.

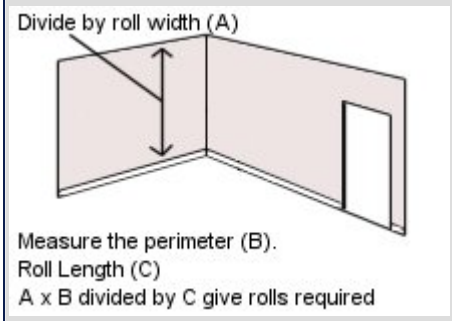


Fig 1.1

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Preparing the Walls

Firstly make sure your trestles and boards are set at the right height and are safe and secure.

If the walls have an old covering then remove it (see our guide to stripping wallpaper) making sure to get rid of every trace of wallpaper.

Inspect the wall surfaces for cracks, holes and any loose plaster.

For small cracks use a suitable fine filler, for larger cracks and holes use a stronger more suitable filler (see manufacturer's instructions).

To check for any loose plaster, tap the wall around any suspect areas, remove any loose plaster and repair with a suitable plaster repair product (filler if the damaged area is not too big).

When filling try and leave a nice smooth finish, it is better to leave the filled area slightly proud of the surrounding area and then sand down with a fine sandpaper until flush.

Fig 1.2

Prepare the lengths

First read the manufacturer's instructions on the paste packet, usually paste takes about 20 minutes until it is ready to use, if this is the case then mix the paste now and it will be ready when you need it.

Take your tape measure and pencil, measure down from the ceiling the width of the roll, mark it with your pencil and then take your spirit level and mark a guide line across the wall level with your first mark (see **Fig 1.3**).

Now measure the length of the wall and add 10cm, take the roll of lining paper and cut as many lengths as you need (remember it is the length of the wall plus 10cm) for the one wall.

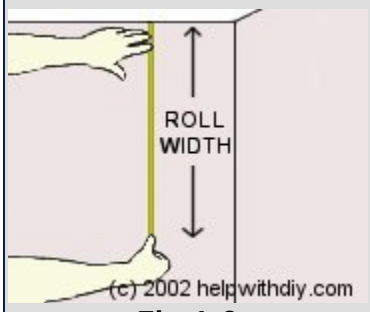


Fig 1.3

Pasting the lining paper

Place one of the lengths of paper face down on the pasting table, ensure you have allowed enough time for the paste to thicken, take your pasting brush and apply the paste to the first length, starting at one end, work the paste evenly over the paper working from the middle to the edges (see **Fig 1.4**), fold the paper into a loose concertina as you work, this will make the paper easier to work with. Allow the paper to soak for as long as instructed (see label).

Fig 1.4

Hanging the lining paper

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Now take the paper holding the end in one hand and the concertina section in the other. Put the paper into place butting the end into the corner and lining up the bottom edge with your guide line (see **Fig 1.5**), then work the paper with your paper-hanging brush ensuring not to leave any air bubbles under the paper.

Unfold the paper as you go along the wall removing any air trapped with your paper-hanging brush. When you reach the end push the paper into the corner (there should be 10cm to trim) and then run a blunt pencil or the back of the scissors down the fold as a guide (see **Fig 1.6**), pull the paper away from the wall and then trim the paper using the fold as a guide, then smooth the paper back onto the wall.

Now take the next length and paste as before (if the paper needs a long time to soak you may wish to paste more than one at a time), butt it up against the first length and work your way along the wall as before ensuring to remove all trapped air.

When you hang the last length the chances are it will need trimming along the bottom of the wall. To trim push the paper into the edge and mark along the paper with your blunt pencil, pull the paper away from the wall just enough for you to be able to trim along the line with your scissors.

Now move onto the next wall and repeat the process, once you have lined the whole room, allow the paper 24 hours to dry out before hanging the top covering.

Fig 1.5

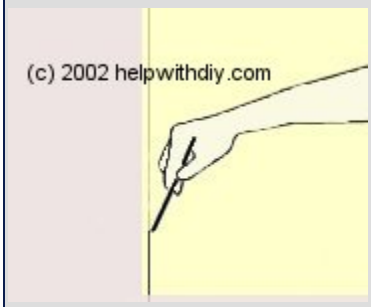
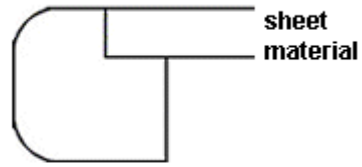


Fig 1.6

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Man-made board page 1

general - plywood - chipboard - edge laminated softwood board - blockboard - hardboard - mdf - stirling board

General

Store any sheet material in dry conditions, stacked flat. Do not place directly on a floor surface (unless a dry, timber floor). Always use sufficient bearers to prevent the panels sagging or distorting. Care should be taken to protect edges. Where the panels are to be stored for a prolonged period, additional bearers should be installed.

Sheet material tends to sag if a load is applied to it (such as books on a bookshelf), the sag does not immediately appear but will gradually develop over time. Where possible, fit a support batten to all sides, This is often fairly easy along the ends and the back of the shelf - the front can be more of a problem. The picture to the right shows the use of a piece of machined softwood (50x50) along the front edge of a shelf which not only adds an attractive finish, but also provides added stiffening. This shelf is about 1.2m unsupported; for shorter lengths, smaller sized softwood can be used.

Right shows a sectional view of the machined softwood used to support the front of a shelf made from sheet material.

Sheet material is often supplied in large sheets, these can be heavy and awkward to move.

To cut the sheets accurately using a power saw, fix a batten across the sheet to guide the side of the saw's sole plate. Make sure that the batten is not too thin as it may flex sideways as you work along it.

Only cut sheet material which is well supported and stable, remember that having cut though the sheet, there is going to be an offcut; nothing to worry about if it is a 25 mm strip of 3 mm ply (but you will still have to hold it), but it will need full support if it is half a sheet of 32 mm ply. If the offcut is heavy and unsupported, it will twist away before the cut is complete and cause damage to the cut edge, and possible damage to the saw/ injury to the operator. Always take the required safety precautions.

Plywood

Plywood is probably the most widely available manufactured board material. It is made by bonding together a number of thin veneers of softwood or hardwood - or a combination of each. There is always an odd number of veneers and the direction of the grain runs alternately to give the material strength; the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

more veneers used, the stronger the plywood. Both the type of glue and veneers determine the suitability of a sheet for a particular application. The finish quality of plywood varies enormously, some have attractive grains while others can have a large number of knots.

- Exterior grade plywood (WBP - Weather and Boil Proof) is specially made using a water-resistant adhesive to withstand a certain amount of moisture and can be used for outdoor constructions - sheds etc. and is sometimes used as a cladding material, particularly for insert panels under windows. WBP does require additional protection (paint or varnish) to protect the outer veneer.
- Internal plywood is of a similar quality as Exterior grade but it does not use water resistant adhesive. It can be used for wall panelling, flooring and furniture.
- Shuttering Ply is used in the construction industry for making shuttering boxes for containing concrete while it goes off. Although water resistance to a degree, the sides of this material are not finished with a decorative veneer and is generally not suitable for use where the a quality finish is required.
  Marine Plywood is made with waterproof adhesive so that it will stand immersion in water, the veneers themselves will not last forever under water so the material should still be finished with paint or varnish.

Plywood is normally available in 2440 x 1220 sheets (or subdivisions) and in thicknesses from 3 to 35 mm.

Working with plywood

If the sheets are to be used in a centrally heated room, store them in similar conditions before use so that the moisture content of the sheets will stabilise before installation - this will avoid shrinkage later.

Cutting

To avoid damage to the finishing face, cut into the panel from that face - for hand sawing have the face upwards, for power sawing have the face downwards. To reduce the damage, score through the outer veneer on both sides of the sheet using a sharp knife before starting to saw.

Thin sheets (upto 3mm) can be cut using a sharp knife.
From 3 to 6mm use a tenon saw.
From 6 to 12mm thick, use a fine tooth panel saw.
For thicker sheets use a coarse tooth panel saw.

Power saws can be used with thicker material but are more likely to damage the outer skin where the saw cuts away from the material.

Fixing

Plywood may be fixed in place with adhesive and screws or nails.

Generally only small screws grip well in thick plywood itself but even then they will not stand up to repeated changes in force. When fitting hinges to any thickness, use bolts with large washers and nut to 'squeeze' the sheet. It is not practical to screw or nail into the edge of plywood.

Where a corner joint is required, fit a softwood batten in the corner so than both sheets of ply can be fixed to it.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

For thin material, always fix plywood to a pre-made frame, use glue and panel pins (on about a 200mm pitch), use a punch to knock the head of the pins below the surface. The frame should support all edges of each plywood sheet and at about 400mm centres (for 6mm ply), 600mm centres (for 9mm) or 900mm centres for thicker material.

Knocks to the edge of ply can cause damage to all the veneers which is hard to rectify, so fit a thin strip of softwood along the finished edge or put a rebate in the frame so that the edge of the plywood can be recessed. This will also improve the appearance as the edge of plywood is not very attractive.

When gluing plywood, roughen the surface with coarse abrasive paper and brush clean before applying the glue. Spread the glue evenly and apply pressure.

Finishes

Plywood which is supplied with a decorative veneer can be varnished or painted but to get a really smooth surface will need good preparation as most plywoods are not as smooth as planed timber.

Sheets are also available with pre-printed faces such as mock panelling.

Edge laminated softwood board

At first sight, edge laminated softwood board can look like one piece of timber, but it is actually made up of narrow (25 to 100 cm) strips of softwood glued edge to edge. This board is ideal for making furniture where the natural gain can be left exposed.

Boards are available in a number of thicknesses (15, 18, 22, 28mm), widths (400, 450, 500, 600 mm) and lengths (1.2m to 2.1m). This wide choice means that the appropriate sheets can be selected to suit the job while minimising waste. Some DIY superstores stock a surprisingly small range, so it may be necessary to visit a 'real' builder's merchant to see a wider range.

Working

Edge laminated softwood board can be worked as ordinary softwood. Boards should be stored flat.

Fixing

Edge laminated softwood board can be screwed, nailed or glued just like ordinary softwood timber.

Finishing

Generally where edge laminated softwood board is used, it is desired to leave the grain visible by finishing with stain, varnish, wax, or actually leaving it untreated. Most common formulations for these finishes can be used without affecting the board.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Chipboard

Chipboard is made by bonding together wood particles with an adhesive under heat and pressure to form a rigid board with a relatively smooth surface. Chipboard is available in a number of densities; normal, medium and high-density. Normal density is fairly soft and 'flaky', high-density is very solid and hard (often used for worktops and fire doors) - medium density is somewhere in between.

There are exterior grades of chipboard available but most are only suitable for internal use as all but high-density tend to soak up water like a sponge. Once water logged, chipboard tends to swell and breakdown.

Veneered Chipboard is widely used for self-assembly furniture, work surfaces, wall linings and partitions. High-density chipboard is often used as a basis for the carcasses of kitchen furniture, worktops, and flooring - this is hardwearing, rigid and heavy.

Other grades available are standard, flame-retardant, flooring, and moisture-resistant.

Chipboard is normally available in 2440 x 1220 sheets (or subdivisions), finished veneered sheets are available in smaller sheets so that the four decorated edges do not need to be cut. Thicknesses range from 12 to 25 mm.

Flooring grade chipboard is marked 'flooring' and no other should be used. It is normally available in 2440 x 1200 and 610mm sheets and in 18 and 22mm thicknesses with tongued and grooved edges for easy laying and fixing. Before using flooring grade material check it is suitable for your floor joist spacing.

Working with chipboard

Apart from high density chipboard, the finish after cutting is generally poor. As with plywood, veneered chipboard should be cut with the saw blade going into the finish face to prevent the finish veneer chipping. To reduce the amount of damage when cutting chipboard, apply a strip of masking tape along the line of the cut and cut through the tape.

A panel, circular or jig saw can be used.

Fixing

Nails, pins and screws may be used on normal chipboard, but they should always be fixed through the chipboard and into a support. If you pin, nail or screw into chipboard, the fixings may pull out easily. With high density chipboard nails, screws and fixing can be used. The

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

screw-holding power is improved if double-threaded or chipboard screws are used. Follow the manufacturer's instructions for fixing special purpose boards.

Any woodworking adhesive may be used with chipboard although when it does fail, normally the outer 'chips' separate from the rest of the board. Do not rely on gluing only to support heavy weight.

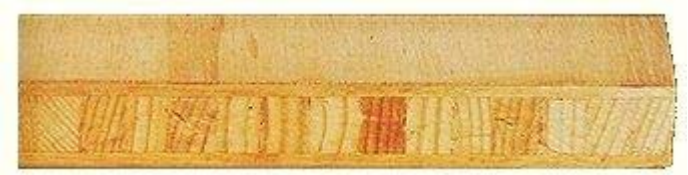
Finishing

Generally only laminate chipboard will give a satisfactory finish although laminate or self-adhesive decorative film can be used.

Edging (normally self adhesive) strip is available to add laminate type finish to sawn edges of pre-laminated chipboard.

Ordinary chipboard is fairly unattractive on its own but if you want to paint it, use oil based paints - using water based paints can cause chipboard to swell.

Blockboard



Blockboard is composed of a core of softwood strips (up to about 25mm wide) placed edge to edge and sandwiched between veneers of hardwood, the 'sandwich' is then bonded under high pressure.

An interior grade adhesive is normally used, so blockboard is not suitable for use out of doors.

When using blockboard for such items as a door or a long table, make sure the core runs lengthways to give maximum strength. Blockboard can be used for shelves, doors, panelling and partitions.

Blockboard is normally available in 2440 x 1220 sheets (or subdivisions), thicknesses tend to be limited to around 30mm.

Working with blockboard

Fixing

Providing that screws or nails miss the joints of the inner strips and enter the strips in a sound position, they will give good fixings - but it is a bit of a gamble as you cannot see where the fixing is going.

Finishing

The edges of blockboard do not clean up well and are not very attractive, so cover exposed edges with a decorative strip of softwood or fill and paint them.

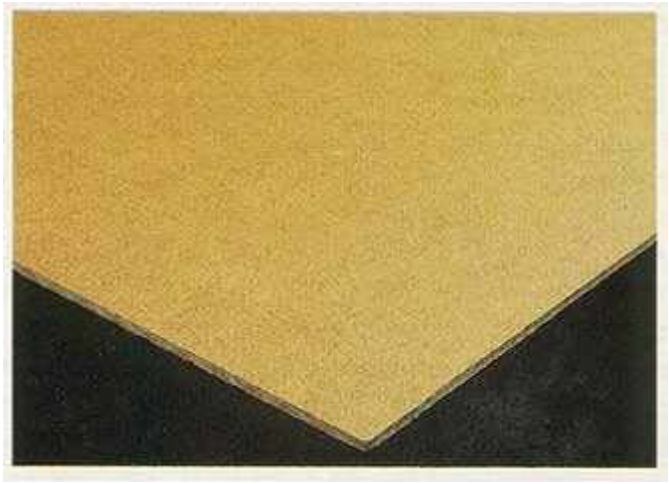
The surfaces of standard boards can be painted, while pre-finished boards are available with a variety of applied surfaces such as decorative wood veneers and plastic laminate facings.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Blockboard has a good resistance to warping if both sides are left natural or painted/papered. If only one side is finished, then surface tensions build up which will cause the sheet into a bend.

Man-made board page 2

general - *plywood* - *chipboard* - *edge laminated softwood board* - *blockboard* - *hardboard* - *mdf* - *stirling board*



Hardboard

Hardboard is a compressed, composite board. Fibre residuals are saturated in a wet process and then compressed to a sheet. A fine fibre overlay is applied (normally to one side) to provide smooth face.

Three basic types are available - standard, medium and oil-tempered. A number of specially finished boards are available for specific purposes.

- Standard
  With a smooth surface on one side and a mesh texture on the other, this can be used for wall and ceiling panelling, floors, door panels, built-in cupboards and fitments etc.
- Medium
  This is less dense than standard hardboard but it is thicker and so more rigid. There are two types: LM (low density) which will take drawing pins and can be used for pin boards and notice boards, and HM (high density) which is suitable for wall and ceiling lining, partitions.
- Tempered Treated
  This is usually treated with oil to give extra strength and water resistance, it is particularly suitable for exterior use.

As well as being supplied in flat sheet form, hardboard is also available with various designs of perforations (to act as peg board or decorative grills) and with 3D decorative designs on one face (usually ridges or similar repeat patterns).

Working with hardboard

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

When handling hardboard, take care not to damage the surface of the finish face. If a full sheet twists it can tear across the whole width.

Conditioning

To prevent sheets buckling due to a change in moisture content, manufacturers recommend they should be conditioned before use. There are two ways of doing this.

- For standard and LM (low density) type medium and tempered boards, scrub the backs with water, using I litre to every 2440 x 1220mm sheet. Then stack the sheets flat, back to back, for 24-48 hours (48-72 hours for tempered boards).
- For HM (high-density) type, medium boards and all boards to be used in centrally heated surroundings, stack the sheets on edge in the room where they are to be used, separating them with wood off cuts to allow the air to circulate. Leave HM medium boards for 48 hours and other boards for 72 hours before using them.

Use a fine tooth saw and cut into the face of the board, supporting it on both sides of the cutting line. Pre-decorated and plastic-covered boards should first be scored along the cutting line using a sharp knife and straightedge to prevent the edges chipping.

Fixing

Hardboard may be fixed by screws, hardboard pins, nails or adhesives; follow the manufacturer's recommendations relating to the particular type of board and its use. The heads of hardboard pins are designed so that they 'disappear' into the surface after they have been hammered home.

You can use general purpose impact adhesive (for instant fixing) and woodworking PVA or synthetic resin-based ones - where possible, pin or cramp the work piece while the glue is setting. Generally the glue only bonds to the top surface of hardboard and if a joint fails, it is generally not the glue but the top surface of the board which separates from the underlying board.

Finishes

Knocks to the edge of hardboard will cause damage, so fit a thin strip of softwood along the finished edge or put a rebate in the support frame so that the hardboard can be recessed.

Hardboard which is not already primed should be treated with special hardboard primer/ sealer before being painted or papered. Diluted emulsion paint (one part of water to four of paint) or aluminium paint may be used as a primer unless the surface is to be papered. Wood primer should not be used.

Hardboard is normally available in 2440 x 1220 sheets (or subdivisions) and in thicknesses from 2.4 to 13 mm.

MDF (Medium Density Fibreboard)

MDF is a type of hardboard which is made from wood fibres glued under heat and pressure. MDF has many qualities that make it an ideal alternative to plywood or chipboard. It is dense, flat, stiff, has no knots and is easily machined. Its fine particles provide a material without a recognisable "grain". Unlike plywood and

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

blockboard, MDF contains no internal voids, and will produce better edges providing that it is correctly machined.

But use MDF with care - it is manufactured using urea-formaldehyde resin which maybe released in low concentrations over a long period of time. Formaldehyde can cause temporary eye and respiratory irritation, it can also aggravate respiratory conditions or allergies in some people. Proper ventilation and precautions during working and use will reduce the risk of such problems. Some people have been reported as being affected by just a piece of MDF in a room.

Working with MDF

Dust is a major hazard when working with MDF. The large amounts of dust generated by cutting and machining requires the use of proper breathing and eye protection. As a minimum, always use a dust mask while there is dust in the air, not just while actually cutting. A professional style respirator is preferable. Goggles should always be worn while using tools on MDF.

MDF can be cut in the same manner as a fine-grained hardwood although as it does not have a grain, it can be successfully sawn in any direction. MDF can also be machined, drilled and tapped.

Due to its high glue content, steel cutting tools will dull very quickly; the use of carbide tools is preferred.

Being without a grain, cutting or machining MDF will result in a very smooth edge providing that the tools are sharp and used correctly.

Fixing

Screws and nails can be used to fix MDF, however with these fixings, there is a risk of the MDF splitting if care is not taken. The risk of splitting depends upon the thickness of material, generally fixings should not be less than 25mm from the edge.

When using nails, drive them in at right angle to the surface, this will avoid bending and reduce the chances of splitting. Use ring-shank nails to ensure a good grip.

With screws, always use pilot holes - about 85 % to 90 % of the root diameter of the screw being used and at least as deep as the screw. Straight sheet metal screws with constant size shank give best results, avoid using tapered wood screws.

Because MDF can be milled to just about any profile, many of the traditional woodworking joints can be used as can dowels.

MDF can be glued using gap-filling or PVA glues. Epoxy and hot melt glues are also suitable. The edges of pieces of MDF can be glued to make larger sheets.

Finishes

As mentioned previously, MDF is typically made using urea-formaldehyde resin which will be gradually released into the atmosphere wherever MDF is used. While this will not affect most people, some people are sensitive to formaldehyde emissions so precautions must be taken. Where possible, use low formaldehyde or formaldehyde-free MDF, or consider methods of controlling these emissions through proper finishing.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Where a finish is applied, it should be applied to ALL exposed surfaces, even those not immediately visible. Finishes that work best at controlling formaldehyde emissions are solid surfaces such as laminates, vinyl covering, and finished wood veneers. Oil based paints and varnishes can be used. Less effective at controlling emissions are simple wax and oil coatings.

Stirling Board

Sterling board is a wood-based panel manufactured from softwood strands compressed and bonded together with exterior grade, water resistant resins. It is readily identified by the random pattern of flattened, softwood strands which make up the surface.

It can be used in place of other sheet materials but due to the surface finish, it is generally restricted to areas where appearance does not matter. Tongue and Grooved is also available for use on flat roof decking and flooring applications.

Working with Stirling Board

Stirling Board can be sawn using either a hand or power saw. No matter how carefully it is cut, the edge will tend to 'lift' on the reverse side. Always make all cuts of a sheet from the same side, then all of the delamination will be on one side.

Fixing

When fixing with nails, use ring shank nails to increase the grip. When using screws, there is generally no need to countersink the holes, as the screw head will compress the board as it is tightened.

Where Stirling board is to be used for roofing:

1. All edges should be supported on joists or other support.
2. Panel edges should bear approx. 20mm onto joists.
3. Nailing should be at least 10mm from the panel edges.
4. Panels should be fixed using approx. 3mm ring shank nails or screws whose length are 2.5 times the thickness of the panel.

Finishes

The surface of the ordinary quality is often considered unsuitable for a finished surface, the strands of wood often lifts slightly and, if pulled, will 'run'. The edge of the panels can become 'flaky' and are easily damaged by careless handling and knocks. This does not matter too much where appearance is not important or where a physical covering (e.g. roofing felt) is to be fixed to it.

Stirling board can be painted. Where a fine finish is required, factory sanded panels are available. With unsanded panels, the surfaces can be wire brushed to remove any loose wafers and resin deposits. Priming and top coating with oil based timber paint can give a good, although not perfect, finish. Water-based products should be avoided as they may cause some swelling of the surface wafers.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

MATCHING SAND AND CEMENT MIXES

Quite often it is necessary to cut out damaged bricks from a wall and while it is relatively easy to match the bricks, matching the colour of the sand and cement, or mortar, is no easy task.

There is no science involved in matching a sand and cement mix to that of your existing wall or property, its just a question of trial and error and even a little research is necessary sometimes.

There are many many types of sand and each type will produce a different colour mortar when mixed with cement. Your property may have been built from a local sand or it may have been imported by a developer who got a great deal from a quarry further afield.

If your house is relatively new it may be worth talking to the local builders merchants to see if the development was built using materials ordered through them. You can try to contact the developers or even the actual builders. Life will certainly be easier if you can track down the sand used.

If you can, all that remains is to match the cement content. This is easy enough and involves getting a small cup or other receptacle and measuring the sand accurately. You then make up several mixes starting at 3 sand to1 cement. Then 3½ to 1, 4 to 1, 4½ to 1 and so on. Do not go past 6 to 1 or the mix will be too weak for ordinary brickwork. Wait until your mini mixes have dries and use the mix closest to the colour of that in your wall.

If you cannot locate the sand then talk to the builders merchants and even the local quarry to find out how many local building sands there are available. Ask if you can have a small sample of each and do the experiment above, but with all the different sands. Its boring and time consuming, but if you do not want your repairs to stand out like a sore thumb, it has to be done!

Some mortars are artificially coloured with a cement dye. This makes the permutations endless. It is important to mix the dye into the cement before you add the water. Dyes are available in a variety of colours from all builders merchants.

We suggest you make up a table, similar to the one below, to keep track of the different mixes.

MIX NUMBER	SAND TYPE	SAND AMOUNT	CEMENT AMOUNT	DYE ADDED

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

1	Soft yellow	3	1	Y
2				
3				
4				
5				

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

MEASURING AND MARKING

SKILL LEVEL

Basic measuring and marking require very little skill, but always double check your results. Sometimes it's handy to have an assistant with you.

SAFETY FIRST

Retractable rules can sometimes snap back quickly, so take care. When marking with a knife, keep your fingers away from the blade, and don't apply excessive pressure.

INTRODUCTION

Accurate measuring and marking are the secrets to success for many projects around the home and garden.

Measuring and marking out help you to work accurately, and are important in the costing of large jobs around the house and garden.

Most products are now sold in metric quantities, but some are still in the imperial system. Always work in one system only - changing between the two is confusing and often inaccurate. Tapes and rules are usually marked in both systems of measurement.

2 - Planning the work

If you are measuring a large area, such as a lawn or patio, have ready-cut pegs to hand for driving in at the important points.

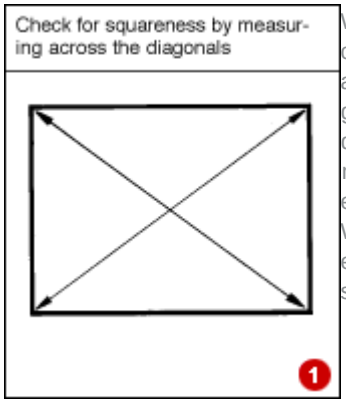
Working with an assistant helps with the measuring and also with checking calculations.

When measuring for smaller projects, using timber, man-made boards, plasterboard and other sheet materials, try to work on a clean surface in good light with all your tools close to hand.

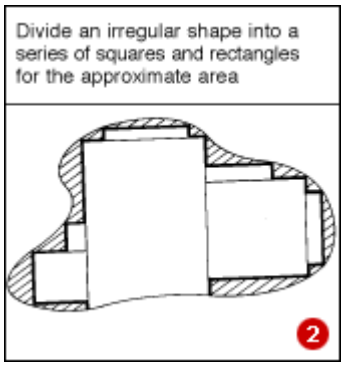
Always allow a margin for wastage and error when calculating materials. This is often better than having to re-order or spoiling the job by skimping.

3 - Measuring large areas

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Where it is important to check the right angles, such as for the base of a shed or greenhouse, or for a formal design with block paving etc., measure the diagonals to ensure complete accuracy. When the diagonals are equal, your base is said to be square (1).



The area of a large, irregular shape can be approximated by measuring square or rectangular areas within it and adding the measurements of these areas together. Make an allowance for the small, irregular areas left at the edges (2).

To find the exact area of an irregular shape, first measure the outside with a flexible tape or piece of string, and call this the circumference. Then calculate as though you were dealing with a circle.

Use the formula pr^2 to calculate the area of a circle, where p=3.14 and r=radius of circle (the radius is the length of a straight line from the centre to the edge of the circle).

Run a piece of string along irregular or curved edges if you need a quick linear measurement, for garden edging, for example.

4 - Working with a straightedge

Straightedges are used mostly to transfer measurements accurately across areas longer than the rule being used. Another use for them is to check that your material or surface is flat. Straightedges are long metal rules that may be calibrated or plain.

The best way to check that a straightedge is accurate is to hold it by one end and look down it. Any curve is obvious.

A straightedge can also be used to cut against with a craft

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

knife, such as when cutting paper, leather, cardboard or plasterboard.

5 - Marking out

Measurements can be marked in various ways, depending on how accurate they need to be. A felt-tipped pen is easily read, and can be used where accuracy is not too critical. A carpenter's pencil is also ideal for easy-to-read measurements.

An ordinary hard lead pencil with a well-sharpened point is fairly accurate for most marking jobs, and it is quite easily rubbed out when required.

For very fine work to be cut, use a marking knife or a craft knife. These not only mark but sever the fibres very slightly to enable further cutting to be very exact (3). The severed fibres leave a whisker-free cut edge.

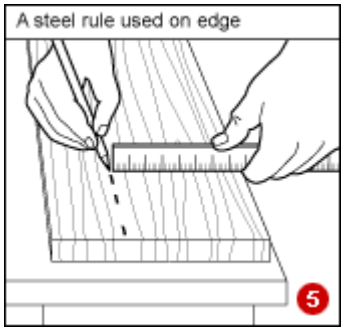
Marking knives have the advantage of leaving no messy marks at all on the surface of the material.

6 - Marking with a bench rule

Bench rules come as either rigid or flexible. The flexible ones are handy for measuring curved surfaces, although very tight curves should be measured with a tape.

Steel rules are very useful, but they do have a tendency to slip on smooth surfaces. Hold the rule down well, with your fingers spread wide along the rule (4).

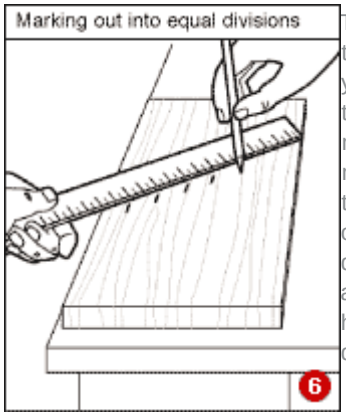
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Using a rigid rule held on edge, with your fingers against the edge of the material being cut, is a quick way to step off the width (5).

Where possible, always measure from a clean, prepared edge. 'Measure twice, cut once' is good advice.

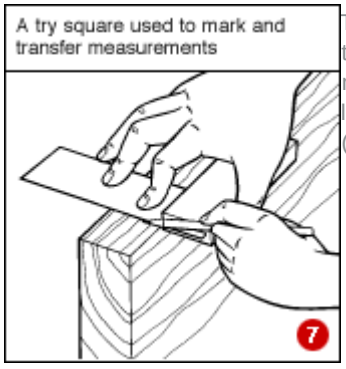
7 - Dividing into equal parts



The simplest way to divide the work equally is to hold your rule diagonally across the surface and decide how many divisions you want to make. Be sure that the end of the rule is level with the edge of the material and the divisions will fall equal automatically. This is very handy for marking out dovetails and other joints (6).

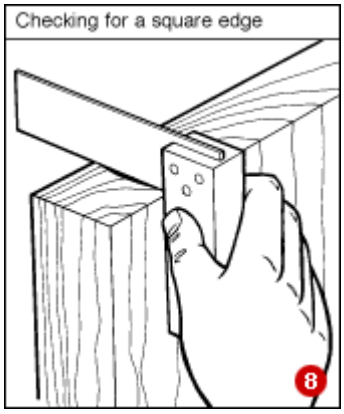
8 - Using squares

Squares are used to produce a line at right-angles to an edge and to transfer one measurement to the opposite side of the material or perhaps all the way round. In this way, they save having to measure each face. They must always be used against a flat, planed edge.

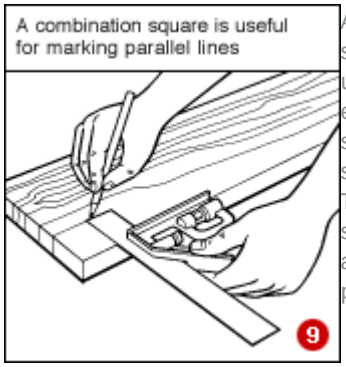


The most basic square is the try square. Use a pencil or marking knife to mark your line against the steel edge (7).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

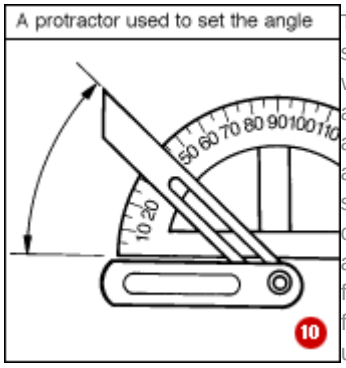


The try square is also used to check that faces are at 90 degrees to each other. The stock of the square is laid flat against one face of the work and a check is made visually to see if light appears under the steel edge (8). If it does, more planing is necessary on the opposite side to the light, to square up the work. The try square is also used to check internal and external angles of assemblies.



A combination square has several uses. Most can be used as either internal or external try squares, mitre squares, depth gauges, straightedges and steel rules. They are usually fitted with a small spirit level. They are also very useful for marking parallel lines (9).

9 - Sliding bevel



The sliding bevel is a specialised type of square, which is infinitely adjustable and which is used for marking and transferring pre-set angles. This is useful for setting out angles for corner cupboards, steps, dovetails and multi-sided picture frames. It is usually set either from an existing angle or by using a protractor (10).

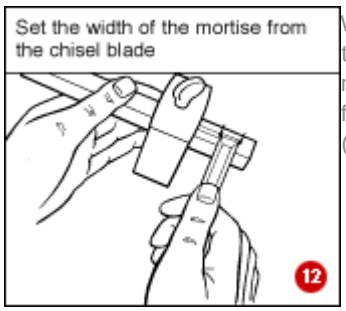
When using the sliding bevel it is essential to ensure that the stock of the tool is held firmly against the edge throughout (11). Tighten sliding bevels well, and occasionally check that they haven't moved in use.

10 - Marking / mortise gauge

These two gauges are often combined in one tool although

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

they can be purchased separately. Each gauge consists of a stock blockwhich slides along a bar. The marking is done with a sharp steel point for a single line, or a pair of adjustable points to mark out a mortise. The stock of the tool is held against a flat square face and the tool pushed along the work away from the user, allowing the steel point(s) to score the wood.



When adjusting the gauge to the width of the mortise you need, set the points directly from the width of your chisel (12).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Metric and Imperial Conversions

Length - *Area* - *Capacity & Volume* - *Weight* - *US measures* - *Temperature*

Some useful conversion (imperial, metric), length, area, capacity, weight, US measures and temperture factors.

Length *Area* - *Capacity & Volume* - *Weight* - *US measures* - *Temperature*

1 centimetre (cm)	= 10 millimetres (mm)	= 0.3937 inches (in)
1 decimetre (dm)	= 10 cm	= 3.937 inches
1 metre (m)	= 10 dm = 100 cm	= 1.0936 yards (yds)
1 kilometre (km)	= 1000 m	= 0.6214 miles (M)
1 inch (in)		= 2.54 cm
1 foot (ft)	=12 inch	= 30.48 cm
1 yd	= 3 ft = 36 in	= 0.9144 m
1 mile	=1760 yd	= 1.6093 km

Area *Length* - *Capacity & Volume* - *Weight* - *US measures* - *Temperature*

1 sq cm	= 100 sq mm	= 0.155 sq in
1 sq metre	= 10,000 sq cm	= 1.196 sq yd
1 sq km	= 100 hectares (ha)	= 0.3861 sq mile
1 sq inch		= 6.4516 sq cm
1 sq yard	= 9 sq ft	= 0.8361 sq m
1 sq mile	= 640 acres	= 2.59 sq km

Capacity and volumes *Length* - *Area* - *Weight* - *US measures* - *Temperature*

1 cu centimetres (cc)		= 0.0610 cu inch
1 cu metre	= 1000 cu decimetres	= 1.3080 cu yds
1 litre (l)	= 1 cu dm = 1000 cc	= 0.2200 imperial gallons (gal)
1 hectolitre (hl)	= 100 l	= 21.997 gal
1 cu inch		= 16.387 cc
1 cu ft	= 6.23 gall = 49.86 pt	= 28.33 l
1 cu yard	= 27 cu ft	= 0.7646 cu m
1 imperial pint (pt)	= 20 fluid ounces (fl oz)	= 0.5683 l
1 gall	= 8 pt = 0.16 cu ft	= 4.546 l

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Weight *Length - Area - Capacity & Volume - US measures - Temperature*

1 gram (g)	= 1000 milligram (mg)	= 0.0353 ounce (oz)
1 kilogram (kg)	= 1000 g	= 2.2046 pounds (lb)
1 tonne (t)	= 1000 kg	= 0.9842 ton
1 ounce (oz)	= 437.5 grains	= 28.35 gram (g)
1 pound (LB)	= 16 oz	= 0.4536 kg
1 ton	= 20 hundredweight (cwt)	= 1.016 tonne

US measures *Length - Area - Capacity & Volume - Weight - Temperature*

1 US dry pint	= 33.6 cu in	= 0.5506 l
1 US liquid pint	= 0.8327 imperial pint	= 0.4732 l
1 US gallon	= 0.8327 imperial gallon	= 3.785 l
1 short cwt	= 100 LB	= 45.359 kg
1 short ton	= 2000 LB	= 907.19 kg

Temperature *Length - Area - Capacity & Volume - Weight - US measures*

Temperature conversion:

degrees C = 5/9 * (degrees F - 32)

degrees F =(9/5 * degree C) + 32

degree C	degree F
0	32
5	41
20	68
30	86
40	104
50	122
60	140
70	158
80	176
90	194
100	212

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Nails

A nail to suit every job, it pays to use the correct type.

Round wire nail. These large round head nails are mostly used for rough carpentry where appearance is not important but strength is essential. They are inclined to split a piece of wood. Sizes from 20- 150 mm (0.75in - 6in).

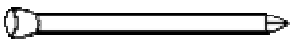
Oval wire nail. Most suitable for joinery work where appearance is important since they can easily be punched below the surface. They are less likely to split the wood if driven in with the longer sides parallel to the grain. Sizes from 12-150 mm (0.5in - 6in)

Round or lost head nail. Stronger than oval wire nails, they can easily be punched below the surface of the wood. Sizes from 12-150 mm (0.5-6in)

Tack. A short nail with a wide, flat head, the tack is used for fixing carpets to floorboards and for stretching fabric on to wood.

Panel pin. Round lightweight nail used for cabinet-making and for fixing small mouldings into place.

Cut floor brad. Rectangular, they have an L-shaped head and are nearly always used for nailing floorboards to joists. Sizes from 25-150 mm (1-6in).



Masonary Nail. Made of hardened steel, this nail is used to fix wood to brick, breeze block and most types of masonry.

Square twisted nail. Twists into the wood. These comparatively expensive nails offer a more permanent, screw-like grip than plain nails.

Annular nail. Useful where very strong joints are required. The sharp ridges round the shank become embedded in the wood to give a tight grip.

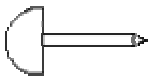
Cloat head nail. Made of galvanized steel, with a large, flat retaining head, this nail is most suitable for soft materials such as plasterboard and roof felt.

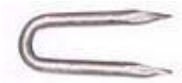
Spring-head roofing nail. For fixing corrugated sheeting to timber. The twisted shank and inverted cup head produces a very strong purchase.

Corrugated fastener. For reinforcing a weak wood joint or for securing mitred or butt joints in rough framing.

Cut clasp nail Rectangular in section, they are difficult to remove and provide a very

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





strong fixing in wood and pre-drilled masonry. Sizes from 25-150mm (1-6in).

Hardboard nail. These have a diamond-shaped head which is virtually hidden when hammered into hardboard. Sizes from 9-38mm (3/8-1.5 in).

Sprig. A small nail without a head. They are used mainly to hold glass in window frames before applying putty which covers them up. Sizes from 12-19mm (0.5-0.75in)

Upholstery nail. Available in chrome, brass and other metallic finishes, they are used as a secondary fixing with tacks. The dome head gives a decorative finish when nailing chair coverings into place. Various head sizes are available.

Staple. U-shaped round wire nails with two points to hold lengths of wire in position. Some staples have an insulated lining for fixing flex and electric cable.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

OUTDOOR LIGHTING

SKILL LEVEL

Basic DIY skills are needed to install new lights and wiring. Connecting things up takes electrical skills and technical knowledge, so if in doubt, employ an electrician.

SAFETY FIRST

Always ensure that the power supply is switched off before starting any work on your home's lighting circuits. It is not sufficient to turn off individual light switches. These instructions comply with the requirements of the current IEE wiring regulations.

INTRODUCTION

Adding outdoor lights will show you and your visitors the way to the front door on dark nights, highlight your garden and help to deter intruders.

A light by your front door is useful, so that visitors can find it after dark and you can identify them easily. Other lights can be used to illuminate side passages, and paths to the garage and back of the house. All can be wired up as extensions of the house wiring.

If you want to install lights some distance from the house, you must use a separate circuit. You can easily install low-voltage garden lights yourself.

2 - Planning the job

Think about what lighting effect you want to achieve, as this will influence the types of fitting you buy and where you install them.

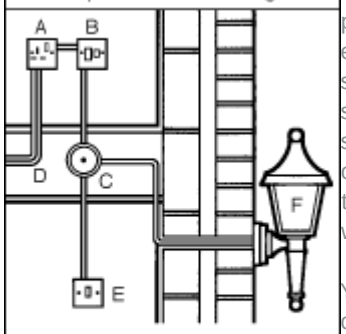
At the front door, and on the patio, you will probably want a decorative fitting (or two) that looks attractive by day and by night. The style is a matter of personal taste, and there is a wide range to choose from.

Elsewhere, function will be more important than looks. For example, cheap bulkhead fittings are ideal for side paths, garage approaches and so on. The one type of fitting to avoid, unless very high levels of illumination are absolutely essential for security purposes, is the 500-watt floodlight mounted high on your house wall. It is far too powerful for most domestic settings, and its glare merely annoys neighbours and passers-by.

Should you still wish to install floodlights, look for models that help combat light pollution.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Provide power for the new lights



A. Socket
B Switched FCU
C. Junction-box
D. Ring main
E Switch
F Exterior light

1

Then decide how to provide power for the new lights. The easiest option is to take fused spurs from power circuits, since you can connect the spur into a socket outlet on or near an outside wall and take it straight through the wall to the light position (1).

You can connect the spur cable into any socket outlet that is on the main circuit and is not itself supplying a spur - in other words, one with two cables present. You cannot connect it to an outlet that is itself a spur, with just one cable supplying it.

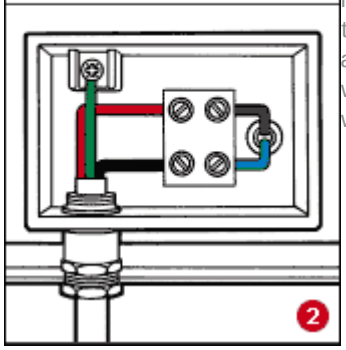
If you decide to extend an existing lighting circuit, use the upstairs one which you can access in the loft. You can then drop cables down the outside walls to the light positions. You would have to lift carpets and floorboards to get at the downstairs lighting circuit - a degree of disruption that may not be worth the effort.

Check that extra lights will not overload a lighting circuit. Each can supply a maximum of 1200 watts. A high-wattage floodlight could easily cause an overload and blow fuses.

3 - Choosing fittings

Any light fitting for outdoor use - even in a porch - must be marked as suitable for the purpose.

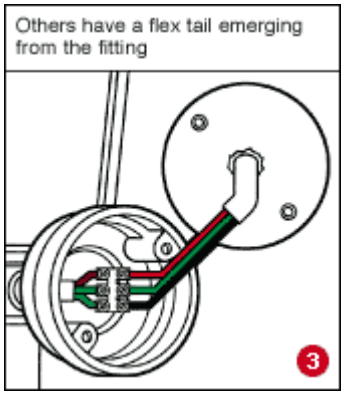
Some internal fittings have an internal terminal block to which the circuit cable can be wired directly



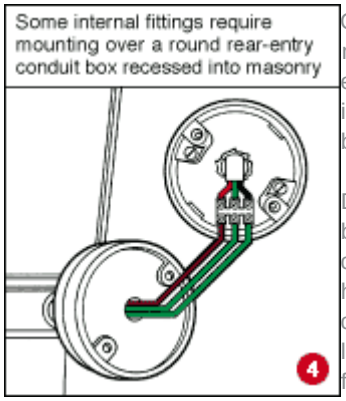
2

Inspect fittings before you buy, to see how they are intended to be connected to the circuit wiring. Some have an internal terminal block to which the circuit cable can be wired directly (2).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Others have a flex tail emerging from the fitting; look for ones with a hollow baseplate which can be used to accommodate the wiring connections (3). Both of these fitting types can be mounted straight onto the house wall, with the cable entering via a hole in the wall behind.



Other fittings require mounting over a round rear-entry conduit box recessed into the masonry (4) - a job best avoided if possible.

Decide how the lights are to be controlled. A porch light can be switched from the hallway, and patio lights from close by the back door. Other lights, with more of a security function, will benefit from passive infra-red (PIR) control, although isolation switches must still be fitted.

A PIR detector senses the movement of any warm object - visitor, burglar, animal, car - moving in its field of view, and acts to switch on the lighting it controls. You can buy individual light fittings with an integral PIR detector, or have a separate stand-alone detector linked to a number of ordinary light fittings.

Choose the bulb wattage to suit the situation, bearing in mind the maximum wattage for the fitting. A 40-watt or 60-watt bulb will be more than adequate in most situations. Wherever possible, use compact fluorescent lamps rather than tungsten-filament bulbs for long life and economy.

4 - Preparing the cable route

Once you have decided where each light fitting is to be installed, the next step is to create a route for the spur cable. Ideally the cable should emerge immediately behind the fitting's baseplate, but if this isn't possible, the cable can run up or down the outside wall of the house.

When using tools, ensure the relevant safety equipment is used.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Check walls for buried cables and pipes before drilling. Special detectors are available to assist with this.

Use a 16mm diameter masonry drill bit to make a hole for each cable. It must be long enough - 400mm (16in) at least - to penetrate the wall in one go. Work from the outside so you can drill through a soft mortar joint rather than through the face of the bricks, and angle the drill bit very slightly upwards so rainwater will not penetrate the hole.

If you need a recessed conduit box to contain the connections to the light fitting, chop out its recess next. First remove a knockout and hold the box over the drilled hole. Mark its outline on the wall and drill a series of closely-spaced holes within it to a little more than the box depth. Then chop out the honeycombed brick with a cold chisel, clean up the hole and secure the box in the hole with screws and wallplugs.

Slide a length of 16mm PVC conduit through the hole to line it so the cable cannot chafe on the masonry. Then feed in the 1mm^2 cable, leaving about 150mm on the outside ready for connection to the light fitting. Indoors, route the cable to near the point you have chosen for the connection to the indoor power circuit. You can clip it to the top of skirting boards, or run it in mini-trunking if you prefer to conceal it.

5 - Installing the light fitting

At the light position, strip the cable sheath and the core insulation and connect the cable to the light fitting. If it has a terminal block (see illustration (2) in the section 'Choosing fittings'), you will probably need to feed the cable through a flexible waterproof seal at the cable entry point. Connect the cores to their terminals, which are generally marked L (live), N (neutral) and E (earth).

If the fitting has a flex tail, link this to the circuit cable, using three strip connectors. Link the cable red core to the flex brown core, the cable black core to the flex blue core and the cable earth core (covered in green/ yellow PVC sleeving) to the flex earth core, if it has one (see illustration (3) in the section 'Choosing fittings'). If it doesn't, simply link the cable earth core to the third strip connector.

If the fitting has a hollow baseplate, fold the cable neatly into it so it contains the strip connectors within it. Then fill the baseplate with clear silicone mastic to waterproof the connections. Use the same technique if the strip connectors are housed in a recessed conduit box.

You can now fix the fitting to the house wall. In most cases,

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

this involves marking the screw-fixing positions on the wall, drilling holes, inserting wallplugs and holding the fitting in place while you drive in the screws.

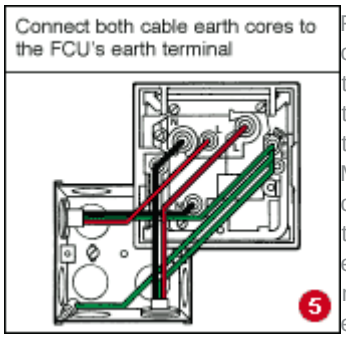
Some outside light fittings have a separate baseplate which you screw to the wall. The body of the fitting is then attached to the baseplate with machine screws.

With the fitting securely in place, run a bead of clear silicone mastic all round it to waterproof the junction between fitting and wall.

6 - Making the wiring connection

A spur to a light on the house wall must be fused, so the spur cable is run via a switched fused connection unit (FCU). This also allows the light to be isolated from the mains for maintenance or repairs. A 3amp fuse must be fitted in the spur.

Install the mounting box for the FCU near to the socket outlet you have selected for the connection to the power circuit. Connect in the 1mm^2 spur cable from the outside light, and connect its live and neutral cores to the FCU terminals marked LOAD.



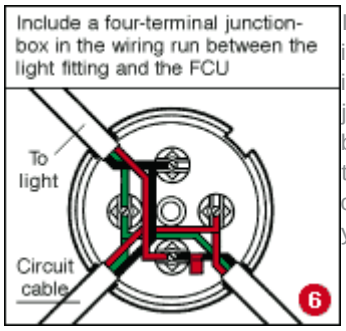
Run a short length of 2.5mm^2 cable from the FCU back to the socket outlet. Connect the cores at the FCU end to the terminals marked FEED or MAINS. Connect the earth cores to the FCU's earth terminal, and link this to the earth terminal in the mounting box with a 'flying earth' (5).

Turn the power off at the mains, remove the faceplate and feed the other end of the 2.5mm2 cable into the socket outlet's mounting box. Strip the sheath and core insulation and connect the cores to the outlet's live, neutral and earth terminals, linking like cores to like. Fit a 5amp fuse in the FCU's fuseholder.

Restore the power and switch on the FCU, which will act as the light's on-off switch if it is an ordinary fitting. If it is PIR-controlled, leave the FCU switched on permanently; the PIR detector will act as the on-off switch.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

7 - Providing separate switching



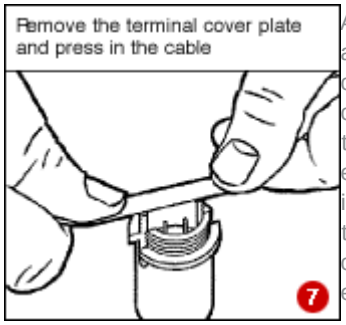
If you want the light to be independently switched, include a four-terminal junction box in the wiring run between the light fitting and the FCU. Wire in the switch cable there (6) and run it to your chosen switch position.

You can control the light from two positions if you create a two-way switching arrangement. For example, this could allow you to switch the light on and off from upstairs after bedtime - a useful security measure.

8 - Installing low-voltage lighting

The simplest way of lighting up your patio or garden safely is to use low-voltage light fittings powered by a transformer. You can buy complete sets consisting of a number of light fittings, special low-voltage cable (typically about 8m (26ft) long) and the transformer, which must be sited in the house, in an outbuilding or in a weatherproof enclosure.

Decide where you want the lights, and lay out the cable from the furthest light position back to where the transformer will be placed.

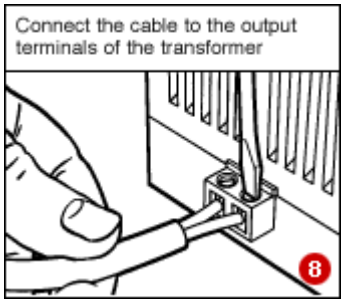


Assemble the light fittings and place them next to the cable where you want to connect them. Remove the terminal cover plate from each fitting in turn and press in the cable (7). Pins inside the terminals pierce the two-core cable and make the electrical connections.

As all manufacturers' products are different, instructions supplied with light fittings must be followed.

Replace the terminal covers and set the fittings in position by pushing their spikes into the ground. The lamps can now be pushed into lamp holders.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Connect the cable to the output terminals of the transformer (8). Plug the transformer into a switched socket outlet, which will also act as the lights' on-off switch. If the transformer is in an outbuilding or a weatherproof enclosure, the socket outlet supplying it must be protected by a high-sensitivity (30 milliamp) residual current device - the type normally installed for supplying garden power tools.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

PAINT EFFECTS

SKILL LEVEL

There are varying levels of skill involved in paint effects, but some of the simplest techniques will produce very attractive results.

SAFETY FIRST

Be sure all ladders are safe and correctly placed. Keep children and animals away from the work area. Work in a well-ventilated room and away from naked flames.

INTRODUCTION

Paint effects are great fun and can make your home attractive, adding texture and interest.

Most of the techniques covered here are best suited to large areas, such as walls. Some, such as stencilling and graining, are equally effective on smaller areas, on woodwork and furniture.

Paint effects mainly consist of applying a coloured glaze over a basecoat of a lighter or contrasting colour, which has already dried, then working the surface in a number of creative ways whilst the glaze is still wet. All the effects can be achieved with inexpensive tools and materials, and all are open to experimentation. You may even create a new style and unique effects!

2 - Planning the work

Decide in advance the size and area that you need to cover in one go, and where your finishing point will be. Try to make this at a natural break in the surface area, such as the corner of the wall or a skirting board, as it is very difficult to blend in an edge of paint once it has dried.

With large areas, you may need a helping hand to enable you to work quickly over the surface.

Have all materials and tools to hand before starting the work, with all ladders or steps set up in their best position to get the area covered quickly and efficiently.

Practice the paint technique and experiment with colour on a board before embarking on a whole wall.

3 - Preparation

The majority of paint effects today are created using water-based paints and products that are easier and friendlier to use as opposed to the oil-based products which need some experience to master.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Apply the basecoat of silk emulsion (1) to a surface that has been well prepared with all the 'making good' work done well in advance. See our 'How To' on Interior Painting. Matt emulsion is not a suitable basecoat because it is too porous, making it hard to move the glaze over the surface and create the effect. Apply the basecoat evenly to achieve the best finished result.

The basecoat must be perfectly dry before starting work with the glaze.

Some of these techniques can get a little messy so make sure any furniture left in the room, and surfaces not being worked on, are well protected.

4 - Preparing the glaze

Traditionally, paint effects were created using a glaze made from oil paints and an oil-based scumble glaze applied over an eggshell base. But these are really quite difficult to use. Luckily, there are now water-based equivalents available, which are much easier and more pleasant to use, and can be applied over a silk emulsion paint base.

You can buy ready mixed water-based glaze products or effects paint. But if you can't find the colour you want there are many ways of making up a water-based glaze.

It is possible to just add water to emulsion, but this dries almost immediately once applied, giving you very little time to work, and is quite tricky. If using emulsion paint, adding three parts water to one part emulsion is a good start. Test out the mixture on a board to see the effect and add more water or emulsion as required.

You can buy clear glaze products so that you can add paint to make up your own coloured paint effects glaze. These glazes are sold under a great variety of names, including 'scumble' and 'clear base', and can be used with various paints, but the way they work is basically the same. This 'product' prolongs the drying time of your glaze, and therefore making the whole process easier, as well as giving a translucent effect. Follow the instructions of the glaze product you have chosen to use.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Make sure you mix up enough mixture to complete the job, but keep a record of the proportions of materials in your glaze in case have to mix more.

Be prepared to experiment; try out a few mixes on pieces of hardboard painted in your chosen basecoat and look at them from a distance to gauge the overall effect.

5 - Colour washing

This is perhaps the most basic technique, which can produce a variety of effects from bold brush strokes to a soft-feathered look. First apply your basecoat and allow this to dry thoroughly. When dry, apply your glaze liberally to the surface with a colourwash brush, working in a random criss-cross manner through the glaze over the surface (2). The more you brush, the softer the brush strokes become. You can further work the glaze with a dry softening brush, again used in a random criss-cross direction.

When dry, you can add another coat to deepen the effect if you wish or even add a toning colour of very thin glaze of a different shade. Building colour with a number of coats is the way to create a rich, deep-bodied effect.

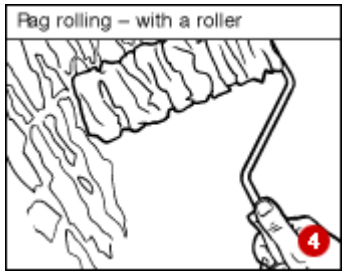
Clouding is similarly easy; instead of manipulating the glaze with a large brush, you can use a soft cloth or sheep skin painting mitten to 'wash' the glaze onto the surface in small or large circular motions.

6 - Rag rolling

Apply your basecoat and allow it to dry thoroughly, then apply your diluted glaze randomly using a brush or roller, with the basecoat just showing through. Take a slightly dampened cotton rag, roll it into a sausage shape and then roll it randomly across the wet surface of the glaze (3). This will have the effect of removing areas of glaze to reveal an intricate pattern. Renew or wash out your rags as they become saturated. Shammy leather is another good material for this technique, as are rag rollers made especially for this effect (4).

Alternatively, ragging is a very similar effect, using a damp cloth that has been scrunched up into a ball. This can then be dabbed randomly over the wet glaze.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



7 - Bagging

This is essentially the same as rag rolling but is done with a crumpled plastic bag or with a bagging roller. It gives a much crisper effect with sharper contrasts between the basecoat and the glaze. Again, you can alter the technique by scrunching up a plastic bag into a ball.

8 - Combing

When your basecoat is dry, apply your glaze evenly over the surface with a brush. Take a rubber paint effects comb and drag it across the surface in either random or geometrical patterns to obtain the effect you want. Wash out the comb regularly to avoid clogging. Most combs come with various sized teeth for different textures and effects.

The combing technique can also be used to create a wood graining effect.

9 - Graining

Combing, dragging and graining can be combined to create quite stunning wood-grain effects.

This technique is ideal for smaller areas and furniture. Use a paintbrush to apply the basecoat, finishing in straight lines to simulate the direction of wood-grain. Allow it to dry.

Apply the glaze, again with a paintbrush along the 'grain', you can then either comb or drag over the glaze to achieve a basic wood pattern. Straight away, using a rubber rocker or a specially designed graining tool, you can now work over the glaze to create 'knots' and more elaborate grain effects. Starting from the top, with the graining tool tilted so that the semi-circular ridges are facing you, pull the grainer through the glaze. Rock it slightly as it glides through to give some knots, remembering to keep it moving. By experimenting with the tool, you can either create elongated knots by pulling the tool in long sweeping motions, or small knots by using short sharp movements. Always keep the tool moving along the surface as you rock it back and forth. Dragging the rocker straight through the glaze will also give a different finish.

A soft dry paintbrush can then be dragged across the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

surface to soften the whole impact.

Experimentation is the best way to perfect this slightly more complicated technique.

10 - Sponging

For this you will need a natural sponge; imitation ones simply don't work as well. Sponging can be built up using two or more colours to add to the effect.

Apply the basecoat and allow to dry. Next, wet your sponge and allow it to swell to full size, then wring it out well until it's slightly damp. Dip it into the glaze and dab it over the surface with light pressure covering the whole surface with slightly overlapped dabs (5).

Allow this to dry, then add another coat, if required, either of the same colour or of a matching tone. You will need to clean your sponge fairly regularly to avoid it becoming clogged, making a splodge rather than a textured pattern.

11 - Stippling

This is very similar to sponging and gives a finer, more mottled appearance.

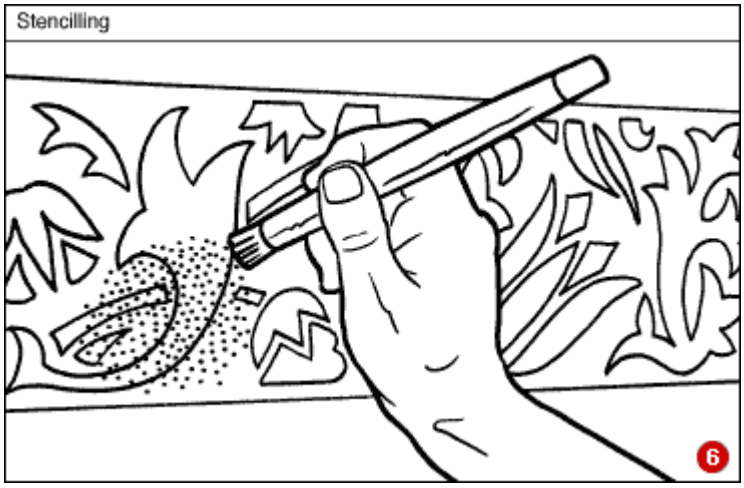
Stippling can be used as an effect in its own right, or can be used to disguise brush or roller marks before applying another technique such as rag rolling. When the basecoat is dry, apply the glaze and stipple it with the bristles of a special stippling brush. This will create a fine, even effect with a textured finish.

12 - Stencilling

This is quite a different paint effect to the others mentioned, as it is usually used to create a specific design or pattern onto a previously painted surface. It uses its own paints and generally is used in smaller areas such a furniture or as a border. The advantage of this is that it can be done in stages, working on one small area at a time.

You can buy ready-made stencils or you can make your own. There are also a great variety of stencil paints available, but you can also use any emulsion paint, wood dyes and oil paints.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Once you have decided where you would like to apply the stencil, attach it with low tack masking tape. With a stencil brush or sponge, stipple the paint through the stencil (6). Use very little paint and build up the design and colours in stages. If you use too much paint, the pattern will smudge. Stencil patterns can be created using a single colour and motif or several colours and designs.

13 - Spattering

Once again, this is a very simple process, well known to toddlers and schoolchildren - who are natural-born experts. It involves splashing wet paint, varnish, ink or stain onto a clean, dry surface.

The method is to use a short stick held in the hand and to knock a loaded paintbrush against it so that a spray of droplets spatter onto the basecoat. Don't have your brush too wet. You can control this by knocking off the excess paint into a tray or onto a rag before approaching the work area. You will soon find the optimum amount you need on the brush and learn how hard you should knock it to obtain your desired spatter.

This technique can be used on projects of all sizes, using very small paint brushes and thin glazes on small objects, or large ones on walls. Once again, you can stop in the middle of the process if you wish.

It's very effective in giving stone effects, such as granite, when three or four colours are overlaid. Allow each coat to dry before adding another. Finally, you may want to seal the whole surface with varnish for protection, especially if you have used inks and stains for any of the coats.

Paint effects are creative fun so, above all, enjoy doing them!

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

14 - Dragging

Dragging is another method of wood graining, and can be developed further to achieve fabric and linen effects.

Apply the glaze to the dry basecoat. Then, using a long bristled dragging or flogging brush, firmly drag the brush over the glaze holding it as flat as possible. Keep going until you have reached the edge of the area that you wish to paint. Repeat this all along the surface.

By dragging over the surface again at right angles to the first coat you can produce a fabric effect.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our guide to painting a ceiling.

In this section we will take you through the whole process including the preparation through to the final coat.

Painting/decorating the ceiling should always be the first task if you are decorating a whole room, doing the ceiling first makes the subsequent tasks easier.

To complete this task you will need the following items:	
• Suitable Interior Paint • Small Brush (cutting in) • Large Brush or Roller • Paint Kettle	• Suitable filler (if required) and Trowel • Dust Sheets • Sugar Soap and rag

When working at heights always ensure that the structure is safe and secure. Never stretch out, always get down and re-position the scaffold.

Preparing the ceiling

First remove curtains, fixtures and any light furniture, place all heavy furnishings in the middle of the room and cover with dustsheets. Remove any loose floor coverings and use dustsheets to protect any other floor covering from paint splashes and dust.

Wash down the wall with sugarsoap or a suitable detergent to remove all dust and debris.

Inspect the ceiling for cracks, holes and any loose plaster.

For small cracks use a suitable fine filler, for larger cracks and holes use a stronger more suitable filler (see manufacturer's instructions).

When filling try and leave a nice smooth finish, it is better to leave the filled area slightly proud of the surrounding area and then sand down with a fine sandpaper until flush.

Cutting in the ceiling

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The first task is to cut-in the ceiling, to do this take the smaller paint brush and fill your paint kettle so the paint comes halfway up the bristles of the brush (to avoid overloading the brush).

Start in one corner and coat the ceiling holding the brush as shown in **Fig 1.1** ensuring to get right into the corner, if you are painting/decorating the walls after then you don't need to worry too much about getting paint on the walls.

Then holding the brush at the angle shown in **Fig 1.2** go over the paint to even out the coat.

To cut in around any light fittings you may find it easier to isolate the electricity at the main fuse box and then remove the fitting for painting.

Fig 1.1

Fig 1.2

Using a Brush

After you have cut in around the entire ceiling and any light fittings take the larger brush and coat the ceiling using smooth parallel strokes, if you paint in 1 metre sections you will find the wet edges stay fresher and therefore improve the finish.

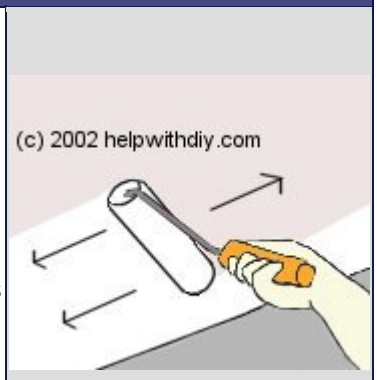
Once you have finished the first coat, allow to dry thoroughly and then repeat the process for the second coat.

Using a Roller

After cutting-in around the ceiling fill your roller tray to a depth so that the paint doesn't rise above the pile of the roller (to avoid overloading the roller). Place the roller in the paint then distribute the paint evenly by bringing the roller back and forth over the top section of the tray.

Now start in one corner and use the roller in smooth parallel actions (see **Fig 1.4**), if you work in 1 metre square sections you will find it easier to keep the wet edges fresh. Coat the entire ceiling and then allow the paint to dry thoroughly.

Once dry apply the second coat in the same way.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Do It Yourself

To print this page, select **File** then **Print** from your browser

URL: http://www.diynet.com/diy/dr_hardware/article/0,2037,DIY_13795_2272961,00.html

Painting a Door

From "Ask DIY"
episode ADI-210 -- More Projects »

Q: What's the proper way to paint my front door?

A: (Brad Staggs, *Ask DIY* Home Repair expert): Not a lot of people know how to paint a front door properly. Follow these steps:

Materials:

Slot screw
Sawhorses or sturdy work table
Primer
Caulk
Putty knife
180-grit sandpaper
Paint
Angled sash paint brush
Four-inch foam roller

Paint the cross boards on your front door with the grain.

Figure A

Figure B

1. Remove the door before you paint. Use a slot screwdriver to remove the hinge pins (**figure A**) and then remove the other half of the hinge from the door (**figure B**). That way, you won't get paint on the hinges. Remember the front door will be heavy once the hinges are no longer holding it in place, so you might need a friend to help you lift it onto some sawhorses.

2. Take any other hardware off the door, including the door knocker and the peephole, which is usually two snap-together pieces. Also make sure you remove the doorknob (**figure C**) with a screwdriver. Usually, you'll need to take out four screws, two that hold in the latch and two that hold the doorknob itself.

3. Prime all six sides of the door, including the inside, the outside, the left and right edges and the top and bottom. Any surfaces you don't prime will absorb moisture.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Figure C

4. Visually inspect the door for surface cracks and caulk any you see (**figure D**) with a caulk gun and a putty knife. Let the caulk dry and re-prime the spot.

Figure D

5. Use a fine-grit sandpaper, such as 180 grit, to sand the surface smooth of paint drips and the like, particularly in the crevices of the panels (**figure E**). Then use an old paintbrush or a tack rag to brush off the dust from sanding.

Figure E

6. Start painting over the primer with an angled sash brush, painting the corners of the raised panels first (**figure F**). Work from the top panels down to the lowest. Don't use too much paint or let the paint puddle.

7. Use a four-inch roller to apply the paint to the raised panels, rolling with the grain of the wood. Remember you'll need several coats.

Figure F

8. The rails are the door boards that come across and the stiles go up and down. They meet with a diagonal seam at the corners of the door. Make sure you don't paint across that seam. Instead, paint the stiles with their grain, which will be up and down, and the rails on their grain, which will be side to side, and stop your brush stroke (and the roller) at the seam.

9. Paint the door with several coats, continuing to use the angle brush first and then the roller. You may need even more coats if you're working with a dark color.

More Questions for Brad:

Q: I have a door that will not stay open. What could be the problem?

A: You could have a spring-loaded hinge, which is designed to make the door always shut behind you. If you don't like that, replace the spring hinge with an ordinary hinge. If that's not it, chances are your door has been hung at an angle, not plumb, and gravity is pulling it shut. If that's the case, you'll need to move the hinges in the door so it hangs straight down.

Q: I can't get my doorbell to ring. I bought a new button for the outside and a whole new system for the wall inside. Help!

A: If you've actually replaced the button and the wall unit indoors, you probably have a wiring problem.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

To solve it, you can chase down the wires through the wall, you can run new wires or you can take the system back to the store, get your money back and buy a wireless doorbell unit.

Q: How do you remove mirror tiles that are glued to the wall?

A: First, make sure you wear gloves, safety eyewear and a long-sleeved shirt to protect you from any pieces of glass that fly off the wall. Then use a long-handled scraper to pry the tiles off. Because some drywall with probably come off, too, prepare to do some drywall repair at the same time.

Books:

How to Paint: A Complete Guide To Painting Your Home
by Creative Publishing
ISBN: 086573190X
Creative Publishing International (1999)
5900 Green Oak Dr.
Minnetonka, MN 55343
Phone: 800-328-0590 or 612-936-4700
Fax: 612-988-9108

Painting: How To Paint Walls, Ceilings, Trim and Exteriors
by Jeff Beneke
ISBN: 080697057X
Sterling Publishing, Inc. (1998)
387 Park Ave.
New York, NY 10016
Phone: 212-532-7160
Fax: 212-213-2495
Customer Service Phone: 800-367-9692
Customer Service Fax: 800-542-7567
E-mail: webmaster@sterlingpub.com

- **ALSO IN THIS EPISODE:**
  Quick Tip: Changing Your Oil
  Painting a Door
  Chalk Paint
  Family Fitness
  Tray Passing (Recipes included)
  Living Wreath
  Gold-Leaf Tabletop

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our guide to painting ceramic tiles.

Painting ceramic tiles is a cheap and easy way to bring life back into your kitchen or bathroom, in this guide we will show you how to do it with the least amount of fuss.

To complete this task you will need the following items:

- Suitable tile primer
- Suitable top coat (gloss)
- Synthetic bristle brush
- Natural bristle brush
- Fine sandpaper
- Lint free cloth
- Dust sheets
- Detergent
- Nail brush (or similar)

Preparing the tiles for painting

The first thing to do (as with most DIY tasks) is the preparation.

First make sure the surrounding area is protected from any dust or paint.

Next take a suitable detergent and wash down the tiles to remove all dust and grease. For the grouted areas use a nail brush or similar to get right into the joins.

If there are any cracked or chipped tiles then these need to be replaced not filled, if you need a hand with this then see our guide to replacing broken tiles.

Once you have cleaned the tiled area thoroughly then wash it down with some clean water to remove all traces of detergent and allow to dry.

Applying the primer

When the area is clean and thoroughly dry you can then apply the tile primer.

Take your synthetic bristle brush and coat the tiled area evenly with the primer, use a smooth vertical action as shown in **Fig 1.1** to give an even coat ensuring you catch any runs.

Once you have coated the entire area you will need to leave the primer to dry normally for several hours, although **always read the manufacturer's instructions**.

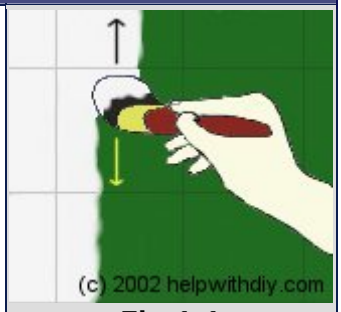


Fig 1.1

Once dry rub down the entire surface with a fine sandpaper and then remove all dust with a lint-free cloth.

Now apply the second coat of primer in the same way, esuring to give a nice even finish.

Again rub down with some fine sandpaper and clean off with a lint-free cloth.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Applying the gloss

Take your natural bristle brush and apply the gloss in much the same way as you did the primer, although it may give a better finish if you paint the grout first and then using a smooth vertical stroke as shown in **Fig 1.2** coat the rest of the area ensuring to catch any runs in the paint.

Once you have covered the entire area leave the gloss to dry according to the manufacturer's instructions.

After the paint has dried continue with the second coat using the same technique as before and leave to dry thoroughly.

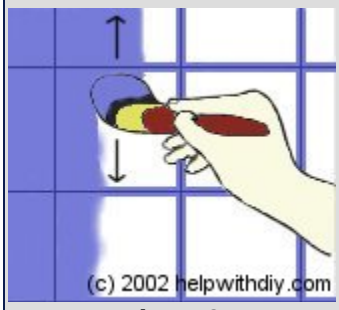


Fig 1.2

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our guide to painting interior panel doors.

To complete this task you will need the following items:	
• Suitable primer (new wood) • 2 Paint brushes • Suitable undercoat • Suitable top coat • Fine sand paper • White spirit and cloth	• Screwdriver • Knotting (if required) • Wood filler (if required) • Paint scraper (old wood) • Sugar Soap (or similar)

Preparing the door for painting

The first thing to do is to remove the handles, plates and lock mechanism, this makes the painting job much easier.

New Wood

To prepare new wood for painting, first sand down the door with a fine sand paper following the grain, any sharp edges should be slightly rounded off.

Wipe the door down with a cloth and white spirit to remove any dust. Apply **knotting** to any knots, this will stop any resin leaking from the wood and spoiling the finish.

Use a suitable wood filler to repair any joints or cracks, leaving the filler slightly proud and then rubbing down with fine sand paper.

Wipe the door down with a clean cloth and white spirit to remove all dust and debris.

Old Paintwork

Check for any flaking paint, remove with a scraper and then feather the surrounding paint with fine sand paper to even the surface, fill any open joints or cracks leaving the filler slightly proud and then rubbing down with fine sand paper.

Rub the entire door down with a fine sandpaper (especially if it is gloss paint).

Wash the door down with sugar soap and allow to dry out.

Painting the Door

New Wood

Applying the Primer

Apply an even coat of primer working it well into the grain of the wood, ensure to give a good coat to the end grain and any knots.

Allow to dry and then rub down with a fine sandpaper, then wipe the door down with a clean cloth to remove any dust.

Applying the Undercoat

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Choose a suitable undercoat for the top coat, preferably from the same manufacturer.

Apply an even coat using smooth wrist actions following the grain of the wood ensuring to catch any runs as you work.

If the door requires two coats the wait until the first coat is dry, rub down with fine sand paper, wipe the door down to remove any dust and apply the second coat in the same way.

Rub down the door with fine sandpaper and then remove any dust/debris with a clean cloth.

Old Paintwork

If the paintwork is in sound condition then you may not need to prime or undercoat the door (especially if it is the same colour), although it is advisable to sand down the existing paintwork and apply a thin undercoat, for this follow the instructions above.

Applying the top coat

Apply the top coat in the order as shown in **Fig 1.1**, start with the beading around the panels (**A**) ensuring to catch any runs, then coat the panels themselves (**B**) with smooth strokes of the brush again following the grain of the wood.

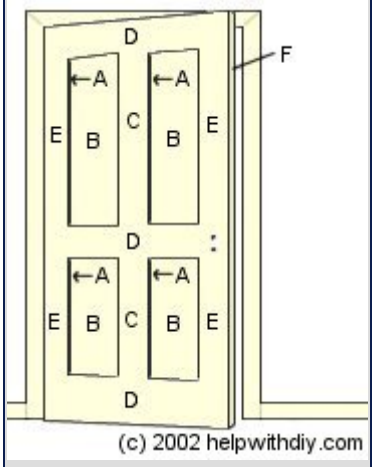
Next paint the vertical stiles (**C**) with smooth vertical strokes following the grain of the wood.

Then coat the horizontal rails (**D**) using horizontal strokes with the brush.

Now coat the vertical runs (**E**) using smooth vertical strokes with the brush ensuring to leave an even finish where the joins of the horizontal rails meet.

Finally coat the edges of the door (**F**) with smooth vertical strokes, ensuring to catch any runs or build ups of paint on the corners.

Allow to dry and then rub down the door with fine sandpaper, wipe the door down with a clean cloth to remove any dust, and then apply the second coat in the same way.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our guide to painting interior walls.

In this section we will take you through the whole process including the preparation through to the final coat.

Painting is one of the easiest and most rewarding DIY tasks around the home, you can transform a room with the minimum amount of work and time.

We will assume you have decorated/painted the ceiling and any woodwork. If not, and you are intending to then it is advisable to complete these tasks first, please see our guides:

- Papering a ceiling
- Painting a ceiling

Doing the tasks which apply in this order will make the job easier.

To complete this task you will need the following items:	
• Suitable interior paint • small brush (cutting in) • Large brush and kettle or Roller and Tray • Filler (if required)	• Dust Sheets • Fine Sand paper (if required) • Sugar soap (or similar)

When working at heights always ensure that the structure is safe and secure. Never stretch out, always get down and re-position the scaffold.

Preparing the walls for painting

If your walls need stripping before painting then please see our guide to removing wallpaper.

If you have a radiator that needs removing the please see our guide to removing a radiator.

First remove curtains and fixtures, place all furnishings in the middle of the room and cover with dustsheets. Remove any loose floor coverings and use dustsheets to protect any other floor covering from paint splashes and dust.

Wash down the wall with sugarsoap or a suitable detergent to remove all dust and debris.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Inspect the wall surfaces for cracks, holes and any loose plaster.

For small cracks use a suitable fine filler, for larger cracks and holes use a more suitable filler (see manufacturer's instructions).

To check for any loose plaster, tap the wall around any suspect areas and remove any loose flaky plaster.

When filling try and leave a nice smooth finish, it is better to leave the filled area slightly proud of the surrounding area and then sand down with a fine sandpaper until flush.

Fig 1.1

Cutting in to the ceiling

Note: To give the best finish only cut in one wall at a time, paint that wall, then start on the next.

The next step is to cut in around the ceiling, skirting, corners, light switches, sockets and any doors/windows.

To cut in to the ceiling use the brush as shown in **Fig 1.2** paint along the top of the wall keeping the edge of the brush tight to the ceiling, use firm steady strokes to give yourself a nice straight edge.

Then turn the brush and hold as shown in **Fig 1.3** and go over the paint again with a steady stroke to smooth the previous coat, this time there is no need to get too close to the ceiling but close enough to smooth the paint out nicely.

You can use this technique to cut in around the horizontal runs of any windows, doors, sockets and light switches.

To cut in to the skirting boards use a similar technique holding the brush at a 90 degree angle to the skirting board, then turn the brush and go over the paint again to smooth the coat.

Fig 1.2

Fig 1.3

Cutting in around windows and doors

To cut in around the vertical runs of doors and windows is the technique used above but this time hold the brush as shown in **Fig 1.4** keeping tight into the corner with the edge of the brush.

Then using the brush as shown in **Fig 1.5** go over the paint again with a firm steady stroke to smooth the previous coat, again there is no need to get too close to the corner, just enough to smooth the paint out nicely at the edge.

You can use this technique to cut in around the vertical

Fig 1.4

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

runs of any windows, doors, sockets and light switches.

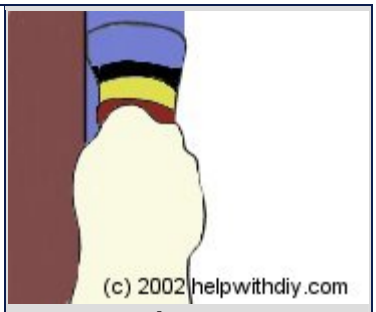


Fig 1.5

Applying the first coat - Using a brush

When painting interior walls paint from top to bottom working away from windows as in **Fig 1.6**.

Using a brush

Use the biggest brush you feel comfortable with, this will allow you to cover a greater area quicker and therefore lessen the chance of the paint drying out too quickly at any edges.

If you are using a paint kettle (recommended) then fill the kettle so it is half the depth of the bristles on your brush, this will help avoid overloading the brush.

Use the brush as shown in **Fig 1.7** making a nice smooth vertical action with your wrist, paint one section at a time ensuring to keep any wet edges fresh as this will improve the finish.

With corners always paint outwards over the edge as shown in **Fig 1.8** this will reduce the chances of any paint collecting at the edge and forming runs.

Try to ensure you catch any runs in the paint as they happen, if you find a run that has already dried out too much to smooth with the brush then you will need to sand it down with fine sandpaper, and then recoat.

Apply the second coat in the same way.

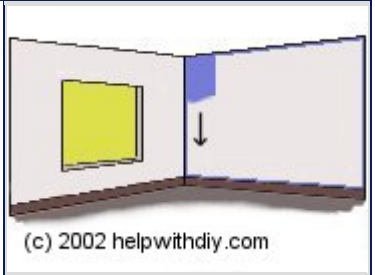


Fig 1.6

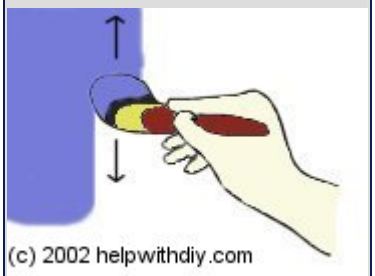


Fig 1.7

Fig 1.8

Applying the first coat - Using a roller

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Using a roller - short pile

Fill the roller tray to a depth so that the paint doesn't rise above the pile of the roller, this will help to avoid overloading the roller.

Place the roller into the paint and then roll it back and forth over the top section of the tray to distribute the paint evenly around the pile.

With your roller use smooth vertical actions (see **Fig 1.9**) to give an even coat, ensuring to keep the wet edges fresh as do each section of the wall, finish each section with smooth strokes in one direction (down or up) this will improve the finish.

When painting to an edge always roll to the edge as shown in **Fig 2.0** this will help avoid a build up of paint on the edge.

Apply the second coat in the same way.

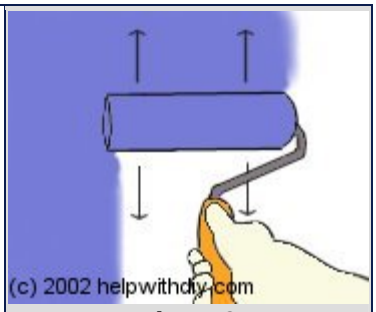


Fig 1.9

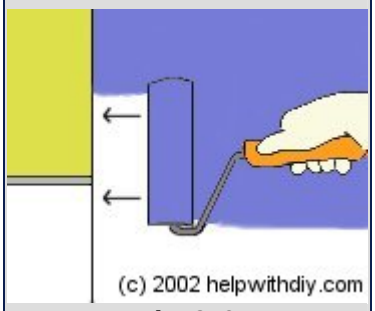


Fig 2.0

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

PAINTING PROBLEMS

SKILL LEVEL

To achieve top-quality painting results simply requires the use of good equipment and materials, meticulous preparation and careful application of the paint.

SAFETY FIRST

Although painting is the most popular of all DIY tasks, it has its own real danger areas which can cause problems. These are all avoidable by taking simple, common-sense measures.

INTRODUCTION

Basic skills and taking the time to work to simple guidelines are all that are needed to avoid painting problems.

Most problems encountered in painting can be avoided simply by taking the time to prepare all surfaces, materials and equipment thoroughly. Never rush the job or attempt to cut corners - this will lead to problems and a disappointing finish, requiring costly and time-consuming remedial work to put things right.

2 - Fault finder

Painting problems arise from an error in preparation, poor working conditions, using low-grade equipment, or incorrect application of the paint. Using too much paint on the brush, and painting on a dirty, greasy or wet surface are typical mistakes. Here are some commonly found faults, and what you can do to prevent and rectify them.

3 - Brushmarks

Failing to rub smooth a poor surface or using a low-grade brush with an inadequate amount of bristles are basic faults. Wash surfaces thoroughly, rub down, then wipe with a lint-free cloth dampened with white spirit.

4 - Flaking

Poor surface preparation can cause paint to flake away. On woodwork, painting over dust and grease is the likely cause. Remove wax polish from skirtings. On walls and ceilings, applying emulsion over an unclean surface, old distemper or dampness is the fault.

If distemper is present it has to be removed or sealed. You will only find distemper in older houses which have not been decorated for many years. If you suspect it might be present, test by wetting it with water - if it's distemper, the water will dissolve it and it will come away. Wet and scrape away any loose distemper, then apply a plaster sealer

5 - No hiding power

If the previous coat is still visible, then it is likely that no

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

undercoat has been used, or the undercoat was the wrong colour. Overthinning the paint, overbrushing, or understirring can also be the cause. Where necessary, use an extra undercoat.

6 - Loss of gloss

When gloss paint loses its shine, not allowing sufficient drying time between coats can be the problem. Overbrushing the paint or overthinning the paint may also be causes. Painting in very cold conditions is another factor.

7 - Runs

If the paint is applied too thickly or is not brushed out enough, then runs and wrinkles will result. A common cause is trying to paint around fittings such as door handles. Apart from the likelihood of smudging paint onto the fitting, it is far better to remove all fittings before painting (1).

The only remedy is to allow the paint to harden for a week, then rub down smooth with wet-and-dry paper before repainting.

8 - Specks and pimples

Caused by dust and specks getting into the paint. In outside work especially, wind-blown dust can get into the paint tin contaminating the whole batch. This can be avoided by transferring small amounts of paint into a paint kettle - so if dust does get in, only a little will be affected and this can be discarded.

Remove dust from the lid of the paint tin (2). Dust on surfaces can also be picked up on the brush bristles and spread onto the work.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Make certain that corners are cleaned out by tying a lint-free cloth around a pointed stick, dampening it with white spirit and cleaning out the corner thoroughly (3).

Also make sure that keyholes, top edges of doors and other nooks and crannies are cleaned (4).

If a whole tin of paint is contaminated, then strain it into a clean container through muslin stretched over the top.

Treat the problem the same as for runs.

9 - Blisters

These are caused by painting on a wet surface, or onto old, soft or lifting paint. Again, treat the problem as for runs.

10 - Yellow stains on gloss

This happens when resin from a knot in the surface of wood starts to bleed through to the paint surface. This is prevented by coating the knots with a liquid called shellac knotting which is effectively a sealer. If staining occurs, you have to strip off the paint and redecorate.

11 - Damp patches

Where dampness caused by rainwater or a plumbing leak leaves a stain on a wall or ceiling, painting over it will not solve the problem as the patch will reappear. Large areas should be coated with aluminium primer sealer before using emulsion; for economy, where only a small area is concerned, you can use an aerosol (5).

12 - Fluff on paint

Usually the result of someone's fluffy clothes brushing

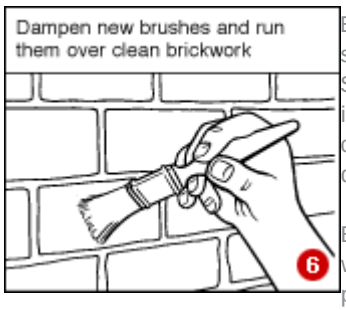
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

against the wet paint. Typically, this happens when painting a door and leaning against a wet door frame. This can be avoided by painting the door and frame on different days. Proceed as for treating runs.

13 - Equipment

Buy good-quality brushes. These have long, densely packed bristles which hold the paint well and give good coverage. Poor-quality brushes have short, sparse bristles which give uneven coverage.

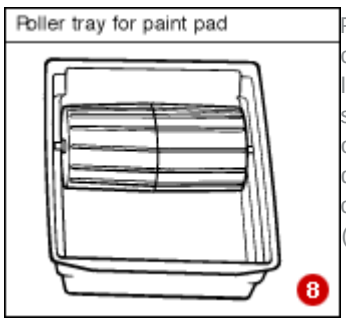
A good-quality brush, if looked after, will last a long time and prove more economical in the end.



Even a top-quality brush will shed a few bristles at first. So, before using it, dampen it in clean water and run it over clean brickwork to get rid of dust and loose bristles (6).

Buy a good-quality roller as it will give even coverage. A poor-quality foam roller will give uneven coverage and tends to spatter the paint around.

Match the roller to the surface - the smoother the surface, the shorter the roller pile needs to be. A heavily textured surface needs a shaggy sheepskin-style roller (7).

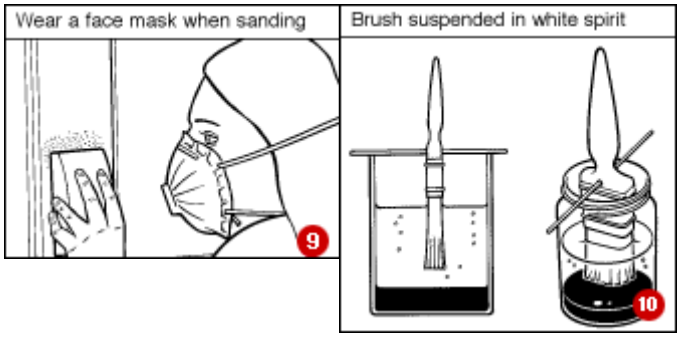


Paint pads can give uneven coverage by being incorrectly loaded. It's best to buy a special tray which has a roller on one side; if the pad is dragged across, even coverage is virtually assured (8).

14 - Safety

- Left-over paint should be stored in dry, secure conditions out of the reach of children.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



- Always keep children and animals away from the area when painting.
- Open doors and windows to ensure plenty of ventilation when painting and while it is drying.
- If possible, remove furniture and furnishings or cover them completely.
- Wear protective clothing when preparing and painting surfaces, especially when you are working overhead and when sanding (9).
- When suspending brushes in brush cleaner or white spirit, allow them to stand in a safe environment for a week. The liquid can then be poured out for reuse, and the hardened sediment at the bottom of the jar can be discarded safely (10).
- Never throw left-over materials down the drain as residues such as paint and white spirit can contaminate the water supply. Take them to the local council waste-disposal depot where they can be dealt with safely.
- Always read carefully the instructions on paints and other materials before use.

15 - Lead in paint

Up until the mid-sixties, lead was used to make some kinds of paint. Young children and pregnant women are most at risk from lead poisoning. Lead can be absorbed into the body through the skin or by inhalation of particles.

The danger where lead is present is if the paintwork gets knocked or is chewed or scratched by a child or a pet, or damaged in another way, releasing lead dust into the house.

- If your house was built after the sixties, it is unlikely that lead paint was used. If it was built before the sixties and has not been decorated since, then there could be some lead around.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- If the house is pre-sixties and has been painted since then, any lead in previous coats of paint will be sealed in and there is no problem provided the paint is in good condition - not flaking or chipped - and you don't plan to strip it off to redecorate.

- Old paint that contains lead is most easily dealt with (provided it is in good condition) by painting over it with a modern lead-free paint.

- If old paint is to be removed, then use a stripping method that doesn't create dust, such as a solvent or caustic-based liquid stripper (11).

- If using a hot-air gun, use only enough heat to soften the paint (12) - burning it will release fumes. Set your heat gun to below 450oC.

- Wear protective clothing and a good-quality face mask. Seal the work area and keep other people away - especially children and pregnant women.

- When taking a break, store the clothes you have been wearing in a sealed bag and wash any bare skin carefully as soon as you finish working.

- When most of the paint has been removed, moisten the surface and smooth it with wet-and-dry paper - not sandpaper.

- When the paint has been removed, collect all peelings from the room and put them in a sealed plastic bag for collection by your refuse collector.

- Clean the room with water and detergent. To clean up properly, hire an industrial-standard vacuum cleaner (British Standard 5415).

- If you are not confident about dealing with lead in paint correctly and safely, call in a reputable, professional decorating firm.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Painting Walls and Ceilings

- Which Paint, Where?
- Selecting Tools for the Job
- Preparation
- Painting
- Cleaning Up
- Checklist

1. Which Paint, Where?

There are two types of paint available for interior surfaces: water based or solvent based. Within each paint type there are also several finishes to choose from. Your choice depends on the area that you are painting.
Water based paints, or acrylics, are the popular choice for walls and ceilings. They are easy to apply, have very low fume levels, are touch dry in 20 minutes, can usually be re-coated in two hours and they clean up in water. **Solvent based enamel paints** must be cleaned up with mineral turpentine or an equivalent product. They have stronger fumes. They are also generally considered to provide a tougher, more hard-wearing surface than acrylic paints. Enamels are often preferred for areas that need constant cleaning, such as doors and furniture or walls subjected to frequent dampness. Kitchens, bathrooms and laundries may be worth the extra time that it takes to apply enamel.
The finish of your paint generally depends upon the purpose of the room you are painting. Gloss and semi-gloss finish paints provide a hardy surface for high traffic areas such as the kitchen, family rooms, bathrooms or children's rooms where frequent cleaning is likely.
Flat or low sheen finishes are commonly used for more formal, less frequented areas like dining rooms, bedrooms and lounge rooms and where the light matt effect subdues the atmosphere.
For ceilings, try a special ultra flat acrylic known as ceiling white that helps to mask imperfections. Choose a formulation that does not drip. A tint can be added to match your overall colour scheme. Some decorators suggest using a tint that is a half or quarter shade of the colours on their walls for the ceilings so as not to have too sharp a contrast between the walls and ceiling. Remember to record the formula of your paint tint on the paint so that you can re-order it at another time.

2. Selecting Tools for the Job

Make your job easier by assembling all the tools and materials you need before you start. You don't want to interrupt your work by having to dash off to your local Mitre 10 to buy the missing item.
Choose brushes with no gaps in the bristles and with a springy feel to them. A sparse or limp brush will have you dipping into the paint more often, will be hard to control and will leave a

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

streaky finish.
The choice of roller sleeve depends on the surface you're painting as well as the paint you're using. For smooth surfaces and higher gloss paints, use a shorter nap sleeve (around 10 mm). For rougher surfaces and lower gloss paints, use a medium nap (20mm). For very rough surfaces, use a long nap roller (around 35mm).
Select a roller frame with a threaded handle if you want to fit an extension to it. This will take the backache out of reaching ceilings and high walls.

3. Preparation

Preparation is the key to a good end result. It not only speeds up the finishing coats, but also lays a smooth base, ensuring a fine result.
It's worth taking time to mask all windows, door frames and light switches, etc, before you start painting - it will provide nice sharp lines and means you won't get paint on these areas.
New Surfaces
Even new surfaces need to be sanded smooth and then dusted off. Prime raw timber surfaces with a primer product before repairing any nicks with timber filler. Check the plaster and plasterboard for any nail depressions or cracks, and fill these with interior filler, overfilling so you can sand it back to a smooth, even finish. Then apply an undercoat like Dulux Undercoat and Wallboard Sealer. Dulux Mouldshield is good to use in an area prone to dampness.
Painted Surfaces in Good Condition
If there is no flaking or peeling, wash the surface down well with sugar soap to remove dirt, grease and smoke stains. If there's any mould use sugar soap, then treat with an anti-mould preparation. Check for any cracks and fill with interior filler. Overfill, then sand to an even finish. If the existing surface is an enamel paint, sand thoroughly to remove gloss. Now undercoat.
Painted Surfaces in Poor Condition
Scrape away flakes and blisters and then smooth edges with sandpaper. Touch up bare areas with an undercoat or primer. Use a heat gun (but not around windows or you will break the glass) or chemical paint stripper to soften the old paint, then scrape with a scraping blade. Really bad surfaces should be scraped right back to a bare surface. Apply an undercoat to the bare surface.
Tape Test - If you're unsure just how bad the old surface is, use the tape test. Scratch the paint and press on a small piece of masking tape, then rip it off. If paint comes off with the tape, the surface should be stripped back.

4. Painting

Protect the floor and any furniture that you are unable to move with plastic drop sheets. (Dripped paint may seep through ordinary bed sheets and onto the surface beneath.)
Before you start, it is important to mix the paint thoroughly. Use a flat paddle stick or ruler and stir from the bottom upwards (not just around) until all the paint is quite smooth.
Ceiling first.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Start with the ceiling. Paint the cornices with a brush. Fill in the main area of the ceiling with a roller, working from the darkest corner of the room towards the light. Work in narrow strips so you clearly see where you stopped and started. Paint around ceiling light fittings, then complete the rest of that band. Do not load the roller too heavily or it will drip down the roller frame.
The walls.
Start in a corner using a paint brush to cut into wall edges, window and doorframes. Use a roller to fill in the main areas, working along the wall evenly in an up and down motion.
Work from right to left unless you are left handed.
For window frames, doors and door frames, do the edges first, then the face, returning to the edges to lightly feather off any surplus paint with the tip of the brush. You'll probably be using an enamel here.

5. Cleaning Up

Clean brushes and rollers using turpentine for solvent-based paints, or water for acrylic paints. For brushes, work the bristles in the turpentine or water until all paint has been flushed out. Make sure you get all the paint out of the handle, as this will increase the life of your brush. Clean rollers by flushing out under running water or by working turpentine through the nap. Then wash in warm soapy water and rinse well. Always store brushes flat or hanging up, never standing on the bristles. Set rollers on end or hang them, otherwise the nap of the roller is flattened.

Checklist
- Undercoat
- Paint in the finish and quantity to suit your job
- Paint brushes
- Roller frame and roller tray to suit
- Roller covers to suit roller frame and paint finish
- Extension handle for roller frame
- Primer or sealer
- Interior filler (for cracks and imperfections)
- Filling blade (for applying filler)
- Scraper blade
- Drop sheets
- Utility knife
- Sugar soap, sponge and gloves
- Stepladder
- Flat paddle or ruler
- Sandpaper
- Masking tape
- Clean up rags for spills and drips
- Turpentine (if using solvent-based paints)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Paint Brushes, Paint Rollers and Paint Pads.

Even as we work and play our way through the high tech world of the 21st century, the good old fashioned paint brush is still the most preferred tool for applying paint in and around the home.

1. Paint Brushes

The best rated brushes are those made from natural bristle, with pig or boar being the most preferred. However as with most things, you get what you pay for and natural bristle brushes are usually the most expensive to purchase. A tradesman painter mate of mine always used to say that good quality brushes were like good wine - they improve with age! His method of "breaking in" a new brush was to first use it to apply primer and undercoats where it didn't matter when the brush shed a few hairs as all new brushes will. Plus as you use a brush, the tips of the bristles become round and this gives a smoother finish to your paint job. Cheaper brushes made from synthetic fibres are also available and some are getting almost to the quality of the natural bristle brushes.

If you are contemplating purchasing new paint brushes, first spend a little time browsing through the selection available at your local Mitre 10 store. Take into account quality, price and the job you want the brush to do.

You can do most DIY work with four sizes of brushes: 50mm, 25mm and 13mm for general work and a 100mm brush for walls and ceilings. An angled cutting-in brush (13mm) is a useful addition if you have a lot of work to do around window frames. A cutting-in brush will help you get a nice neat finish without paint getting on to an adjacent surface.

2. Paint Rollers

You can apply paint more quickly using a roller than you can do with a brush and they are also less tiring to use. Rollers come covered in a variety of materials to suit specific jobs: foam for general-purpose work; mohair for a smooth finish; shag pile for textured or roughcast surfaces. The disadvantages of rollers are that they tend to use a lot of paint, rarely give a truly smooth surface finish, and you will still need a brush for corners and cutting-in work.

3. Paint Pads

My most preferred option for large surfaces is the Paint Pad. These pads are usually made from a layer of foam with mohair bonded to on to the surface. The pads in turn are fitted to a plastic handle. Paint is poured into a tray with a roller applicator fitted and the pad is drawn across the roller taking up paint into the mohair. The paint is then simply 'wiped' onto the surface being painted. A very easy and clean method of applying paints.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Painting Exteriors

- Which Paint, Where?
- Preparation
- Applying the Paint
- Checklist

If you're painting a large exterior area, a little psychology helps. Identify sections and then prepare and paint one section at a time. That way you set yourself intermediate goals, for instance a wall at a time. One finished wall is really motivating and you'll feel less daunted by the remaining ones, which look shabby by comparison.
Use ladders with care. Secure extension ladders safely when working at heights. Lean the ladder so that the base is 1 metre from the wall for every 4 metres of height. Tie the ladder securely at the top or bottom to stop it slipping.

1. Which Paint, Where?

You have a choice of two paint-types: water based or solvent-based. Water-based paints offer a number of advantages, including easy application, rapid-drying and easy cleaning up after painting. Gloss Acrylic paints are commonly used for weatherboard homes, while Matt Acrylic paints are popular on brick, cement render and concrete surfaces.
Generally, solvent based enamel paints are to be preferred wherever a tough, hard-wearing, easy-to-wipe-clean surface is required. They take a little extra time to apply but can be well worth the trouble for doors, door frames, windows and other high wear areas.

2. Preparation

Take a critical look at your house to see what needs to be done. Look for any defects that might affect the final finish. It's important to fix every fault before you begin or the paint won't be able to do it's job properly. There is no point spending time and money on a paint job that will have to be redone because it is starting to flake and look bad.

New Surfaces

New bare Timber should be primed first, then cracks and holes filled with an exterior wood filler, sanded smooth and dusted down.
Brick and cement render should be rubbed down to remove loose sand, and cracks or holes filled with an exterior filler, then sanded, dusted off and undercoated so repairs won't show through. Bricks and cement surfaces are not perfectly smooth, so smooth sanding may not be required.
Metal gates, gutter and downpipes should be washed with turpentine and coated with an all purpose metal primer.

Painted Surfaces

All peeling paint must be scraped or wire brushed away, then

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

primed. If you're unsure just how bad the old surface is, try the tape test. Scratch the paint and press on a finger length of masking tape. Then rip it off. If some of the paint comes off with the tape then the surface should be stripped.
For large areas, use a heat gun to soften the old paint, making it easy to scrape off with a stripping knife. Use a chemical stripper for around windows - where heat might crack the glass.
Next, fill cracks and holes use Selleys Permafill on flat surfaces and Selleys No More Gaps on the two joining surfaces where movement is likely. Sand the filler level with the rest of the surface. Thoroughly sand the whole area to be painted to clear any uneven spots and five the new paint a slightly roughened surface it can stick to, especially if the existing paint is a gloss enamel. Exposed nail heads, if they are not galvanised, should be punched below the surface, and the holes filled and sanded smooth to prevent rust stains. Use a sugar soap to remove all grease, dirt and dust.
Rust on metal guttering, downpipes, gates or metal window frames (not aluminium) should be cleaned away with a wire brush and the metal primed with Dulux Rustguard. Gutter leaks should be repaired and sealed with a silicon sealant, such as Selleys Roof & Gutter. This will give a long-lasting and weatherproof seal. Think about using a transparent sealant that will be virtually invisible.

3. Apply the Paint

If painting the whole house, start with the fascia board and under the eaves, followed by the gutters. The walls come next, then the windows, sills and doors and finally the downpipes. In this way, any paint that is dripped onto a wall under a fascia or gutter will be covered up when you come to paint the wall.
Use a roller, if possible, on flat surfaces as paint will go on much faster this way than with a brush. Paint pads, especially 100mm or 180mm sizes, are an excellent alternative to brushes and rollers on smooth exterior cladding and weatherboards. After coating about one square metre, even out the paint by lightly rolling across the surface with an almost dry roller. Always work from the unpainted area back into the painted area, maintaining a wet edge to avoid lap marks.
Be sure to prime any new or exposed metal on gutters and downpipes before painting.
For windows, start by cutting in around the glass with a small sash brush, then use a larger brush for the surrounding frame. Use masking tape along the glass edge to give a clean finish.
Doors are painted from the outside in, doing the moulding first. Paint the edges, then the face, returning to the edges to lightly feather off any surplus paint with the tip of the brush. You'll probably be using an enamel here, so it's better to remove the door completely and paint on trestles.
When to Paint
Always paint in the shade, never in the sun.
Outside painting should only be done in temperatures between 10 and 40 degrees Celsius. In summer, the best way is to follow the sun around your home and paint only on the shady side. A hot sun will dry out the surface too quickly, which may cause the paint to wrinkle.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

4. Checklist

- Primer or Undercoat
- Paint in the finish and quantity to suit your job
- Paint brushes - a selection of wider and smaller brushes
- Roller frame and roller tray to suit
- Roller covers to suit roller frame and paint finish
- Extension handle for roller frame · Exterior filler (such as Selleys Permafill for cracks and imperfections)
- Flexible sealant (such as Selleys No More Gaps)
- Filling blade (for applying filler)
- Heat gun or chemical paint stripper (for removing old paint)
- Sandpaper (for smoothing surfaces to be painted)
- Drop cloths (to protect driveways, paths, etc)
- Sugar soap, sponge and gloves (for washing down surfaces)
- Stepladder
- Flat paddle or ruler
- Masking tape
- Clean up rags for spills and drips
- Turpentine (if using solvent-based paints)

Types of Timber Stains and Finishes

There are a variety of surface finishes on the market that offer protection and enhancement to timber while preserving its natural look.

Interior Stains
Dye Stains give a beautiful result on pine and whitewood furniture, cupboards, doors and panelling. Pigment Stains add colour without hiding the grain - they're available in decorator colours as well as timber tones. Clear Pine Finishes are intended for new, untreated pine.

Clear Polyurethane Finishes
These are commonly used to seal and protect stains, although the gloss, satin or matt polyurethane finish is attractive in its own right, especially on floors, benchtops and drawer units.

Waxes
Wax finishes offer the simplest of finishes, giving a natural sheen to bare or stained woods. Not hard-wearing but easy to maintain.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Scandinavian Oils
Exterior Oils are similar to Scandinavian Oils. These penetrating oils produce a soft, lustrous 'hand-rubbed' finish on doors, panelling and furniture. After waxes, they are the easiest to apply and maintain because the finish is in the surface and not on top of it. You may need to apply more coats of an oil than you would have to apply of a polyurethane.

Exterior Timber Stains
These are used for gables, weatherboards, windows, fascias, pergolas, decks and fences. These stains are lightly pigmented yet semi-transparent, allowing grain and texture to show through.

Acrylic Finishes
These are recommended for areas exposed to strong sunlight. The tough, flexible finish of a good product such as Dulux Timbacryl gives protection to a surface and needs less maintenance than a stain.

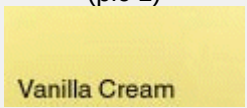
Pick your Colour
When choosing stain colours, remember that the shade may be slightly different to that shown on the colour chart. This is due to the colour and porosity of the timber. As a general rule, the lighter the stain colour, the more it will be affected by the colour of your timber. Additional coats will intensify the colour. Most stains darken as they dry.

Creating a Marbled Paint Effect

Materials Needed
- Dulux Acrylic Sealer Undercoat
- Dulux acrylic base paint, colour of your choice.
- Dulux acrylic top coat, colour of your choice.
- Standard roller (10mm sleeve)
- Sponge
- Goose or swan feathers
- Rubber Gloves

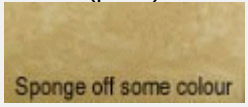
Note: The success of your special paint effect will depend on the consistency of your technique. We recommend you

(pic 1)



(pic 2)

(pic 3)



(pic 4)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

practise on trial samples until you are happy with the effect and comfortable that you can duplicate the technique on your final surface.

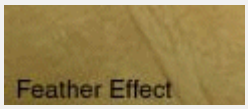
Prepare your Wall
All surfaces to be painted must be firm, clean and dry.
If the surface has been previously painted and it's in poor condition, the area should be sanded to give a sound surface.
Fill in cracks or dents where necessary.
Apply Dulux Acrylic Sealer Undercoat.

1) Apply Base Colour
Using a paint roller, apply 2 coats of acrylic base colour and allow it to dry thoroughly.
We have used Dulux Vanilla Cream as the base in our example. (pic1)

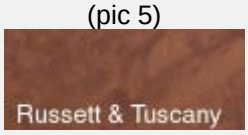
2) Roll on Top Coat Colour
Roll on the top coloured coat with a standard roller (10mm sleeve) as if you were painting the wall (cutting in where required with a paint brush). If working alone, only paint a manageable area, approximately 1 metre across the wall, this will maintain a wet edge. If two people work together, the first person applies the top colour coat using the standard roller and the second person follows with the sponge and dragging feathers.
Our top coat colour of choice was Dulux Colour Effect, Classic Ochre. (pic2)

3) Sponge Off Colour
This should be done while your top coat of paint is still wet. (see Pic3)
By using the sponge and feathers we recreate the subtle veining of marble.
The sponge should be thoroughly dampened (squeeze out any excess water). Sponge the wet paint to randomly remove some of the top colour, thus revealing the colour underneath, and create a soft cloudy background. Rinse the sponge regularly. Wear gloves to keep clean.

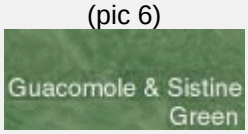
4) Use a Feather to Create Marble Veins
Rework the same area while the Colour Effects is still damp to create the veining with feathers. Use Goose or Swan feathers for best results.



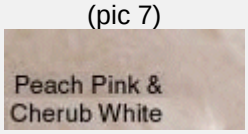
(pic 5)



(pic 6)



(pic 7)



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Lightly hold the feather by the quill and pull it diagonally across the surface, turning it from side to side. The secret to believable veining is to have subtlety.
Our combination included: Base colour = Dulux Vanilla Cream and Colour Effects = Classic Ochre. (See pic 4)

Alternative Colour Combinations for the Marbling Effect:
Base colour Russett with Dulux Colour Effect Tuscany (Pic 5)
Base colour Guacomole with Dulux Colour Effect Sistine Green or (pic 6)
Base colour Peach Pink with Dulux Colour Effect Cherub White. (Pic 7)
Keep in mind that the colours you see on your screen may be different to the actual paint colour. (This is due to different monitor settings and resolutions.) We recommend that you test all colour schemes with colour cards and test pots

Creating a Ragged Paint Effect

Materials Needed
- Dulux Acrylic Sealer Undercoat
- Dulux acrylic base colour of your choice
- Dulux top coat paint, colour of your choice
- A collection of dry, lint free cloths sized about 0.5m x 0.5m
- Rubber gloves
- Paint Roller

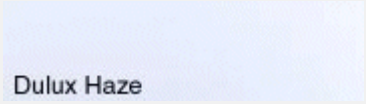
Note: The success of your special paint effect will depend on the consistency of your technique. We recommend you practise on trial samples until you are happy with the effect and comfortable that you can duplicate the technique on your final surface.

Prepare your Wall
All surfaces to be painted must be firm, clean and dry.
If the surface has been previously painted and it's in poor condition, the area should be sanded to give a sound surface.
Fill in cracks or dents where necessary.
Apply Dulux Acrylic Sealer Undercoat.
Note: Paints must be thoroughly stirred before and during

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

application.

1) Apply Base Colour
Using a paint roller, apply 2 coats of acrylic base colour and allow it to dry thoroughly.
We have used Dulux Haze as our base colour. (See Pic 1)



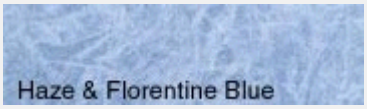
(pic 1)

2) Apply Top Coats
Roll on another colour of acrylic paint as your top coat with a standard roller, 10mm sleeve as if you were painting the wall (cutting in where required with a paint brush.)
If you're working alone, paint a manageable area, approximately 1 metre across the wall - this will maintain a wet edge. If two people work together, the first person applies the top colour coat using the standard roller and the second person follows with the bunched up rag or cloth.
We have used Dulux Colour Effects, Florentine Blue as our second coat. (See Pic 2)

(pic 2)

3) Ragging
By removing the top layer of paint with a bunched rag, a textured look of crushed velvet is created.
The dry lint free cloth/rag is held loosely in a bunch (not rolled into a sausage). Use a cloth that is large in size - about 0.5m x 0.5m, rather than using a small cloth. Have a collection of rags ready to used. Wear gloves to keep clean.
The bunched cloth should be lightly dabbed across the wall. Change the shape of the cloth regularly. Once the cloth is laden with paint, change to a new clean cloth.

Our combination included: Base colour = Dulux Haze and Colour Effects = Florentine Blue. (See Pic 3)



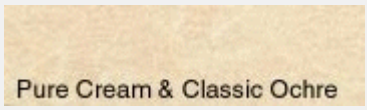
(pic 3)

Alternative colour combinations for ragging:
Base colour Pure Cream and Colour Effect Classic Ochre (See Pic 4) or

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

(pic 4)

Base colour Tortoise and Colour Effect Monacco Green (See Pic 5)



(pic 5)

Keep in mind that the colours you see on your screen may be different to the actual paint colour. (This is due to different monitor settings and resolutions.) We recommend that you test all colour schemes with colour cards and test pots.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Pests around the house

Ants - Bats - Bedbugs - Bluebottles - Carpet Beetles - Cockroaches - Death Watch Beetles - Earwigs - Fleas - Flies - Mice - Moths - Rats - Spiders - Wasps - Woodlice - Woodworm

REMEMBER: This sheet suggests the use of certain poisons and chemicals to control the pests - these can be dangerous. Always handle with care and follow the manufacturer's instructions.

ANTS

The common garden (flying) ant is black, about 3-4 mm long and usually lives in outdoor or underfloor nests. Swarms of short-lived flying ants emerge to mate in August. Although garden ants are a nuisance, they are not significant disease carriers.

Pharaoh Ants are reddish in colour and about 2 mm long. They are fairly common in flats and hotels and spread disease from drains to food. They nest within the building structure and may well be hard to get at.

Remedy:

Find the nest entrance and pour boiling water over the nest site. Then apply an insecticide powder. An insecticide lacquer can be applied around door thresholds or wall/floor junctions where ants run. Ant Bait work so that the ant takes the bait back to the nest, killing the whole colony after a few days; lay in along where ants run. If you have a Pharaohs infestation, you may need to contact a local pest control contractors or Environmental Health Department.

BATS

Bats sleep during the day, hanging upside down from the roof rafters or on an outside wall. Contrary to popular ideas, they do not like belfries as they like drought free locations. Various types are native to Britain and are usually seen around dusk as they sweep across the sky catching air borne insects. They cause no harm and under British law, can only be handled by licensed people.

Remedy:

Law protects all species of bat found in the UK as they are endangered species, it is illegal to kill or even disturb bats in their roosts. If you have a colony of bats, you should contact the Nature Conservancy Council, they will arrange for a person to visit the site and advise on the best course of action.

BEDBUGS

The adult bug is brown and about 3.5 mm long. They feed on blood, they have a needle sharp bite which pierces the skin of a sleeping human or other warm blooded animal. After it has finished feeding, the swollen bug will then crawl away to its' hiding place to digest its' meal. You may also find them under loose wallpaper or in crevices in the furniture.

Remedy:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Try to avoid them in the first place, good cleaning and using clean bed linen will reduce the chances of an infestation. If you have an infestation, you will need to have the premises, clothing and bedding sprayed with an insecticide spray, but this is best left to the experts - either from a local pest control contractors or Environmental Health Department.

BLUEBOTTLES

These large, buzzing flies have shiny metallic blue bodies and are 6 - 12 mm long. They are attracted to dead meat, on which they lay their eggs as well as feeding. They are often found around refuse tips, rotting animal matter, dirt and dustbins. They spread disease between their various landing places.

Remedy:

Keep dustbins clean, with tight lids and away from doors and windows, Keep meat and other food covered. Use an insecticide dustbin powder. Indoors, use a vapour insecticide strip or aerosol fly-spray. You could also fit fly screens over kitchen windows.

CARPET BEETLES

The Varied Carpet Beetle is 2 - 4 mm long, like a small, mottled brown, grey and cream ladybird. The larvae are small and covered in brown hair and tend to roll up when disturbed. The adult carpet beetle can fly and lives outside the house, feeding on pollen and nectar. Sometimes they lay their eggs in empty birds' nests, but they also like felt, fabric and accumulated fluff in buildings. It is the larvae that do the damage, which usually consists of well-defined round holes along fabric seams.

Remedy:

Check the loft and eaves for old birds' nests or dead birds and remove them. Keep fluff and debris under control within the house, including the airing cupboards, shelves, floorboards, carpets and upholstery. Vacuum carpets on a regular basis. Lift carpets and underlay and clean floors and carpet thoroughly. An insecticide is needed to deal with a bad carpet beetles infestation and affected items can be sprayed or dusted.

COCKROACHES

Distinguished by their very long, whip-like antennae, flat oval bodies and rapid jerky movements. The adult German cockroach is brown and about 12 mm long, the Common or Oriental cockroach is about 20 mm long. They eat all kinds of food - meat, vegetables, fruit, bread, even paper and leather. Cockroaches thrive around heating ducts and boiler rooms of large centrally heated buildings and cluster around pipes, stoves and sinks, especially in humid areas. They taint food with an obnoxious smell and may be carriers of various diseases, including serious food poisoning.

Remedy:

Control is seldom easy because it is difficult to get the insecticide to the insect. The insecticide should have sufficient persistence to kill baby cockroaches as they hatch. If this fails call in your Environmental Health Department or pest control contractor.

DEATH WATCH BEETLE

A woodboring beetle, the grubs eat old hardwood. Adults rarely fly, so infestations are generally restricted to areas where previous infestations have not been completely eradicated or where old, infected timber has been introduced. They prefer hardwood, not the softwoods

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

used in modern softwood house timbers. Grubs live up to ten years inside timber, emerging as adult (mottled grey/brown) beetles about 7 mm long. They produce a rapid tapping sound by beating their heads against the wood as a mating call.

Remedy:

Persistent and thorough use of a proprietary woodworm killer will deal with small outbreaks. Call in a wood preservation company for large infestations.

EARWIGS

Earwigs are easily recognisable by the pair of pinchers at the end of their abdomen. They are dark reddish-brown, with light brown legs, about 15 mm long. They are primarily nocturnal, with some species being attracted to lights. They are considered scavengers, eating almost anything, but some are predatory. They also eat live plants.

They can be found in the homes, but prefer cracks and crevices. Their populations will build up around foundations. They can produce large populations rather quickly. Earwigs can live in habitats that also house other insects. Their habitats are environments like mulch, pine straw, leaf litter, etc.

Remedy:

The removal of their habitats is very important for controlling earwigs .

Vapour strips can be hung around all entry points, windows, doors, plumbing under sinks, skirting boards etc. Spray can be used in uninhabited areas such as garages and basements. In addition, spray the area around the outside of the house. Alternatively baits are available which can be laid down in the general area of infestation.

FLEAS

Their little 2 mm bodies are flattened from side to side and they are well known for their ability to jump. The tiny white eggs are laid in small batches on fur, hair, feathers or the sleeping places of the host (human, animal or bird). Adult fleas feed on blood and their bites can cause intense irritation. The cat flea is the most common and readily bites humans. August and September is when they are at their peak.

Remedy:

Treat any infested pets with a special veterinary aerosol, powder or shampoo - injections are now available from vets to protect pets for a period of time. Burn infested bedding and spray or dust a suitable insecticide into all cracks and crevices in walls and floors. Remove old birds' nests etc. from around the house.

FLIES

Around 10 mm long, the House Fly is the most common pest in buildings and is found in most homes. They feed by vomiting saliva on to the food surface, treading it in and sucking up the resulting liquid! The fly is a health hazard; it passes on dangerous germs from the last place that it visited - which could have been anywhere from a dustbin to animal droppings!

Remedy:

Scrupulous hygiene and prompt disposal of all rubbish will discourage flies. Keep food covered and site dustbins away from doors and windows. You can also fit fly screens to doors

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

and windows.. There are a number of fly-killer aerosols on the market as well as impregnated plastic strips giving off insecticide vapour.

MICE

Mice are usually detected from their dark coloured droppings as well as noticing damage to stored food, packaging or woodwork. Mice have a compulsive need to gnaw; electric cables, water and gas pipes, packaging and woodwork can all be seriously damaged. They climb well and can squeeze through very small gaps. They contaminate food and can carry many diseases, particularly food poisoning.

If you live in or near the country and think you have mice, you may have field-mice or other furry creatures; they cause just as much damage but tend to be less dangerous.

Remedy:

Keep your home mouse-proof, this means blocking all possible routes into the house. While they can get into a cavity wall or roof space, they will be very hard to eliminate - check that the structure around all pipes projecting through the outer skin of the house are fully sealed. Proprietary mouse killers are available for household use and more powerful methods are available but can only be used by pest control contractors or environmental health departments.

There are humane mouse traps available. They usually consist of a box that the mouse is tempted into. Once trapped you simply let the mouse free into an open area a long way from your home.

MOTHS

The clothes moths have infested many households. Two kinds are common:

- The case-making moth is so called because the caterpillar spins a shelter case of silk and bits of the material on which it is feeding.
- The webbing clothes moth, the most abundant and injurious species, spins silky webs as it moves over a piece of material.

The adult moths are probably harmless. The clothes moth stays in dark places and flies very little. However the female begins to lay eggs, before it is a day old, and lays about 100 in the 7 to 14 days of its life. The soft, white eggs are laid loosely upon the material on which the larvae are to feed. They are easily dislodged and crushed, so that anything that is regularly brushed or shaken should not become moth infested. In warm weather the eggs hatch in from four to eight days. In colder weather, hatching may take as long as three weeks. The larvae eat furiously for about 40 days before turning into pupae. The pupa stage lasts eight to ten days in warm weather, and three to four weeks in the winter in a heated building. Eggs, larvae, and pupae die quickly at low temperatures.

It is the larvae that does the damage to clothes and are about 12 mm long white worms. Adults are yellow-brown, with narrow wings, about 12 mm long. They eat protein based material, they have an unusual ability to digest keratin. Keratin is found in woollens, furs, hair, leathers, hides, feathers, horns and stored meat and dairy products. Clothes moths hardly ever damage synthetic materials. Keratin is also found in hair, skin and nail tissues. Clothes moths will damage silk and linens, and synthetics, but it will be incidental, while the larvae are eating their preferred foods. They particularly damage fabrics stained from oil from human hair, human sweat, urine, beer, milk, soft drinks and juices.

Remedy:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The first order of business is to clean stored clothes. It is important to identify the source of infestation. Besides looking where clothes are stored, look around your baseboards for fluff. At times they can be found in your kitchen and in bird nests. Vacuum very well all the cracks and crevices of the infested area and spray with a suitable aerosol and place a cloth moth trap. The old fashion moth balls (with their distinctive smell) can also be used when storing clothes.

RATS

The Common, or Brown Rat is about 250 mm long and is a creature of habit, living both above and below ground. The Black Rat (the original plague carrier) is smaller - about 175 mm long and is an agile climber. They breed rapidly and, like mice, need to gnaw constantly. Brown Rats burrow underground or into soft material; refuse tips, loose soil under sheds and straw are likely sites. They damage woodwork, plastic and pipes and will sometimes strip insulation from electric cables by their gnawing (until they met their maker in a flash!). They spread many diseases including food poisoning. They contaminate more food than they consume and their urine can pollute stagnant water.

Remedy:

Block off gaps under sheds and move loose piles of wood. Do not encourage rats by leaving scraps of food out of doors, if you think you have an infestation, stop feeding the birds as you could be feeding the rats. Poison is available as proprietary, ready-mixed bait. Serious or persistent infestations should be dealt with by a pest control contractors or Environmental Health Department.

SPIDERS (if you call him a pest !)

House spider help us by eating a large number of household pests. None of the native British types are poisonous to man. The reason why they are often found in baths and sinks is that they cannot climb smooth surfaces, so if they fall in, they are stranded.

Remedy:

To remove a spider there is no need to kill it. Simply place a carton over it, then slip a piece of thin cardboard between the carton and the surface to form a lid. Then take the sealed container out of the building and let the spider go.

WASPS

Around 10-20 mm long. The queen wasp is larger and hibernates over winter, making a new nest in the spring in which she lays her eggs. If annoyed or threatened, wasps will sting. They can come into the house where they are attracted to sweet things (jams, fruit etc.).

Remedy:

You can fit screens over windows if wasps are a major problem. Individual wasps can be killed with a fly-killer aerosol. The old-fashioned method of filling ajar one-third full with jam and water, covered by a punctured paper lid will drown them. If you find a wasps nest in a wall or bank, and are brave, apply a powder insecticide product from a puffer pack labelled for wasp nest control. Thoroughly spray nests in roofs or sheds with an insecticide. This can be dangerous as the wasps can become angry and attack any animal (including humans) in the area and is best performed by professionals. Some local councils will do it for free.

WOODLICE

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Typically 12 mm long, with oval, grey segmented bodies and 14 legs with prominent antennae. Woodlice are quite harmless although may damage plants indoor and out.

Remedy:

Not necessary to remove them unless they persist. Put right any dampness, remove infested vegetation and use an insecticide powder or long- lasting spray around door thresholds.

WOODWORM

This is a term used for the destructive larvae of several species of wood boring beetle. The first sign of woodworm is the appearance of neat round holes 1-2 mm across in wooden surfaces, often accompanied by tiny piles of wood dust. The adult Furniture Beetle is a small brown insect about 5 mm long who can fly and lay eggs on rough, unpolished wood. The grubs bore straight into the wood - leaving no trace until they emerge as beetles three or more years later, usually between May and September. They are usually introduced into the house in second-hand furniture, tea-chests and the like but they can also fly in through windows from nearby dead branches of trees. They may attack floorboards, joinery and, more seriously, structural timbers.

Remedy:

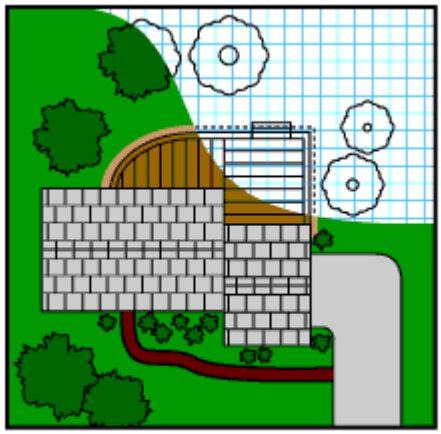
In furniture, woodworm can be cured by application of a woodworm killer which will penetrates quickly and can be applied using a brush or spray. As the pest is inside the wood, the liquid should be applied quite generously. You can also buy an insecticide polish as a precaution against woodworm. You can buy proprietary fluid used by the experts and treat woodworm in structural timbers yourself. All timbers should be cleaned first and any roof insulation material will have to be removed temporarily so that you can get at the joists. Cover electric cables and the cold water storage tank. Lift floorboards to get at the undersides and joists. You can have detailed surveys, reports and estimates carried out by specialist wood preservation companies and many cover their treatments by long term guarantees - this may help if you sell the house so it is worth considering the additional initial cost for a subsequent benefit.

REMEMBER: This sheet suggests the use of certain poisons and chemicals to control the pests - these can be dangerous. Always handle with care and follow the manufacturer's instructions.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Planning a Deck

OVERVIEW



Introduction

Once you have decided you can no longer live without a deck in your backyard, your first step is to start the planning process. The planning process is simple, fun, and can be done in a relatively short period of time. Whether you plan on hiring a contractor or building the deck yourself, the planning process will help you determine exactly what you want and what deck features you can use most effectively. All you need are some simple drawing tools and a good idea of how you want to use your new deck.

As any architect will tell you, the best way to plan the construction of any building, object or space is to follow these basic steps: CREATE A PROJECT PROGRAM which will include all desired elements and uses; understand and sketch your EXISTING CONDITIONS; develop a SCHEMATIC DESIGN diagram based on your requirements showing program elements; DEVELOP THE DESIGN into an actual sketch or plan using correct dimensions and scale; create a CONSTRUCTION DOCUMENT to build from including structure and materials.

If you plan on hiring a contractor, they will develop the construction document based on your design. If you plan to build the deck, you will need to determine specific structural information to complete the construction document.

BEFORE YOU START...

SKILL LEVEL & TIME TO COMPLETE

- Beginner - 3 to 4 hours
- Intermediate - 2 to 3 hours
- Advanced - 1 to 2 hours

COMMON MISTAKE Check for deck building codes in your area before you start the planning process. This will save you from having to redesign your deck if your first choice fails to meet code.

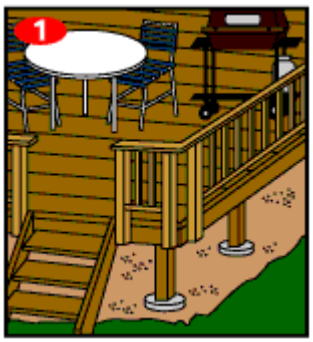
HELPFUL TIP Many design professionals will take small pieces of paper or "post-it" notes and cut out furniture and elements to the correct scale, then move them around on the paper. This helps in planning size and space.

HELPFUL TIP If you plan on hiring a contractor to build your deck, your local building department should have a list of approved contractors that you can contact.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

STEPS

1. **Step 1 - Create a project program**
   Write down all the things that you want to do with your deck and prioritize them. Some examples: Will you be cooking on the deck - how big is your grill?



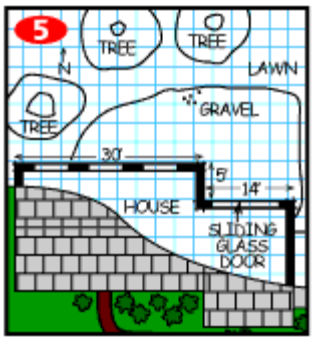
2. Or will you have a dive platform into the pool? Why not a bench to dry off? Will you be eat dinner on the deck? How big is the table and how many chairs do you have? Account for room to scoot and the number of people that might use this deck at one time. How about parties?

3. You will need to have steps for easy access to the yard or garage, so account for those as well. Also think about if you want your deck in the shade or sun. and where trellis or existing trees are located.

4. Do you want a Jacuzzi? If not now, you might in 3 years. Once you have a rough idea of how many people will use the deck, how you will furnish it and what built-in features you want, you are ready to start sketching.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

5. **Step 2 - Account for the existing conditions in your yard. (Figure 5)**



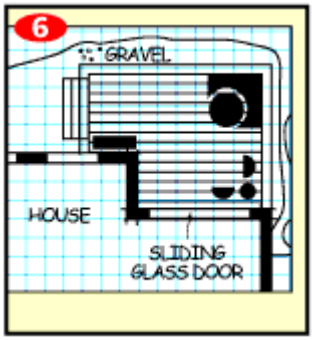
Using your tape measure and graph paper, measure and sketch the structure and adjacent landmarks that your deck will be attached to and be surrounded by. This is really easier than it sounds. Use a ruler or straight edge and make a simple diagram (bird's eye view) of the surrounding structures and landmarks that are close enough to be relevant including driveways and landscaping. Be sure to measure the distances between these objects and draw them correctly.

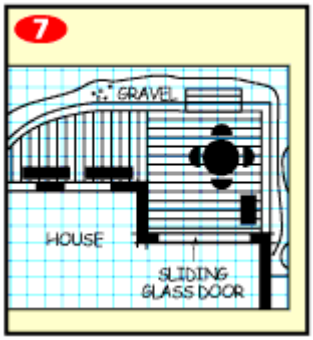
a. Each square on your ¼" graph paper can represent one foot. If your structure will not fit on one length of paper, either tape two pages together or have each square represent two feet.

b. Be sure to show door and window locations on adjacent structures. This has an obvious impact on access and sight lines.

c. Shade, sunlight and wind protection can be important factors when designing outside space. Adjacent trees should be shown on the plan. Show both the trunk and the "drip line" which designates is the outside edge of the branches above.

6. **Step 3 - Create a schematic design (Figure 6 & 7)**





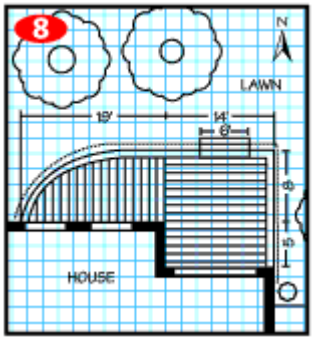
Once you have the existing conditions correctly drawn to scale, your sketch will help you make some initial decisions about deck size and constraints. The yard, driveway, house and landscaping will act as important elements in your design.

a. Make several copies of your sketch showing existing conditions and use this as a template for the planning process. You'll go through a few of these before you are done.

b. Begin creating cartoon like diagrams of the different functions and elements on your template. Show all desired elements in your initial sketches including picnic table(s), barbecue grille, benches, railings and steps.

c. If you are brainstorming multiple design options, let your imagination go to work and draw as many ideas as you can. Sometimes your best design doesn't appear until your 3rd or 4th version.

7. **Step 4 - Development your design (Figure 8)**



Once you have established a design diagram or deck shape you like, a final draft with correct dimensions needs to be drawn. You will now need to consider a third dimension. Access to the deck from the yard or building is seldom from the same level (or elevation as we say in the business).

a. Your first step is to layout to scale the shape of your deck. Do this on your template using the ¼" squares.

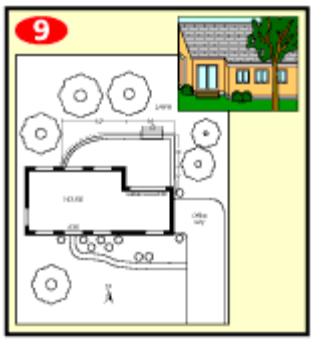
b. Measure the vertical distance from the building access (or highest point) to the ground access (or lowest point). This dimension divided by 6" will give the approximate number of steps required on your deck.

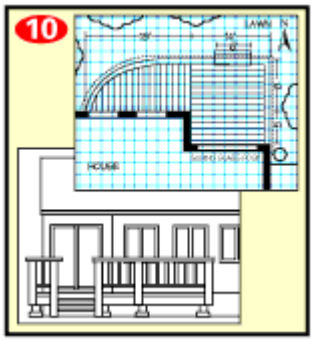
c. Place the steps at desired locations making the run (or tread) approximately 12" or any length you desire. Remember that you can place steps on the edge or middle of your deck.

d. Indicate railings and benches along the perimeters. Railings should be used wherever the deck exceeds 18" in height off the ground.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

8. **Step 5 - Construction drawing (Figures 9 & 10)**





A construction drawing has many purposes. It acts as a guide showing you how to build your deck. It helps you order the correct materials for the project. Depending on your city of municipality, you may also be required to submit these drawings for a construction permit. Many cities require the following items be submitted before they will grant you a building permit:

a. A photo of the part of the house you are attaching too.
b. A site plan of the lot showing all structures including drives with the deck indicated.
c. An enlarged floor plan of the new deck
d. An elevation of the deck and attached structure. (An elevation is a drawing of the side or face of the structure).
e. There is usually a small examination fee to be submitted with your application. A construction drawing typically consists of what is required to actually construct your structure. It should indicate actual dimensions and materials. Think about what size of each element you will use. Think about how much concrete to set your support posts. How many galvanized nails you'll need. An effective construction plan has a COMPLETE material list. If you hire a contractor, he is responsible for the permit and providing the city with whatever is required. Be sure to attach your final planning sketch to your written agreement with your contractor. You want to make sure he builds exactly what you've designed.

Materials Needed

- Tape measure
- Graph paper (1/4" squares are preferable)
- Ruler or straight edge
- Pencils, markers or crayons
- "Post-It" notes

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Planning a new internal partition

Building a partition will not increase the actual floor area available within a house but by subdividing it more appropriately it can provide extra rooms which will make living in the house more enjoyable.

Although UK planning permission will not be required for erecting an internal partition, UK building regulations still need to be satisfied, these cover such aspects as ventilation, fire safety and drainage (if appropriate). It is worth discussing the plans with the local building control office for guidance as to the requirements and whether formal building regulation approval will be required.

Whatever the purpose of the partition, a number of points need to be considered:

- **Lighting** - natural daylight may not be necessary although it is often desirable. If an existing window is not going to be included in the partitioned off area, a new window could be added in an outside wall. Alternatively glazing could be incorporated into the partition to 'borrow' light from the adjacent room, this can easily be incorporated along the top of the partition.
- **Ventilation** - although a window is probably the most common form of ventilation, it is quite possible to include an electrical extractor fan to ventilate the new area.
- **Access to the room** - generally a new doorway will need to be built into the new partition, various options are possible - a standard internal (30 in) hinged door, two half doors, a sliding door or a curtain - limitations of space may be overcome by careful planning. Remember that furniture may need to pass through the new doorway.
- **Electrics** - often when a room is divided, it is necessary to change the ceiling lights. The existing light may need to be repositioned and a new light and switch may need to be added in the 'new' area. The switch will usually be positioned by the side the door in the partition, so the wiring and switch will need to be incorporated into the partition during construction. Alternatively a ceiling mounted pull switch may be added - this is a UK requirement where the room is to be used as a washroom or shower. There may be a need for additional wall sockets on one or both sides of the partition; it's generally easier to build these into the partition rather than adding new sockets to existing walls.
  Outlets may also be required on the partition for heaters, shower units etc.
- **Plumbing** may also be required. The most obvious requirement is where the partition is being built to create a shown area.

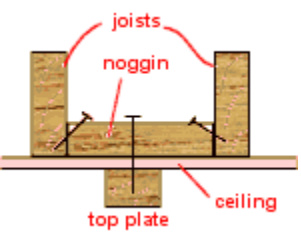
If services like electricity and water do need to be provided, it is usually easier to place these inside the new partition wall rather than having to fit them in existing walls.

Draw a plan of the existing room and draw in the proposed partition and work out where to put doors, extra windows, forced ventilation, electric's, and plumbing etc. It may be difficult to visualise the scale of the new rooms and it often helps to 'make' a full scale plan by marking out the proposed partition on the floor of the actual room and moving the furniture into the 'two' rooms - this will help to determine if the rooms will both be usable.

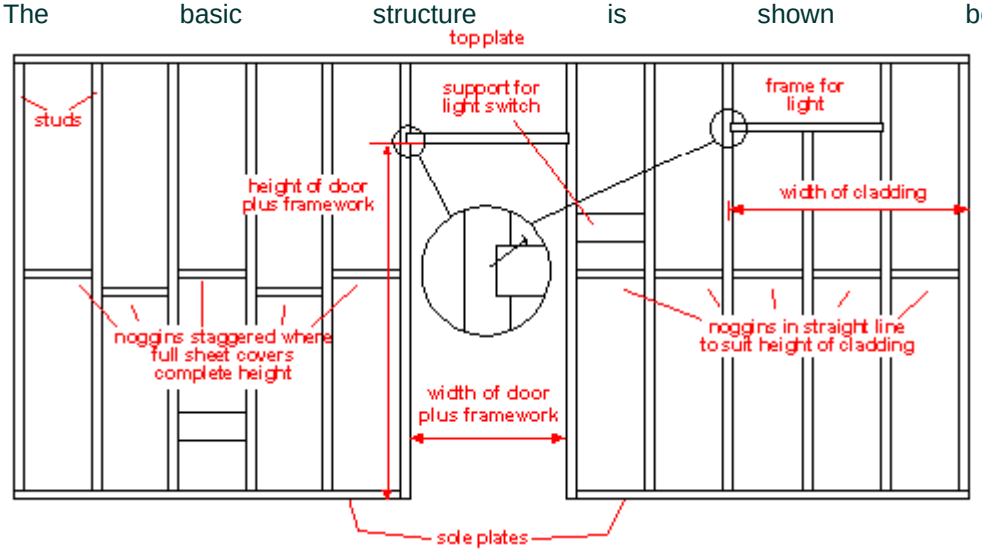
The basic stud partition framework

A stud partition is an easy way to divide an internal room, it is really a temporary structure which can be removed if the use of the area changes.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



The basic structure is shown below:



Recommended sizes for the timber (all sawn) are:

- Top and sole plates - 100mm x 50mm (4 inch x 2 inch)
- End studs - 100mm x 50mm (4 inch x 2 inch)
- Other studs - 100mm x 75mm (4 inch x 3 inch)
- Noggins - 100mm x 50mm (4 inch x 2 inch)

Top and sole plates.

Mark the line of the sole plate first - there will probably be two lengths, with a gap for the doorway. The gap for the doorway should allow for the door frame required and for the two studs between the top plate and the floor. It is often a good idea to position the doorway such that a full number of cladding sheets will fit between an end wall and the side of the door; this will reduce the amount of work necessary when the partition is clad.

Positioning the partition:

- If the floor joists run at right angles to the partition, no special requirement is necessary other than to keep the sole plate on one floor board if possible.
- If the joists run parallel to the partition, position the sole plate over a joist.
- If the partition is being erected on a solid ground floor, place a layer of damp-proof course felt or heavy polyethylene between the floor and the timber; this will eliminate the risk of rising damp.

Before the sole plate is secured, ensure that the locations of any electric cables, water and other services under the floor are known.

Secure the sole plate to the floor, ensure that the separate lengths are in line - either use a long straightedge across the doorway or run a string line between the extreme ends. On a timber floor, nail through the sole plate into the joists (not just the floor boards) at about 1 metre spacing. On a solid floor, use suitable plugs and screws.

Use a plumb line or a vertical straightedge to locate the line of the top plate. Cheek whether the top plate will run across or parallel to the joists above the ceiling.

If the joists are parallel to the run of the partition, the line of the top plate may or may not coincide with a joist,. If the top plate does not line up with a joist, noggins should be fitted

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

above the ceilings so that the top plate can be secured into something fairly solid - such noggins should be spaced about ever 2 metres.

Before fixing the top plate, locate and mark the positions of the joists or noggins into which it will be fixed. The joists may not be evenly spaced, so measure each individual spacing and mark them on the top plate. Drilling pilot holes through the top plate will reduce the effort when hammering the nails through the ceiling.

Secure the top plate to the ceiling - making sure that it is exactly above the sole plate.

Fitting vertical studs.

Measure the distance between the top and sole plates at each end, and cut the end studs slightly longer than this to ensure a tight fit. The back of the studs may need to be cut away at the bottom so that they clear any existing skirting board and fit flat against the existing wall. Fix the end studs to the existing walls using screws and plugs if they are masonry, and fix to the plates by skew-nailing - drive nails through the upright at an angle so that they penetrate the plates.

The spacing of the internediate studs should be such that the sides of each plasterboard sheet (or other cladding) ends in the middle of a stud - for a 1220mm (4 foot) sheet, 1 or 2 intermediate studs should be fitted. The length of each intermediate stud should be individually measured to allow for any irregularities in the floor or ceiling, and again cut slightly longer than the dead size.

It is easier to cut any recesses to take light and door noggins before the stud is fixed between the top and sole plates.

Secure each stud by skew-nailing into the plates, use two nails per side at both top and bottom.

If windows/lights are to be fitted into the top of the partition, cut recesses (12mm - 1/2in deep) into the studs to take the noggin under the window. The window can span across two noggins, in which case the intermediate stud will need to be shorter than the adjacent ones. Do not span more than one stud in this manner as it will seriously weaken the framework. Leave fitting the intermediate stud until after the window noggin has been installed.

The studs on either side of the doorway should go from under the top plate to the floor itself, cut recesses (12mm - 1/2in deep) to take the over door lintel. Position the recesses to take account of the height of the door and the door frame which will be built later. Carefully check that these studs are vertical when they are erected, nail through the bottom of the studs into the sole plate.

Fitting the noggins

When all the studs have been erected, measure, cut and fit the noggins; unlike the studs, the noggins should be cut to the exact size of the gap. They are also fixed by skew-nailing, and are positioned so that the horizontal edges of the sheet cladding align with the centres of the noggins. However, it is usual to fix plasterboard sheets vertically rather than horizontally, so a full 2440mm long sheet will cover from floor to ceiling in most modern rooms. In this case, noggins can be located halfway between floor and ceiling and staggered up and down by about 50mm. This allows the noggins to be fixed by driving nails through the stud into the ends of the noggins.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If vertical timber planking is to be used for the cladding, position noggins at about 450mm (18 inch) vertical spacing.

The lintel above the door and the noggins under any window/light should be fitted into the recesses previously cut in the studs.

The basic frame is now complete, and any holes for pipes or cables can be drilled through the timbers. It may be easier to fit these services after one side of the cladding has been fixed. If any heavy objects or wall units are to be fitted to the partition, extra noggins can be fitted to suit.

Support blocks should be fitted to take any switch or socket boxes, position these so that the front of the box will just be flush with the surface of the cladding when fitted

Cladding with plasterboard

The plasterboard should be cut 13mm (1/2 inch) shorter than the floor to ceiling height, taking account of any variations which should have become apparent when fitting the studs. The spacing of the studs and noggins should ensure that every edge of the plasterboard is supported on the framework.

Plasterboard is easily cut by scoring firmly with a craft knife on one side (use a straightedge), and bending back along the cut. Then cut the paper backing to separate the two pieces. Gently sanded the cut paper edges to remove any burrs. Holes can be cut in the board using a pad saw, but this is often easier to do after the board Is fitted in position.

Using a 'door lifter wedge' to support the plaster board during fixing can make the job easier. A simple door lifter wedge can be made from a triangular piece of timber about 150mm (6in) long and 50mm (2in) high. This can be used as a lever under the plasterboard sheet to push it into position, the wedge can be held in place using foot pressure leaving both hands free to nail the sheet in place.

Before nailing the plasterboard in place - make sure that the plasterboard Is the right way around!

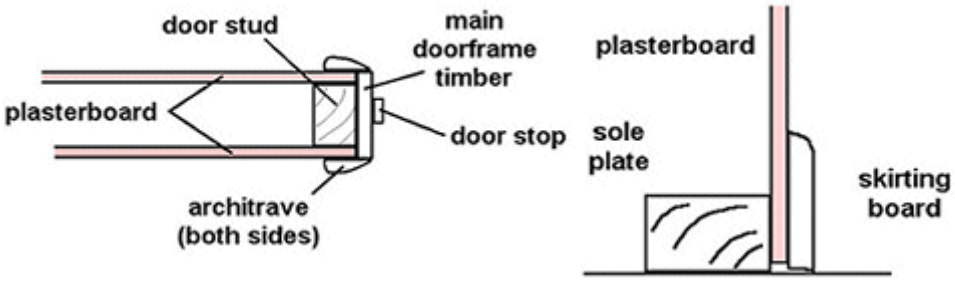
Offer up the plasterboard to the framework, and hold it firmly up against the ceiling using a door lifter. Check that the edges are centred over the studs, and fix it in position using galvanised nails, The nails should be no closer than 12mm (1/2 in) to the edge of the board. Drive the nails in until the head of the nail just dimples the surface of the board without fracturing the paper liner. Space the nails 100mm (4 inch) along the edges of the plasterboard and 150mm (6 inch) along the studs and noggins behind the sheet.

Each sheet should be butted against each other.

Complete the cladding on one side of the framework before starting on the other side.

Finally apply jointing tape (aka Plasterer's scrim) over the joints and nail heads - this does not add any strength to the wall but gives a suitable surface for application of a final, thin coating of plaster.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Finishing a stud partition

Once the plasterboard has been fitted and the surface frames and skirting board can plastered, the door/window be fitted.

The studs and noggin around the doorway need to be covered with planned timber, the main frame should be 25mm (1 in) thick and wide enough to cover the studs and the edges of the plasterboard. For a hinged door, architrave is then fitted around the frame on both sides and the door hung.

The door stop is added after the door has been hung.

For windows/light the same form of finishing as used for the doorway is appropriate.

Skirting board timber should be cut as required and secured along the bottom of each side of the partition, nail through the skirting into the bottom of each stud or the sole plate.

The surface can now be decorated just like any other wall, by painting or wallpapering.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Planning Permission and Building Regulations.

NOTE: These notes are specific to **England and Wales** only. However they do not apply to properties in Conservation Areas, Listed Buildings or Conservation Areas, Listed Buildings, or properties other than single dwellings (such as flats) within England and Wales.

Please use the information on this page as guidance only, your local Building Control Office will generally be please to give you detailed guidance.

Planning Permission and Building Regulation are often confused and misunderstood. Both are the responsibility of the Local Authority and basically while Planning Permission is permission to erect/extend a building, Building Regulations define how the new building must be constructed.

In addition to the need for these approvals, the deeds of some properties include covenants which defines what can be erected or requires the owner to get separate approval for changes from previous owners of the land, ground landlords or other bodies. These approvals are not covered in the following notes so check your deeds or obtain specific advice if you are not sure.

Planning Permission.

Local Authorities are concerned with the visual aspect of any development, and how appropriate is its intended use. Any person can make the planning application even if they do not own the land or have any interest in the land. A notice of the application will be published in the local Press and notices displayed at the property. Neighbours and anybody with an opinion are able to view the plans and make comments which the Local Authority will have to take into account.

The Local Authority will have a written policy which contains guidelines for what sort of buildings may be built in any area and, possibly, also define the building style. Whether an application is approved or refused will depend largely on the local guidelines.

The Authority's Highway Department will become involved where the application requires vehicle access or increased road traffic.

It is general government policy that development is permitted unless there are good reasons to refuse Planning Permission. Planning Permission is officially granted by a Planning Committee, (elected members of the council), which is normally open to the public. However; the Council Officers (non-elected, paid employees of the Council) will make recommendations to the committee; if the matter is routine, the committee will normally accept the official's recommendations. It is always worth consulting the officials before an application is made and again before the application goes to the committee; it is then often possible to make small last minute changes to the plans so that they will be accepted.

Even if permission is refused, there is a right of appeal - first to the council, and then to the Secretary of State. While probably not worth while for a small application, big developers have an army of specialists they call upon so that they finally get their wishes, even if they have to make some modifications.

Where Planning Permission is given for a new building or alteration, Building Regulation approval is normally also required.

Building Regulations.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

These define how a new building or alteration is to be built so that the building is structurally safe, protected from risk of fire, energy efficient and has adequate ventilation for its purpose. An application for Building Regulations approval is not advertised and only the person applying and the Local Authority are involved.

Building Regulations approval may be required even if Planning Permission is not.

Building Regulations approval is granted by the building control officers of local authorities, they are generally separate from the planning officials. Once approval has been given and work started, the local building Inspector will attend the site at specific stages to inspect the work, and they may change the requirements as the work progresses. The most common change is probably at the foundation stage when the Inspector will see the subsoil before the concrete is poured. If the inspector deems that the planned depth is insufficient, they can demand that the foundations be deepened before the concrete is laid (and you have to pay for the extra concrete).

General.

Applications for either approval involves a fee, normally related in some way to the value of the development.

Where the development is more than just a simple extension, it is worth considering employing an architect to draw up the plans, submit them to the Local Authority, obtain the approval and then to oversee the work. A professional architect will have professional insurance in case anything should go wrong and should know the Local Officials and their particular foibles.

Every application for Planning Permission or Building Regulations is, to an extent, unique. While the following are general rules, it is impossible to define all the regulations applying to a specific development - Local Authorities have some thick books of rules rather than just these few pages. It is always good advice to consult your local planning/building control officers early to avoid any costly abortive work. If work is carried out without the necessary approvals, the local authority can issue an enforcement notice requiring (at best) retrospective approval or (at worst) demolition of the work completed.

Although the functions of Planning Officials and Building Inspector are separate, the two will often be found in the same building; they are normally very helpful and offer authoritative guidance.

For the following the following definitions apply:

- Highway - all pubic roads, footpaths and bridleways.
- Original building - the building as it was first built

Electrics

With effect from 1st January 2005, Part P (Electrical safety) of the Building Regulations will come into force, these mean that only very limited work can be carried out by non-certified people without notification to the local Building Control authority.

Work which can be carried out by a non-certified individual without notification consists of:

- Replacement of fittings such as sockets, switches and light fittings.
- Replacement of the cable for a single circuit where it has been damaged.
- Work that is ***not*** in the ***bathroom*** or ***kitchen*** and consists of:
    - Adding additional lighting, light fittings and switches, to an existing circuit.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Adding additional sockets and fused spurs to an existing ring or radial main.
- Installing additional earth bonding.

All this is conditional upon the use of suitable cable and fittings for the application, that the circuit protective measures are unaffected and suitable for protecting the new circuit, and that all work complies with all other appropriate regulations.

All other work must either be carried out by certified individuals/companies or notified to the local Building Control before work begins, this includes:

- All new or modifications to the electrical wiring within bathrooms or shower rooms.
- Installation or modification of electric underfloor or ceiling heating.
- Garden lighting or power installation.
- Other specialist electrical installation, examples being, Photovoltaic Solar and micro CHP power systems.

If in doubt, check with the local Building Control.

These rules do apply to DIY activities, anyone carrying out DIY changes which are notifiable will have to submit a building notice to the local authority before starting work and pay the fee to have the work inspected and tested.

In future, problems may be encountered when trying to sell a property which has had notifiable electrical work carried out but for which the appropriate certificate cannot be produced.

Extensions

With the exception of Listed Buildings, properties in Conservation Areas, or properties other than single dwellings (such as flats) (see below for these types of property), extensions are permitted without Planning Permission provided that all the following apply:

- The area of the land covered with buildings will be less than half the area of the plot.
- The new building is at least 20m from any highway or no nearer to any highway than the original building.
- No part of the extension is higher than 4 metres and will not project above any part of the original building (normally the roof) and will not be within 2 metres of a boundary.
- For a terraced house, the volume of the extension is less than 50m3 or 10 per cent of the volume of the original building, whichever is the greater; with an absolute maximum of 115m3.
- For a semi-detached or detached house the volume of the extension is less than 70m3 or 15 per cent of the volume of the original building whichever is the greater subject - with an absolute limit of 115m3.

Note, the percentages are of the original building, this is not necessarily the same as the current building as extensions may already have been added.

All extensions of habitable rooms require Building Regulations approval to ensure that the building is structurally safe. In practice, this means:

- That any new or existing foundations are adequate for the extension.
- That drains and rainwater are handled in a safe manner.
- That stairs, balconies etc. meet the safety requirements.
- That the regulations covering ventilation, thermal insulation and fire safety are met.
- That suitable smoke detectors are installed - this should not impact upon extensions unless an escape route is lengthened.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Listed Buildings, properities in Conservation Areas and properties other than single dwellings (such as flats), have special planning requirements, so any proposed changes should be discussed with the local Planning Authority as early as possible to ensure that any complications can be caught as early as possible.

Change of use

Every existing building has a defined use, i.e. as a house, a number of flats, shop, office or factory etc. Planning Permission is required if it is intended to change from one use to another or to sub-divide the building. Planning Permission will also be required if a habitable room is to be added into the building without extending the building (such as changing a garage into another room).

Building Regulations Approval are also required to ensure that the regulations applicable to the new use are met. If you convert a conservatory (see definition below) to an extension, building regulation approval will be required.

Garages & car ports

A garage is considered to be an extension if the garage is located within 5m of the original building, so the same rules for planning permission apply. Where the garage is positioned more than 5m from the existing house, a garage is considered to be as a shed (see sheds).

If a garage adjoins the house, Building Regulations approval is required.

A detached garage is exempt from Building Regulations provided:

- The floor area is less than 30 sq metres.
- It is more than 1m from a boundary, or it is a single storey and constructed of wholly non-combustible material.
- It contains no sleeping accommodation.

Building Regulations do not apply to a carport provided the carport is open on at least two sides AND the floor area does not exceed 30 square metres. .

Loft Conversions

Planning Permission requirements for a loft conversion are subject to the same limits on volume, etc., as an extension. However, only the additional volumes to the existing loft will count towards your quota. In most cases, this will be a fairly small amount even if new dormer windows are installed, and none at all if roof lights are used.

The same height/roof line rules apply to the maximum permitted height of any dormers.

Building regulations are required; the structural requirements for any extension will apply. The biggest problems are likely to be the headroom and size of floor joists in the existing loft. Additional regulations cover:

- Normal access via internal stairways will need to conform. These rules are quite involved, but the main ones define the minimum width, slope and headroom of the stairway.
- If a loft conversion forms a third or higher floor, there must be an adequate means of escape in case of fire. This can be achieved by providing:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A safe internal route by enclosing the stairway and any landing in material with a rated fire resistance of 30 minutes, or a rated fire resistance of one hour for basements, fourth or higher floors, and flats,

or

An independent route to safety (i.e. windows with ladders). In this case, the size and access through the windows will be defined.

Aerials & Satellite Dishes

Standard domestic television and radio aerials do not require Planning Permission - it is required for larger antennae such as for short-wave transmissions.

A satellite dish is permitted without Planning Permission provided:

- It is not greater than 900 mm in diameter.
- It does not project above the highest point of the roof.

Building Regulations approval is not required.

Swimming Pools

A swimming pool is generally exempt from Planning Permission, unless you live within a conservation zone.

Building Regulations do not apply.

The local Water Supply Company must be notified, and water rates will usually rise.

Conservatories

First of all, what is classed as a conservatory? One definition is 'A building that is attached to a building and which has more than 75 per cent of the roof and more than 50 per cent of the wall areas as translucent material'.

A conservatory does not need planning permission subject to the same limits on volume, height, etc. as for an extension.

A conservatory is not classed as a 'habitable room' so Building Regulations do not apply provided the floor area does not exceed 30 sq m. However, you may have problems later if you try to convert the conservatory into a habitable room if you cannot prove that the foundations etc. were built to the required standard.

Gates, walls and fences

Gates, walls and fences do not require Planning Permission or Building Regulation approval if:

They are no more than 2m high.
or
If they adjoin a highway, no more than 1m high.

Although Building Regulations do not apply, remember that you may be liable if members of the public suffer damage from the structure. So the structure must be structurally sound and

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

maintained. Barbed wire below 2 metres is not a good idea adjacent to a highway, nor are spikes or broken glass embedded along the top of a wall.

Hedges are not covered by planning permission.

Porches

Planning permission is not required if:

- The total floor area is not greater than 2 sq m.
- It is not more than 3m high.
- It is at least 2m from the road.

Building Regulations do not apply to a porch or covered way provided that the total floor area is not greater than 30 sq m.

Sheds and Greenhouses

Neither Planning Permission or Building Regulation approval is required provided that:

- Sheds and greenhouses do not cover more than half of the area of the garden; not including the area occupied by the house.
- It contains no sleeping accommodation and the floor area does not exceed 15 square metres. .
- No point is less than one metre from a boundary.
- It is not more than 3m high for a flat roof, or 4m with a ridged roof.
- No part projects beyond any wall of the house that faces a road.
- The outbuilding is for use only by those who occupy the house.

Building Regulations do state that structures built of combustible material (i.e. a wooden shed) must be at least 2 metres from the main house.

Building Control - New Regulations For April 2002

The amended Building Regulations 2001, together with four new Approved Documents to Parts H, J, L1 and L2, were published in October 2001 by the UK Government. These new provisions came into effect on 1 April 2002, for properties then under construction at that date, there are some transitional provisions. The main effect of these amended regulations are changes to:

- Drainage and waste disposal (Part H);
- Combustion appliances and fuel storage systems (Part J);
- Conservation of fuel and power (Parts L1 & L2).

There are other changes, including to the definitions of "controlled service or fitting" and "building work". One result of this is that the replacement of boilers, hot storage vessels and other building services, and provision of complete replacement windows, will be "building work" and subject to the energy efficiency and thermal insulation requirements in the revised Part L. With limited exceptions, all "building work" now requires approval of the local authority.

PART H (DRAINAGE AND WASTE DISPOSAL) - Some of the key changes are:

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- An expressed requirement for the provision of suitable foul and rainwater drainage is now an express requirement.
- Sewers serving more than 10 properties must have a minimum diameter of 150 mm.
- There are new requirements and guidance for non-mains arrangements for foul water disposal, including a prioritisation of the available options.
- There are new requirements and guidance on more sustainable forms of rainwater drainage.
- Additional guidance is given on protection of drains and sewers from rats.
- There are new requirements and guidance about building over sewers.

PART J (COMBUSTION APPLIANCES AND FUEL STORAGE SYSTEMS) - Some of the changes are:

- The requirements now include measures to prevent injury from burns.
- There is a new requirement for hearths, fireplaces, flues and chimneys to have durable labeling with safety information.
- There is new guidance on checking by competent builders of new flues, and flues brought back into service, and there are recommendations that certificates should be provided by competent builders and installers stating that flues and combustion installations comply.
- There are new safety rules for the position of low level gas and oil flue outlets to restrict discharge close to boundaries.
- There is now guidance on installing fixed flueless gas fires, including the need to provide permanent ventilation.
- There are new requirements and guidance on the protection of oil and LPG fuel tanks from fire, and on precautions against pollution of water by oil from domestic fuel tanks.

PART L (CONSERVATION OF FUEL AND POWER) - In the new Part L, L1 deals with dwellings and L2 with other buildings. There are now separate approved documents for L1 and L2. The changes for dwellings include:

The changes for buildings other than dwellings include:

- Requirements applying to the overall system performance of heating and hot water systems.
- Systems must be inspected and commissioned by installers to check that adequate performance has been achieved. It is recommended that certificates should be provided by installers that commissioning has been successfully carried out.
- There are higher standards for the insulation performance (U values) of walls, floors, roofs, windows and doors.
- There are changes to the elemental and target U value methods for showing compliance and the introduction of a "carbon index method" to replace the energy rating method but under separate existing provisions of the regulations, energy ratings (SAP ratings - Standard Assessment Procedure) must still be calculated and notices giving the ratings must be posted up in new dwellings.
- Changes to guidance on thermal bridging and airtightness, backed by guidance on robust construction details which is to be published separately in November 2002.
- New requirement for energy efficient lighting with a new dwelling or new extension.
- New requirement for information to be provided to homeowners on how heating and hot water systems can be operated in an energy-efficient manner.

The Association of Control Manufactuers (TACMA) have a number of guides to Part L 2002 (Englands/Wales) on their website:

Full Industrial Guide A full guide to determine what is required to comply with

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The Regulations covering both new and existing build situations. This document is essential for all heating system specifiers, installers and designers, and Building Control Officers. *(Size :1.92M - Acrobat Format)*

Short Industrial Guide A leaflet explaining the essential requirements particularly for existing dwellings and aimed at installers. *(Size: 1.31M - Acrobat Format)*

TACMA Guide TACMA have produced a specific guidance on the control specifications that meet the Regulations. *(Size: 1.10M - Acrobat Format)*

The changes for buildings other than dwellings include:

- Changes to the elemental method for showing compliance and new whole building and carbon emissions calculation methods.
- There are recommendations that builders should obtain certificates of compliance as regards airtightness and insulation continuity.
- Higher standards for the insulation performance (U-values) of walls, floors, roofs windows and doors.
- Requirements addressing the summer performance of buildings i.e. solar overheating and heat gains through the fabric.
- Requirements applying to the overall system performance of heating and hot water systems.
- Requirements applying to air-conditioning and mechanical ventilation.
- Changes to the requirements on lighting.
- Building services systems must be inspected and commissioned by installers, and it is recommended that certificates should be provided by installers that commissioning has been successfully carried out.
- New requirements for information to be provided on the maintenance and operation of buildings and services.

Transitional provisions:

The amended regulations above came into effect on 1 April 2002. However the unamended regulations will continue to apply for building work which was started before 1 April 2002. The unamended regulations will also continue to apply to work started on or after 1 April 2002, if plans of the work were fully passed by a local authority before that date.

Where work involves the construction of more than one new building, such as an estate of houses, relevant work must have started on a particular building before 1 April 2002 in order for that building to be exempt from the changes in the requirements.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

PLUMBING CARE AND REPAIR

SKILL LEVEL

No special skills are required for any of the repairs described in this section.

SAFETY FIRST

Plumbing repairs are seldom dangerous unless leaking water is soaking areas where there are electrical cables or fittings. Switch off the power at the consumer unit and call a plumber.

INTRODUCTION

Undertaking simple plumbing repairs as they occur avoids the risk of more expensive work later.

It makes sense to repair leaking taps and overflows as soon as possible. They are not only wasting a valuable resource, but leaks have a tendency to get worse, causing all manner of problems associated with damp. The methods described here cover the most common fittings and appliances used in the average home. If you find your situation is different, get the advice of a plumber before you start work, and always remember to turn off the water supply before making repairs!

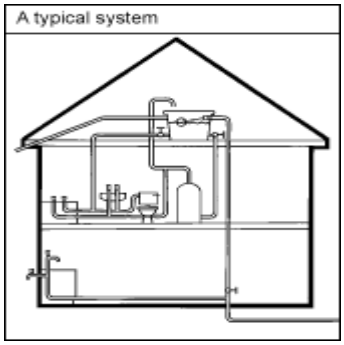
See the B&Q leaflet 'Basic Plumbing' for instructions on shutting off your water supply and draining the system.

2 - Clearing wastepipes

Water draining slowly from a sink, bath or basin is a sure sign that a serious blockage is imminent. Leave the water to drain, then pour a chemical cleaner down the waste outlet to dissolve the obstruction before it becomes a major problem. Flush out the waste system with clean water.

If a chemical cleaner fails to clear the blockage, try using a sink plunger. Ensure there is enough water in the sink to cover the rubber cup of the plunger. Block the overflow outlet at the back of the sink or basin with a wet cloth. Place the plunger over the waste outlet and pump the plunger up and down to create pressure in the pipework.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Alternatively, use a hand-operated hydraulic pump. Fill the pump with water and place it over the waste outlet. Push down on the handle to force a jet of water through the wastepipe.

If you cannot shift the obstruction with pressure, you will have to dismantle the waste system. Sinks and basins are fitted with water-sealed traps, designed to prevent drain odours entering the house. Check the trap for a blockage.

A bottle trap is designed with a large access cap. Place a bucket under the trap and unscrew the cap. Wash out the trap then refit the cap.

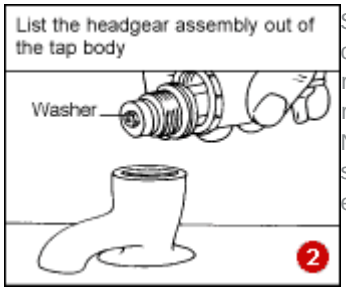
To clean a trap that forms a U-bend, you will have to remove the complete unit unless it is fitted with a cleaning eye sealed with an access cap.

Access may be provided for clearing blockages in the wastepipe beyond the trap. If not, remove the trap and pass a hooked wire into the pipe to free the blockage. Alternatively, buy a flexible drain auger.

3 - Leaking taps - Replacing washers

A tap that continues to drip requires rewashering. You will have to remove the headgear mechanism to replace it. However, when water is leaking from the tap spindle, just below the head, it is a sign that the gland packing has failed, if this is the case see 'Replacing gland packing'.

Step 1: Turn off the water supply.



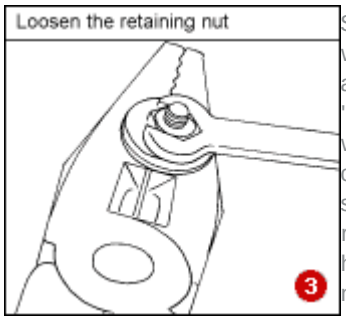
Step 2: For a traditional capstan-head pillar tap, first remove the cross head by releasing its retaining screw. Next, unscrew the bulbous shroud below the head to expose the tap mechanism.

On modern taps, the head and shroud are one-piece mouldings. Simply pull off the push-fit types or remove the fixing screw hidden beneath the coloured hot or cold

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

identification disc. Use a thin blade to prise out the disc.

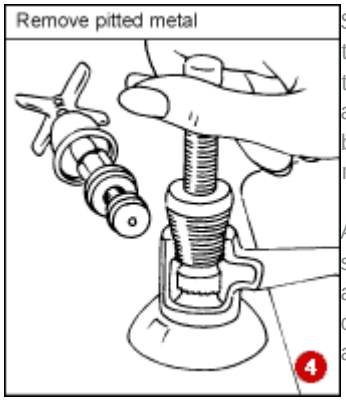
Step 3: Just above the tap body is the headgear nut. Holding the tap firmly, unscrew the nut and lift the headgear assembly out of the tap body.



Step 4: You will find the worn washer at the base of the assembly attached to the 'jumper'. With some taps, the washer fits over a stud in the centre of the jumper, and is simply prised off and replaced. Other washers are held in place with a retaining nut.

Bath-tap washers are larger than those required for sink and basin taps - replace a worn washer with a new one of the correct size.

Step 5: Before you replace the headgear assembly, check the condition of the seat inside the tap body. The washer is compressed against the seat, and if the metal is pitted, a new tap washer may not prevent the tap leaking.



Step 6: Buy a reseating tool to smooth the seat. Fit the tool in the tap body and adjust the cutter until it begins to remove the pitted metal as you turn the handle.

Alternatively, fit a new plastic seat over the old one. These are supplied as a kit, complete with new jumper and washer.

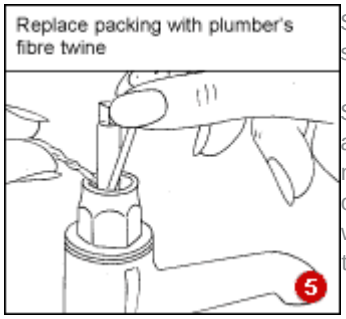
The latest type of taps use ceramic discs in place of traditional rubber washers. These hard-wearing units last longer, but in the event of a leak, it is necessary to replace the whole disc cartridge.

4 - Leaking taps - Replacing gland packing

When water is leaking from the tap spindle, just below the head, it is a sign that the gland packing has failed.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

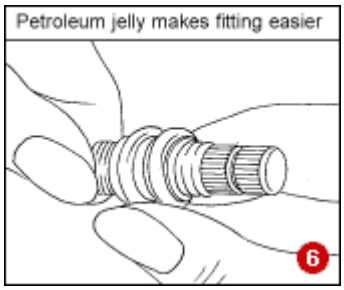
- On older taps, the rotating spindle is sealed with a waterproof packing that is compressed by a gland nut fitted to the top of the headgear assembly.
- Modern taps use rubber O-rings to form the seal.



Step 1: Turn off the water supply.

Step 2: Remove the tap head and try tightening the gland nut. Take care not to overtighten the nut as this will prevent the spindle turning.

Step 3: If the spindle continues to leak, unscrew the gland nut and pick out the old packing with a penknife. Replace it with plumber's fibre twine wound clockwise around the spindle. Grease the twine first with petroleum jelly. Pack it down and retighten the gland nut.



For taps fitted with O-ring seals, remove the headgear assembly and pull the old seals from their grooves. Replace them with new rings of appropriate size. Smear new O-rings with petroleum jelly to ensure they slide easily into place.

5 - Stopcocks & gate valves

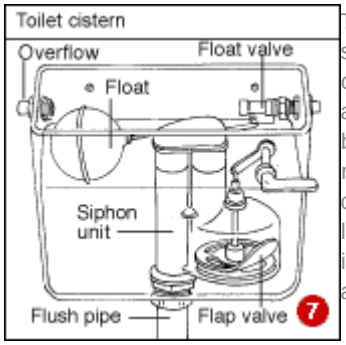
Stopcocks are valves that control the flow of incoming water through the rising main. Due to the build-up of deposits, the spindle can become hard to turn. Since a stopcock is used to shut off the water during an emergency, it pays to open and close the valve occasionally to keep it moving freely.

Gate valves control the flow of water on the low-pressure side of the storage cistern in the loft. If gate valves or stopcocks are stiff to turn, apply penetrating oil to their spindles and turn them on and off until they begin to operate freely.

If you need to replace an old stopcock, make sure you fit it with the arrow moulded on the side of the body pointing in the direction of water flow.

6 - Dripping overflow pipes

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

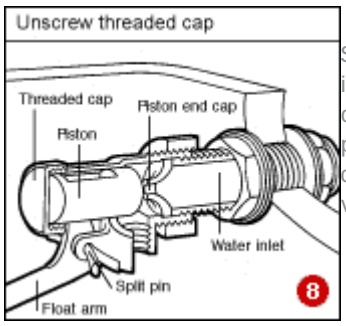


The level of water in a storage cistern, such as the one installed in the loft or above a toilet, is controlled by a float valve. If, for some reason, the valve does not close automatically, the water level continues to rise until it is diverted to the outside via an overflow pipe.

Older-pattern float valves are made from brass and are fitted with a small rubber washer to seal the water inlet. Modern fittings are made from plastic and incorporate a large rubber diaphragm.

- In a hard-water area a build-up of limescale on the float arm and valve can become a problem. Chip off the limescale crust occasionally to keep the mechanism moving freely.
- If a float is punctured it will sink - as an emergency measure, tie a plastic bag around the float with an elastic band until you can replace it.
- Water will continue to seep into the cistern once the valve washer wears. To replace the valve washer follow the instructions below.

Replacing the valve washer



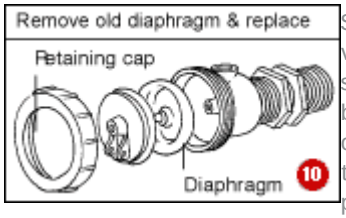
Step 1: To replace a washer in a metal bourne valve, turn off the water supply, then pull out the split pin that connects the float arm to the valve.

Step 2: Remove the arm and unscrew the threaded cap on the end of the valve body and slide out the piston.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

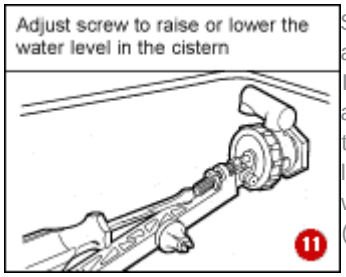
Step 3: Unscrew the piston end cap that retains the rubber washer - use pliers to grip the cap while turning the piston with a screwdriver held in the side slot.

Step 4: Clean the parts with wire wool, then put a new washer in the end cap and refit the piston.



Step 5: Reassemble the valve, taking care to align the slot in the piston with the bottom of the valve body in order to receive the end of the float arm. Fit a new split pin.

Step 6: Replace the diaphragm in a plastic valve by unscrewing the large retaining cap. Pick out the old diaphragm and insert a new one.



Step 7: Reassemble the valve and turn the water back on. If necessary, reset the float arm with the regulator screw to raise or lower the water level in the cistern - the water should be about 25mm (1in) below the overflow.

7 - Toilets - Unblocking

If the water will not drain from the pan, hire a toilet plunger to free the obstruction.

Use the tool's rubber cone to seal the U-bend in the base of the pan, and pump the handle to create suction. Lift out the plunger and, hopefully, the water will run out.

If not, buy a WC auger to dislodge the obstruction. Feed the flexible shaft into the pan until it meets with resistance, then crank the tool's handle to break up the blockage.

8 - Toilets - Flush repair

If you need to crank the flush lever more than once, the plastic flap-valve inside the siphon unit should be replaced.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Step 1: Shut off the water supply and flush the toilet to empty the cistern.

Step 2: Disconnect the metal link that connects the lever to the flushing mechanism.

Step 3: Unscrew the connector that holds the flush pipe to the base of the cistern, and move the pipe to one side.

Step 4: Just above the connector is a nut that clamps the siphon to the cistern. Unscrew this retaining nut, and lift the siphon unit out of the cistern.

Step 5: You will find the flap valve resting on a perforated plate inside the siphon unit. Replace the flap valve and reconnect the siphon and the flush pipe. Reattach the flush lever.

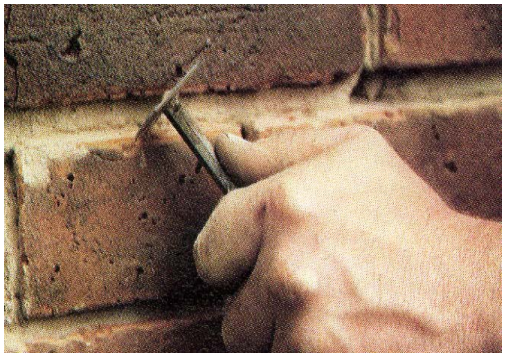
A three-part siphon unit can be serviced without removing the flush pipe - dismantle this type of unit from inside the cistern.

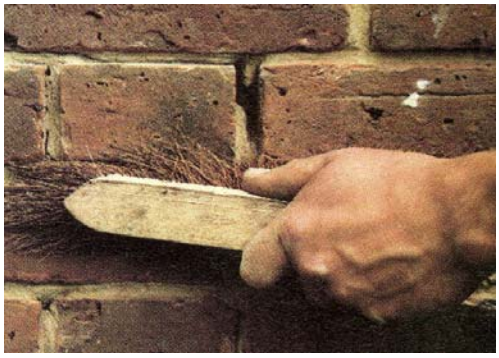
Step 6: The metal link that connects the flushing lever to the flushing mechanism may break due to wear. Tie the lever to the mechanism with wire until you can buy a replacement.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

POINTING BRICKWORK

Firstly cut out all loose and damaged mortar. You may find that some of the faces of the bricks have been damaged as a result of water getting into the joints. This can be remedied in our replacing bricks project and the science of it understood in our freeze-thaw project. Cutting out is best done with a plugging chisel or small bolster. Very loose stuff can simply be raked out with a screwdriver or similar.





Rake out old joints to 10mm minimum

Wire brush loose dust etc.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

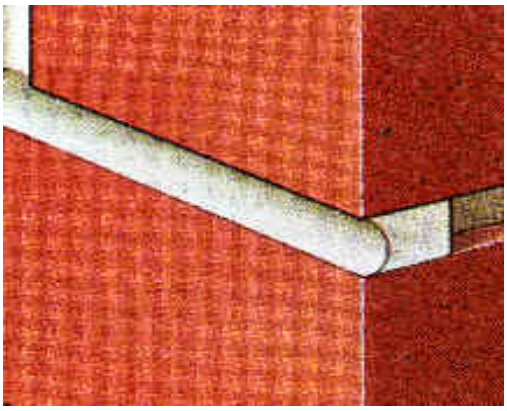
Mixing sand and cement (see project on this) for easiest way to repoint

Place on hawk ready

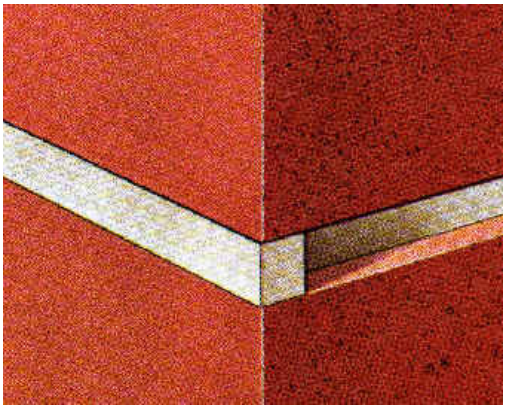
Unless you are doing all of the walls anew, it will be necessary to match the mortar you are using to the existing colour. See our project on matching sand and cement mortar.

Fill joints flush with surface, then choose finish of pointing

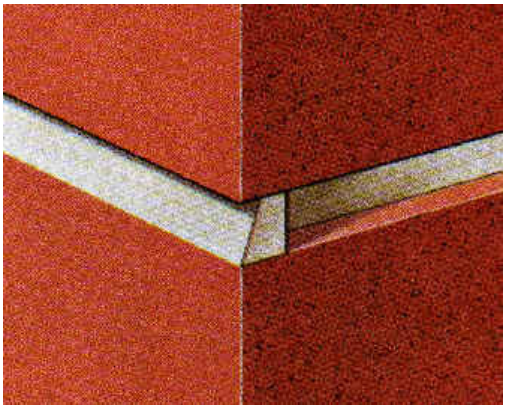
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



"Bucket handle pointing" can be done with metal pointing tool or with a short length of chopped off hosepipe run through the joint.

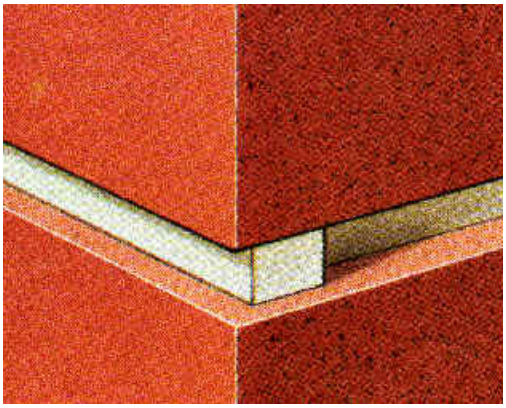


"Flush pointing" Done by cutting off surplus and rubbing over with back of trowel.



"Weather struck pointing" Done by using pointing trowel at and angle.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



"Recessed pointing" Done by raking our mortar with tool above

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Producing drawings for Planning Permission

With modern CAD packages available for home computers, it is not very difficult to produce your own drawings for a Planning Application providing care is taken to produce the required scale drawings for a simple extension.

To check whether planning permission is required have a look at lanning Permission and Building Regulations, if in doubt speak to the local Planning Authority. A Planning Application costs money, so it is worth checking that there is at least a chance of gaining permission. Another way to increase your chances of success is to speak to your neighbours to gauge an opinion as to whether or not they are likely to object to your proposal. It is always far better to take your neighbour's comments into account at an early stage rather than see them emerge at a later date.

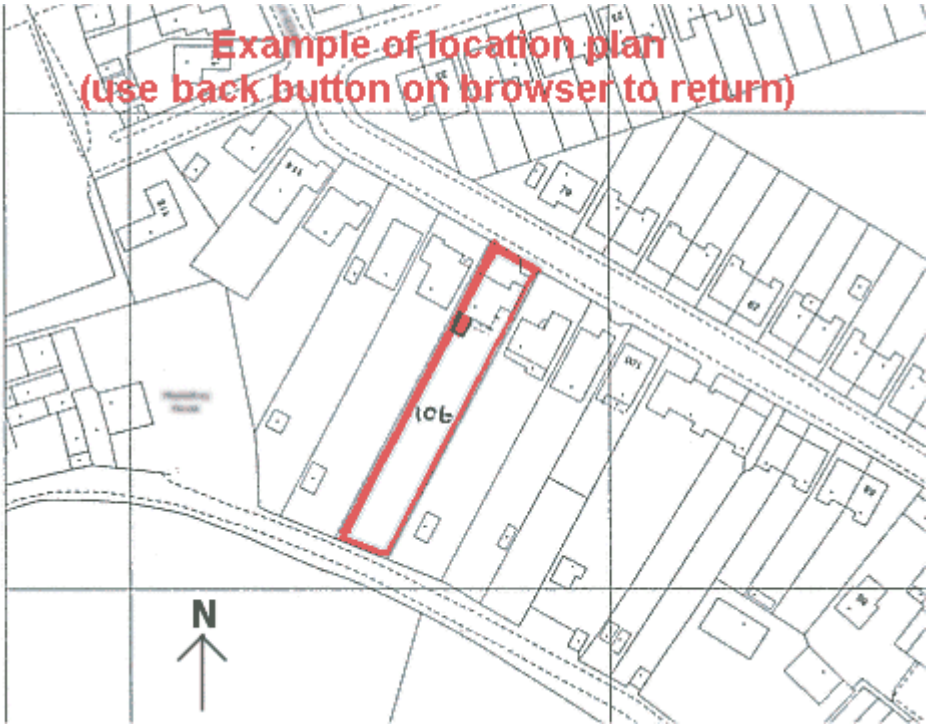
In addition to the plans, a form containing a list of questions needs to be completed, as does a Certificate of Ownership.

The Plans must be to a recognised metric scale and show the proposed development in enough detail to convey the details of the proposed extension. One of the hardest things to remember is to take no detail for granted, the people making the assessment of the plans will not know the property.

A total of five copies of the plans, questionnaire and ownership certificate will be required, Three types of plan drawings are required:

1. The location plan
2. The site plan
3. The floor plans and elevation

Location plan. see example



This should be at a scale not less than 1:2500 and of sufficient size and detail to identify the application site within the general locality. The site of the development must be edged or

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

shaded in red and any other adjoining land owned or controlled by you edged or shaded blue. A north point must be shown on the plan. These plans are readily available from the Ordnance Survey via local SITE PLAN agents, just give them the post code and they will produce the required plan - all you will need to do is shade or edge the site.

Site plan. (the same as the location plan but on a larger scale)

This should be at a scale of not less than 1:500 and show the site and the immediate surrounding properties showing the existing building and its grounds together with any roads. The proposed extension should be shown and specifically identified by the use of shading or colour. Any buildings on adjoining land should also be shown. Where possible the postal addresses of houses on adjoining land are also shown. Any trees on the site should be shown, including any which will need to be removed to allow for the extension.

Where the application requires a new access to a road or across any boundary, then their position must be shown on the block plan.

Again SITE PLAN can be used to help produce the required plans.

Floor plan and elevations

These plans should be at a scale of not less than 1:100. They should indicate clearly what is proposed and how it relates to the existing dwelling.

The elevation drawings should show:

- What each side of the newly altered building would look like (known as the elevations)
- Indicate the size and type of windows, doors etc.
- The external building materials to be used.
- The extension must be high lighted by colour or shading.

The floor plans should:

- Identify the existing uses of the rooms in the building, e.g. lounge, kitchen, bedroom etc. and also the intended use of the new room(s).
- Dimensions (external) are only required for the extension.
- Where a single storey extension is to be added to a two-storey building, only the floor with the extension need be detailed.
- The extension must be high lighted by colour or shading.

The materials to be used (roof, elevation, windows and doors) must be described by type and colour, the easiest way is just by 'Roof to be tiles to match existing' or 'Windows to be painted soft wood'.

In certain circumstances, such as an extension on the side of a building, it may be necessary to produce a 'street scene' (i.e. a drawing showing the original property, the extension and the adjoining buildings as viewed from the road) so that the impact of the new extension on the street can be considered.

For some simple extension, a single drawing showing both the existing and the new works may be acceptable, but it is probable easier to produce separate drawings so there is no confusion.

Submitting the application.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The completed forms, plans and fee must be submitted to the appropriate Directorate of Environment Services.

In some cases, it may be helpful to your application to send a supporting letter explaining why the extension is required. But bear in mind that everything you send in support of your application will be public documents.

Always keep a hard copy of your application which you can refer to should there be any queries.

Then sit back and wait !

The application should be acknowledged and you should be given a reference number.

If your application is incomplete or the Planning Authority needs anything clarifying, you will be asked to supply further information.

The Planning Authority will advertise the Planning Application in the local Press and you will be sent a notice to display to the street on the property. Any members of the Public (neighbour or not) has the right to inspect the plans at the Local Authority and make any comment.

Once the application has been accepted and registered, the Local Planning Authority has eight weeks in which to make a decision (this can be extended with your agreement - it is better to extend the time if you are asked to make changes, otherwise you may get a rejection).

The Powers that be make the decision.

Having gathered any comments and assessed the proposal against the relevant local planning policies, the planning officers will formulate a recommendation. The final decision rests with the Planning Committee of the local Council, however their powers are often delegated to the local Planning Authority for simple applications. If any objections to your proposal are received, your application will be considered by the Planning Committee.

Issuing the decision notice.

Following the decision, a formal notification will be issued to you which will indicate whether planning permission has been granted or refused.

If planning permission has been granted, there may be certain conditions that have to be complied with before, during or after the development.

If a planning permission has been refused, you have a right of appeal to the Secretary of State and information is sent with the decision notice to guide you should you wish to take up that option. You can also appeal against any condition which you consider unreasonable although, if you do appeal, an Inspector will look at the principle of the whole development and may decide that it should be refused in its entirety.

Where approval is granted, a copy of the approved plan(s) will be sent to you with the decision notice.

Is Building Regulation approval required ?

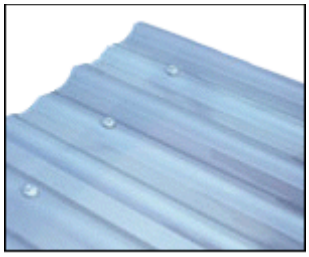
Once you have (hopefully) received Planning Permission, you need to consider the requirement for approval under the Building Regulations. If you do some additional plans will

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

be required, these plans need to be in far more detail than those required for basic Planning Permission approval. They define the actual method of construction and must demonstrate that the property will be built in a suitable manner to meet structural integrity, thermal insulation, and ventilation etc.

You may wish to use the services of a professional architect to undertake this level of detail.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



PVC and polycarbonate Roofing

INSTALLATION INSTRUCTIONS - TYPES - SIZES - COSTS

PVC / Polycarbonate sheet roofing

Pvc and polycarbonate sheet roofing come in a variety of profiles, sizes, and colours. Quality and prices vary immensely.

The most common profile is corrugated.

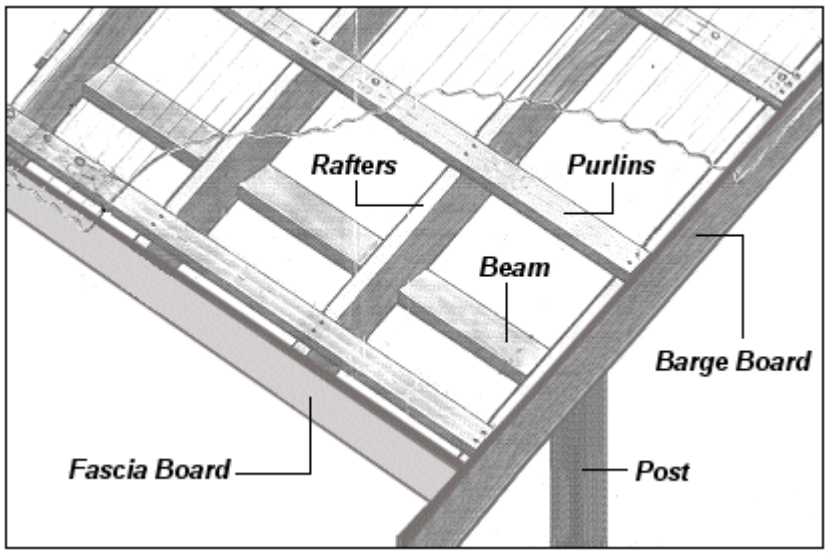
The most common lengths are 1800mm, 2400mm, 3000mm and 3600mm and less common, 4200mm, 4800mm, 5400mm and 6000mm.

The cover width ranges from 610mm to 760mm and the colours include clear, opal, white, solar grey, blue, and green.

Quality varies enormously from cheaper pvc sheets up to lifetime guaranteed polycarbonate sheets and the price varies accordingly. Guarantees range from zero to lifetime.

Prices range from around $10 per sq metre to $36 per sq metre (not including screws or flashings).

Sometimes the cheapest is not the most cost effective. Pamphlets relevant to the type of sheeting required are usually available from most stockists, it is advisable to read them.



Roof pitch

Most type of PVC or polycarbonate manufacturers recommend a 10 degree pitch (approx 1 in 5.7 fall).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A lesser pitch could require additional weatherproofing such as extra flashings or appropriate sealants.

Cutting
Garden scissors or a fine tooth saw can be used to cut most sheets. The higher the quality, the easier the cutting. Sometimes a carborundum blade on a disk grinder will do the trick but only one sheet at a time or it could cause fusion and weld the sheets together.

Drilling
Pre-drill the holes in the sheets before fixing. The holes should be 8mm to 10mm and at least 2mm larger than the shaft of the screws to allow for expansion and contraction. Ensure the holes are in the high part of the corrugation. Sometimes it might be easiest to lay the sheets upsidedown on the ground and pre-drill. Another tip is to use a stick with a hole in it as a guide for the drill.

Fixing
Appropriate screws are readily available from any suppliers that stock the PVC or polycarbonate roof sheets. If the choice is available, hexagonal heads are the easiest to use. Most sheets should be fixed at every fourth corrugation and every second corrugation at gutters, ridging and overlaps.

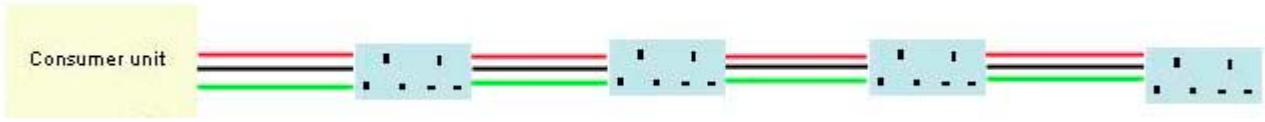
Accessories
Accessories such as ridge flashings, apron flashings and foam eave fillers are also readily available from any suppliers that stock the PVC or polycarbonate roof sheets.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

RADIAL CIRCUIT

Make sure you have isolated any circuit you are working on

A radial circuit is a mains power circuit found in some homes to feed sockets and lighting points. It is simply a length of appropriately rated cable feeding one power point then going on to the next. The circuit terminates with the last point on it. It does not return to the **consumer unit** or fuse box as does the more popular circuit, the **ring main**. To see the wiring at the back of the socket please go to the ring main project.



The descriptions below apply only to a circuit for power sockets. **Lighting circuits** are dealt with in a separate project.

There is no limit to the number of sockets used on a radial circuit and, just like a ring main, **spurs**, or extra sockets, can be added. The number of spurs must not exceed the number of existing sockets. The images below are all rated for use with a radial circuit and can be bought by clicking on them.

Two types of radial circuit are permitted for socket outlets.

20 Amp fuse or miniature circuit breaker protection with 2.5 mm^2 cable can feed a floor area of not more than 50 m^2. The maximum length of cable is 33m

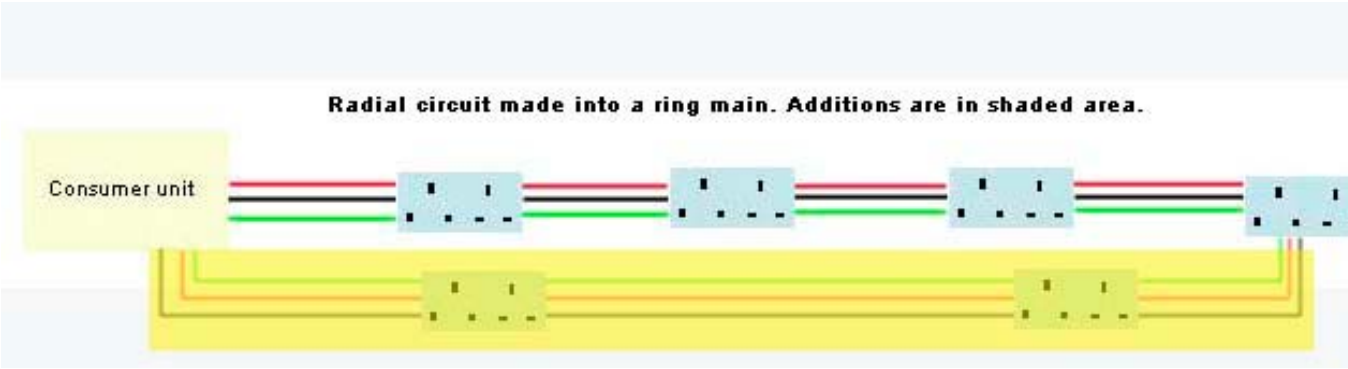
30 Amp cartridge fuse to B888 or miniature circuit breaker of 20amp with a 4 mm^2 cable can supply a floor area no greater than 75m^2. The maximum length of cable to be used is cable is 38m when used with a cartridge **fuse** and only 33m when used with an **MCB**

Radial circuits are generally used in larger buildings where, to return the cable back to the consumer unit can effectively double the cost of the installation.

As with a ring main, units and appliances which draw large amounts of current such as showers and electric cookers nut be installed on their own circuit.

Additional wiring can be added to a radial circuit to turn it into a ring main.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



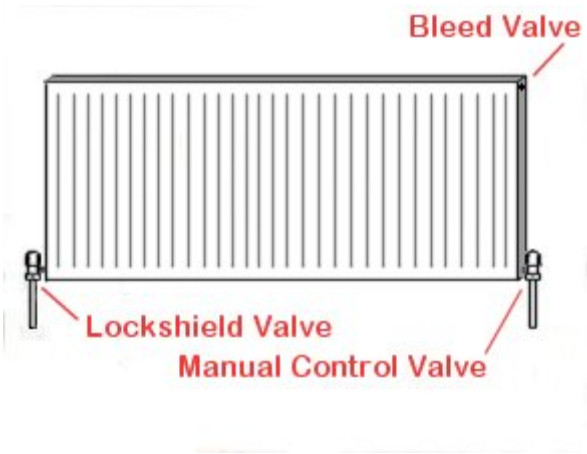
Please also check the rules very carefully for ring mains and radial circuits. You are limited in the length of cable you are allowed to use in both circuits and long spurs could make you exceed the limit. If this is the case you are asking the circuit to use much more energy than the circuit is designed for. More energy = more heat and cables can catch fire. Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our guide to how to remove a central heating radiator quickly and easily, this tutorial is for when you need to remove a radiator temporarily, for instance, to paint or decorate. If you are looking to replace a radiator then please see the appropriate section on the previous menu.

To complete this task you will need the following items:

- 2 Adjustable Spanners
- 1 Radiator key (Bleed Key)
- Old sheets/towels or equivalent for water spillage
- A bowl (small enough to fit under the radiator)
- A Bucket



First let's take a look at the radiator.
There are three points of interest:

- **The Bleed Valve**
- **The Lockshield Valve**
- **The Manual Control Valve**.

The **Bleed Valve** is what you use to release any trapped air within the radiator.

The **Manual Control Valve** is the valve you use to control the temperature of the radiator.

The **Lockshield Valve** has a removable plastic cover over the top.

Removing a Radiator

1. First of all turn (using your hand) the **Manual Control Valve** clockwise until tight to close the valve.

2. Next remove the plastic cap off the **Lockshield Valve** and turn the spindle clockwise (with an adjustable spanner), make a note of how many turns it takes to close so you can open it later to the same setting.

3. Now pull the floor covering (if any) away from the radiator and place old sheets/towels on the floor around the **Manual Control Valve** and place a small bowl directly underneath the **Manual Control Valve** to catch the water.

4. Next using the Radiator key (bleed key) loosen off the **Bleed Valve** this will

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

allow the water to exit.

5. Now take both adjustable spanners and place one on the **Manual Control Valve** to stop it moving, use the other spanner to loosen the cap nut that holds the **Manual Control Valve** onto the radiator. As the nut is loosened water will escape so be ready with your bowl, when the bowl is full tighten the cap nut again to stop the water flow, empty your bowl and then loosen the cap nut again, repeat until the water flow has stopped.

6. Now undo the other cap nut that holds the **Lockshield Valve** onto the radiator, use both spanners as before.

7. Now carefully lift the radiator off its supports and empty the remaining water into a large bucket.

8. If you are going to paint/decorate then it is advisable to cover the exposed pipes, with for instance, a plastic carrier bag.

Putting the Radiator back

1. Carefully place the radiator back onto its supporting brackets, making sure the valves line up with the radiator.

2. Tighten both cap nuts to reconnect the valves to the radiator.

3. Next using the Radiator key (bleed key) close the **Bleed valve** fully.

4. Using an adjustable spanner turn the **Lockshield Valve** spindle using the same amount of turns as before only anti-clockwise.

5. Now turn the **Manual Control Valve** anti-clockwise to open the valve.

6. As the radiator fills up use the radiator key (bleed key) to release any trapped air by opening the **Bleed Valve**.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Removing or plastering over artex

Artex is a water-based covering, usually used to decorate ceilings, and generally brought to a textured finish with the use of a brush or roller.

Some older artex may contain asbestos and it is extremely unwise to sand down or scrape without seeking the advice of an asbestos specialist. Contact your local council for help with this.

Artex can be “steamed” off using a wallpaper steamer. This is again very messy and also very slow. It cannot be done at speed or with the steam plate left in one area too long…if it is, there is a possibility of damaging the ceiling or wall and the artex just returns to liquid form.

This will enable you to soak and strip without damaging either yourself or the surface you are working on.

The easiest way to remove artex is with this amazing product. Simply paint over the artex, on a horizontal or vertical surface, and scrape off when softened.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Artex can also be plastered over. Firstly make absolutely sure that there are no flaking or loose sections of the artex, or indeed ceiling/wall. Then remove all obviously “high spots” of artex, where the stipples hang down. The wall or ceiling can then be painted with a coat of PVA adhesive, which can be bought in gallon containers from the builder’s merchants or larger DIY stores

Dilute the PVA at 1 to 1 with water and stir well. Paint this on the ceiling/wall with a large emulsion brush. This can be left to dry, which will only take about an hour. Make sure you have covered **the entire** surface. Untouched areas will produce plastered areas that will be hard almost as soon as the plaster touches them!

We suggest two coats of this pva solution will give an excellent seal to the ceiling. Artex is very pourus indeed and “skim” plaster goes hard very quickly. The pva will not only help the adhesion of the plaster, but it will dramatically slow down the rate of moisture absorption, giving you more time to “work” the surface.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

It is a good idea to wear an old pair of rubber gloves when dealing with plaster. It is not good for your skin! Place dust sheets everywhere and be careful where you stand. If wet plaster gets on your shoes, before you know it the house is covered. If you are attempting a ceiling try and get hold of a couple of milk crates, they are just the right height, and very stable when upturned.

All of the tools and materials on display here can be found at Screwfix.com For those you cannot see, use their search box on site.

Skim plaster is bought in bags of 25kg (Smaller bags can be bought for patching) and the mixing instructions are on the bag. Mix to a creamy consistency using an electric drill on slow speed and a “paddle” attachment that can be bought at most diy stores. Apply to the ceiling/wall using a hand held board (hawk) and a plasterers trowel. No more that two trowels full should be placed on the hawk, then cut into a small section of this with the trowel held at 90 degrees to the hawk. Tilt the hawk towards you while pushing and “scooping” the trowel and plaster away. Once you have the plaster on the trowel, spread it evenly on the surface. Do not attempt to smooth it at this stage.

Before attempting the above, we suggest you first mix up an eggcup full of skim. Place this on an off cut of some kind that you have prepared with some pva. Spread it out and mark the time it takes to go firm but not hard. This is the point at which skim can be made smooth and the trowel marks will disappear. Once skim is hard the only way of smoothing it is by sanding. As with all of our projects, the money spent on practice is a tiny amount compared to the amount it takes to put a job right. “Stop end” beads can be purchased from stores. These are galvanised or stainless beads, which can be fixed to the surface and allow you to divide your plastering area into smaller, more manageable sections. Their flat top gives you an edge to work to and finishes flush with the surface of the plaster. When decorated they are not visible.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

All of the tools and materials on display here can be found at Screwfix.com For those you cannot see, use their search box on site.

All of the tools and materials on display here can be found at Screwfix.com For those you cannot see, use their search box on site.

Start smoothing where you started skimming, you will have to repeat this procedure over the surface two or three times to get it absolutely smooth. When the plaster gets quite hard, you can spray or flick a brush with some water on the surface, this will give you an extra couple of minutes to work the surface.

Use a half-inch, wet (water), soft paintbrush to define corners and the abutment of the plastered surface to any other. Wipe any mess on non-pourus surfaces with a wet cloth, take up the lumps etc and it will dry to a fine dust. This can be wiped again and will go. Leave any mess on pourus surfaces until the lumps are dry and then pick them off.

The most important things to remember are:

1: Do not attempt to put too much plaster on either hawk or trowel.

2: Spread the plaster to a ceiling not directly above your face.

3: Get a covering on that is uniform in thickness (no more than 5mm) so the whole area goes firm at the same time.

4: Do not attempt too large an area at once or mix too great an amount.

5: Wash your tools & buckets down regularly and especially between mixes.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

6: It is impossible to get plaster smooth on its first application to the ceiling. Do not attempt to do this. Get an area covered uniformly and wait until it starts to get firm. Then it can be smoothed.

7: Plastering is very hard work indeed. Mostly because of the speed it has to be carried out at & also because it involves a lot of body movement. Please make sure you have divided the room onto manageable areas. You really do only want to do this once.

For an absolute novice we would suggest that a ceiling area of 2m x 2m is the maximum that should be attempted in one go and a wall area of 2.4m x 2.5m.

Make life easy with this mixing bucket and paddle which fits in all electric drills

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

RENOVATING WOOD

SKILL LEVEL

Renovating wood is not difficult, but it does require patience and application. Don't be tempted to work on fine or antique furniture - leave that to the experts!

SAFETY FIRST

Always wear a face mask when working with an electric sander. Wear protective gloves when using paint stripper or solvents. Work in a well-ventilated atmosphere when stripping or finishing wood. Keep your fingers away from the cutting edges of tools. Keep stains, varnishes and solvents away from naked flames.

INTRODUCTION

Warmth, colour, and subtle or dramatic grain patterns are amongst the stunning effects this natural material can bring into your home.

Renovating wood can take many forms, from stripping and varnishing floors and internal fitted woodwork to stripping and staining chairs, tables and fittings, polishing surfaces and colouring.

Wood sometimes requires a facelift but be selective and choose your projects carefully. There is little point in stripping or altering antiques, because it will almost certainly reduce their value. Some pieces are often the better for their aged appearance.

2 - Planning your work

Decide on a method to remove the old finish on the timber (if there is one). For instance, by blow torch, paint stripper, planing or sandpaper.

On large areas, such as floors, you may need to obtain an industrial sander. Remember, you will also have the room out of action for some time.

Structural damage through rot, wear or accident should be repaired before any overall renovation can begin. These repairs can often be something simple such as letting in a small section of floorboard, patching a window frame or perhaps filling the hole where a lock has been removed from a door. You may also need to apply a fungicide in areas of poor ventilation or where there is evidence of fungal activity.

To avoid handling the wet areas when staining or varnishing a piece of furniture, decide upon a sequence of work before starting. With panelling, work out where you can finish with your brush strokes so that there is no obvious line when you begin again.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Before proceeding, always test dyes, stains and varnishes on a small, inconspicuous area of the wood to be treated, in order to assess their suitability.

Have your materials to hand, and if working with movable furniture, have a clear and clean area set aside to work in.

If you are working a large area such as a floor, set yourself a reasonable target.

When stripping vertical panelling, try to work from the bottom up when using a blowtorch because the rising heat will pre-soften the paint or varnish above. Work from the top down when re-applying any wet finish.

3 - Initial preparation

Remove any projecting nails, screws or any other metallic objects which may damage tools.

Door and drawer knobs should also be removed. These can be cleaned, renovated or renewed separately.

Before sanding wooden floors, punch the heads of the nails below the surface to avoid any possible damage to the sander.

When using paint stripper on a piece of furniture on the bench, cover the top of the bench with a cloth or newspaper for protection, and possibly the surrounding floor area also.

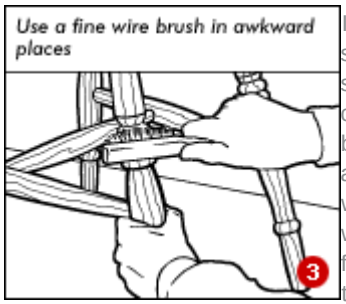
When using a blow torch, have at least one spare canister ready to hand for replacement.

4 - Stripping wood

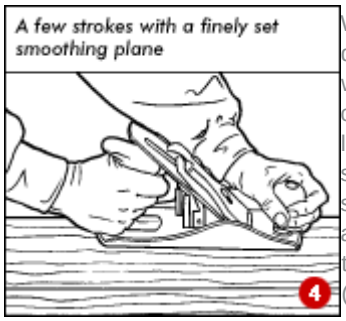
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

This is the first step in wood renovation. Before you start the stripping process ensure you wear protective gloves, eye protection, a face mask and follow all safety instructions on the stripping products you intend to use.

Regardless of whether you use a blow torch or paint stripper, you will need a shavehook or scraper to remove the old finish (2).

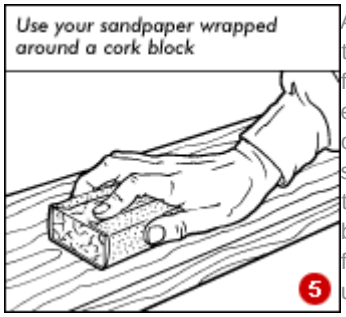


It may be necessary to use several applications of stripper to get into small crevices, and this is often best achieved by rubbing the area with paint stripper on wire wool by hand. A small wire brush (like those used for suede shoes) or a toothbrush can also be useful (3). It is not advisable to use a blow torch on furniture or areas with deep profiles and crevices for fear of scorching the wood.

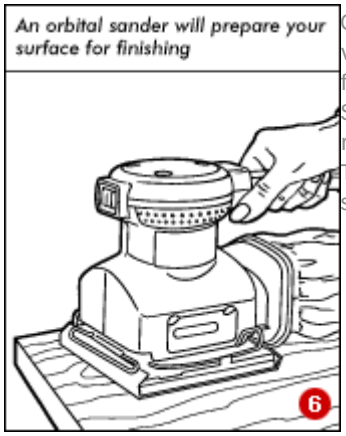


Wood that has been discoloured by age, weathering or fingermarks can often be brought back to life by taking off a few light shavings with a finely set smoothing plane. You must always work with the grain of the wood to avoid tearing out (4).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



After you have stripped the timber, it must be prepared for finishing by sanding, either by hand or with an orbital sander. When hand sanding, it's useful to wrap the sandpaper around a cork block. This helps to create a flat surface and protects the user's fingers (5).



Orbital sanders come in various sizes and are used for finishing larger areas (6). Some are also designed to reach into very small spaces. These are called detail sanders.

One good way of getting a smooth surface is to rub along the grain with wire wool. Be sure to vacuum the surface of the wood afterwards, or wipe it with a dry rag, to remove any tiny wire particles which may be picked up by a wet paint brush and spoil the finish.

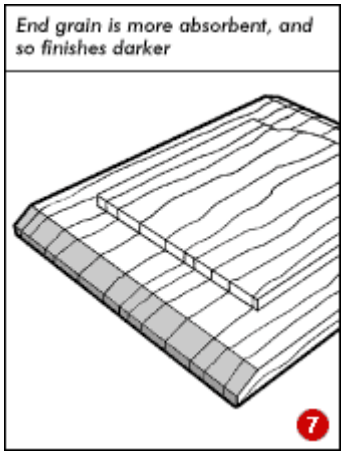
Most stripped surfaces need to be neutralised with water or white spirit. Be sure to do this, and remember to let the surfaces dry thoroughly before attempting to use sandpaper on them.

5 - Before applying finishes

All finishes, even clear ones such as polyurethane varnish or wax polish, will darken the appearance of the wood to some extent. Bear this in mind, especially when trying to match wood tones. Bleach will lighten wood.

All woods, with the exception of pine, tend to get lighter when exposed to daylight. Pine will get progressively darker even if it has been treated with varnish or polish.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



The 'end grain' of wood will always absorb more stain, varnish or polish than the other surfaces, so it will show up darker (7). It is important that the end grain is sanded well before applying stain or varnish. Use a sanding sealer or give it only one light application, even if the rest of the piece takes several coats. After the first coat is dry on the end grain, you can wipe wax polish along it to prevent it from absorbing any more surface finish.

The first application of any stain, sealer, or varnish may raise the grain of the wood and give it a slightly rough feel. When the first application is perfectly dry, give all surfaces a light rub over with fine sandpaper following the grain, then re-apply the finish.

6 - Wood fillers

Small nail holes or gaps in joints can be filled with one of the many available wood fillers. These often come in colours to suit various woods, and most will accept stains and dyes (8).

Wood fillers can be used to fill fairly deep holes by building up layers successively after the previous one has dried. However, they should not be used for large areas. These need additional wood 'let in' to the damaged area, after the rotted or damaged area has been cut away, leaving only good wood (9). Total replacement may be necessary if damage is very severe.

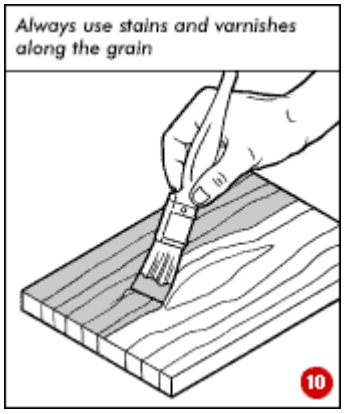
7 - Staining

This must be done before any varnishing or waxing takes place.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If you wish to colour your wood, there are many stains and dyes you can use. Most of these will allow the beauty of the grain to show through the finish, and you can adjust the depth of colour by adding additional coats. Remember, you cannot lighten the effect with subsequent applications, only darken it, so experiment first! Remember also that when you apply the varnish or wax afterwards this will darken the finish still further.

It is essential when applying stains and varnishes to brush in the direction of the grain (10). You should also keep a 'wet edge' and never let a part of the stain dry before coming back to it. For this reason, always work out an area you can treat in the drying time of the stain, or have an edge where you can finish easily, such as a floorboard.



8 - Protective finishes

There are dozens of products for the protection and enhancement of wood, and one of the most popular clear varnishes for indoor use is polyurethane. This will bring colours to life and enhance the grain formation, giving it a vibrant glow. Polyurethane is available in gloss, satin or matt finishes. It is not suitable for outdoor use. In that case, a yacht varnish or similar preparation is preferable. It may be necessary to apply several coats for maximum effect, and each coat should be rubbed down with fine sandpaper when completely dry and before the next coat is applied. Remember too, that the finish will darken slightly each time, even though this is classed as a clear varnish.

Some timbers used outdoors, such as cedar or teak, have special preparations or oils manufactured for their treatment, and these are applied by brush after the timbers have been sanded down and prepared.

Clear grain sealer can be used for indoor projects, followed by several applications of wax polish. This will give a lovely 'body' to the finish which will improve over the years with the application of more wax with each polishing. Remember that you must sand your wood to a fine finish for the best

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

results.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

REPAIRING A DRIPPING TAP (washer type)

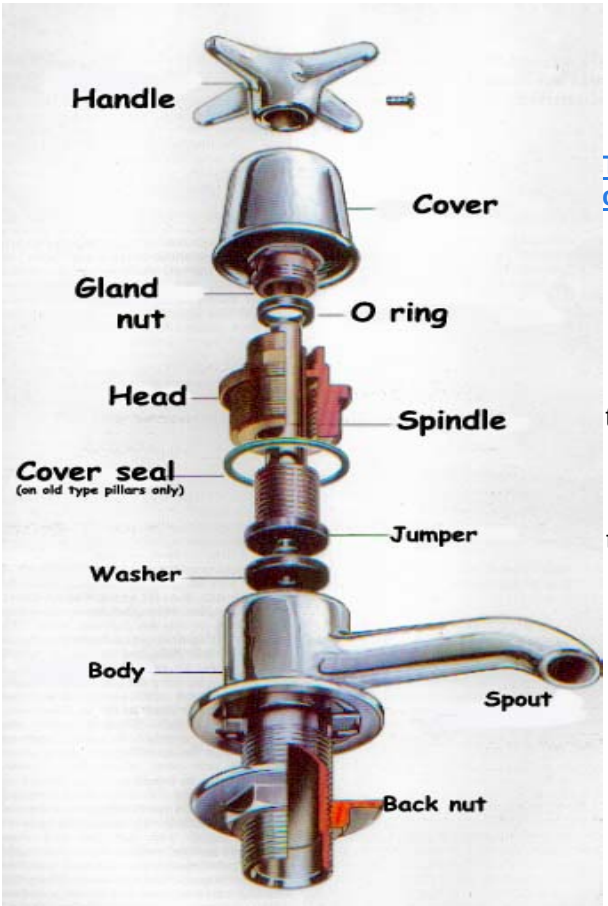
INCLUDING:

- Pillar tap diagram:
- Tap indicator covers:
- Tap valve:
- Tap washer:
- Tap valve seat:
- Valve seat grinder
- Leaks at the top of the tap:

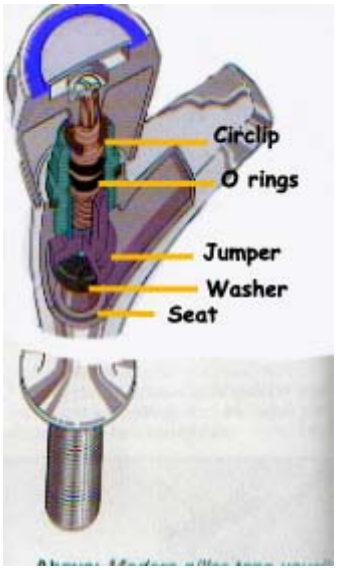
One of the most common problems encountered in the home and still one of the most misleading..."Change the tap washer" we are told...

Here is a secret ! 99% of the time a dripping tap has nothing to do with the washer which, because is it rubber, is as good as the day it was installed. The problem is normally the valve seat which the washer sits on when the tap is closed. The pressure of the water tries to force it under the washer and little by little it erodes the brass from which the seat is cast. Tiny little canals are formed in the seat which allows water to pass under the washer and out through the tap. This is very often caused by hard water and can quite often be eliminated in the future by visiting www.eddy.gb.com . We have detailed below the full procedure for changing a washer and re-grinding the seat. First, turn off the water and, if it an upstairs tap, open one of the taps downstairs to drain the pipes: The principle of "tap operation" is the same with most taps and the diagram below can be referred to for the names of various parts.

Pillar tap diagram:



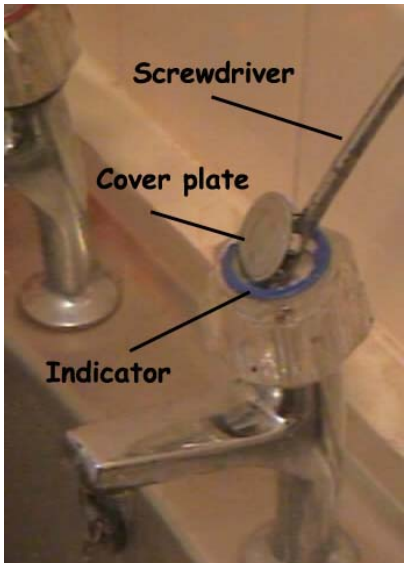
Tap indicator covers:



Most modern taps have the hot (red) and cold (blue) indicators on the top. These usually hide the screw which holds the handle on. The handle also acts as a cover for the valve. Before you start to dismantle the tap, place the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

plug in the hole. This will stop you losing anything down the waste.



Removing the cover and indicator will show the screw which can be undone.

The handle should then lift off.

Tap valve:

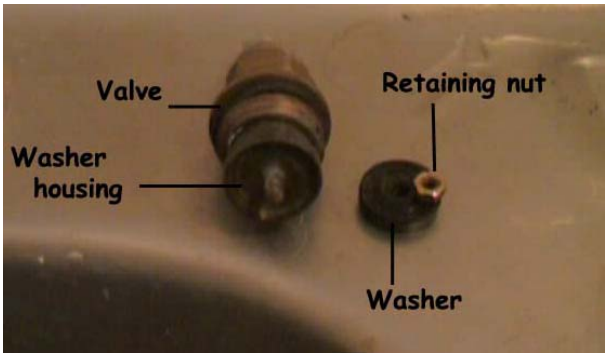
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

The next step is to release the valve, but first make sure the tap is wedged firmly in position (if it moves while undoing a tight valve nut, it may loosen the water connection underneath) and place a cloth over the tap to avoid scratching the metal.

Undo the valve completely and remove.

Tap washer:

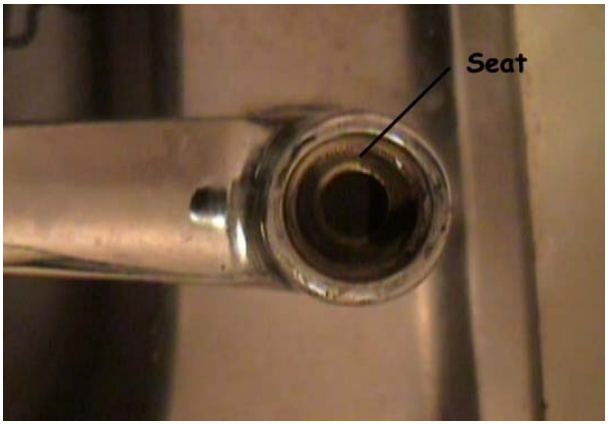
Some valves have a small retaining nut for the washer, as this one has. Some have the washer simply pushed on to a centre lug. Either way, now you have got this far, you may as well change the washer. Most washers are symmetrical and turning the old one over will give you a new surface to work with.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

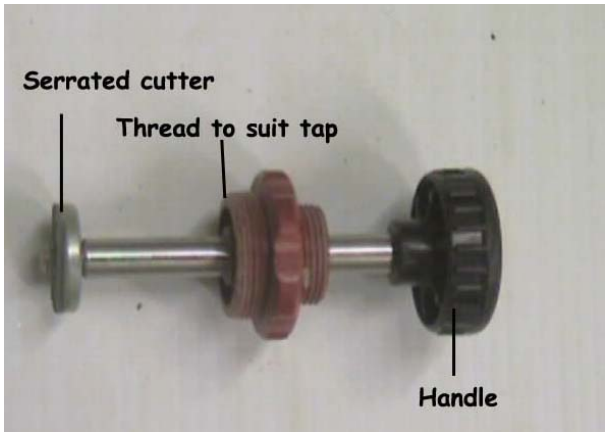
Tap valve seat:

The operation of the tap handle, opens or closes the washer against the seat, which is a small shelf just inside the body of the tap.



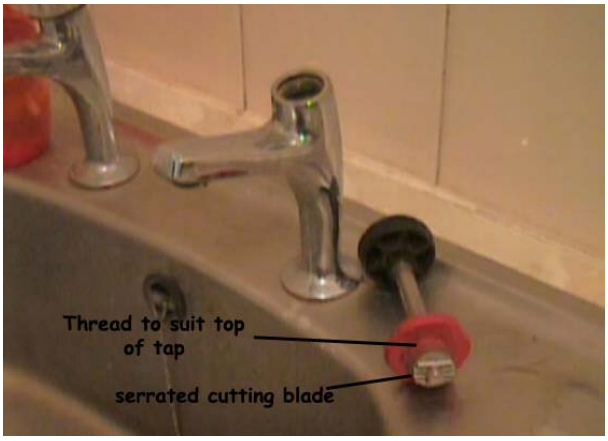
Valve seat grinder:

If your tap has been dripping, more often than not, small canals will have been eroded into the metal of the seat. These can be removed by grinding the rest of the seat down to level of these canals. This will produce a flat, smooth seat for the washer to sit on and seal the flow of water. The seat grinder is a simple machine, available from our tools section on the suppliers page. Scroll down to the bottom to the page and click into the screwfix advert. Go to hand tools and look for plumbing tools.



The correct size serrated cutter for your tap will be the one that just fits through the opening, and the correct size thread is needed to tighten up in the threads which held the valve.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Insert the grinder, tighten up and push down on the handle twisting as you do. Some plumbers prefer to make a full revolution with the grinder, others prefer to twist back and forth to grind the seat down. Always finish with a few, full revolutions to get the seat as smooth as possible.

Remove the grinder periodically and run your finger around the top of the seat, you will feel any remaining indents. Keep grinding until it is smooth and replace the valve etc. Turn on the water. (Don't forget you may have a tap open downstairs).

Leaks at the top of the tap:

A dribble from the top of the tap is usually a result of the Gland seals being worn. Sometimes there is a gland nut, which can be undone to reveal the O ring sealing the gland to the head. (see diagram at top). Other times there is a circlip holding the spindle to the head. This can be removed carefully as shown below.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

In both instances an O ring seal or seals will be revealed and these can be changed by rolling them from the spindle and fitting new.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to the Tiling section, this part of the guide will take you through the process of replacing a broken tile.

To complete this task you will need the following items:	
• Replacement tile/tiles • Tile Adhesive • Tile grout (ready mixed is easier) • Masking tape • Electric drill with 5mm masonry bit • Cold chisel • Wood chisel	• Tile adhesive spreader • Tile Spacers • Grout spreader • Grout rake • Plastic grout finishing tool • Safety goggles, appropriate work gloves

When working with ceramic tiles **always** wear safety goggles and thick work gloves !

Place the masking tape in two strips diagonally to form an X shape on the tile as shown in **Fig 1.1**

Using the 5mm bit drill holes at intervals along each strip of masking tape as shown in **Fig 1.2** this will help stop the drill bit slipping, only drill the depth of the tile, you could wrap a piece of masking tape around the drill bit at the required depth to use as a guide.

Next using the grout rake remove all the old grout from around the tile, ensuring not to damage the surrounding tiles.

Now get your cold chisel and hammer and chip away at the tile starting from the middle and work your way out to the edges along the masking tape.

Next remove the masking tape, you may find that most of the tile comes away with the tape, use the wood chisel bevel side down to remove any bits of tile that are left taking care not to damage the surrounding tiles. When you have removed all of the tile remove any old grout that may be left.

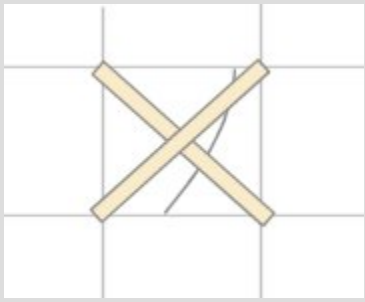


Fig 1.1

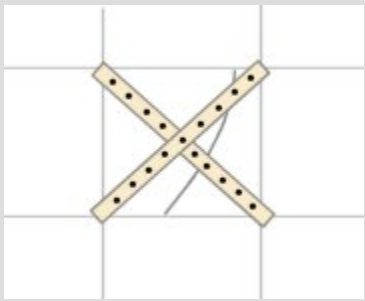


Fig 1.2

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Now gently remove the old tile adhesive from the wall taking care not to slip with the chisel (see **Fig 1.3**) and damage any of the other tiles, leave yourself with a nice flat surface for applying the tile adhesive.

To give yourself a guide place the tile into the space to see if it fits and to make sure it is even, if the tile rocks then the surface is not even. This will also give a guide as to how much tile adhesive will need to be applied.

Next take the replacement tile and apply the adhesive to the back of the tile using the adhesive spreader, use sparingly as the tile has to sit flush.

Now carefully put the tile into place, making sure all sides/corners are flush with the surrounding tiles. When you are happy that the tile is flush, clean all adhesive from the face of the tile and the surrounding areas.

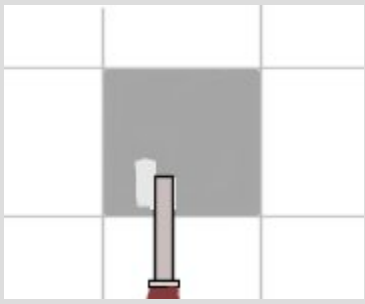
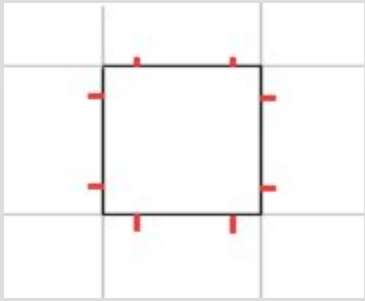


Fig 1.3

Use your tile spacers to get an even spacing around the tile as shown if **Fig 1.4** and leave for 24 hours or however long the tile adhesive manufacturer recommends.

Once the tile is securely fixed in position remove the tile spacers and grout around the tile. Use your plastic grout finishing tool to give the grout a smooth finish.

When the grout has dried simply polish off with a dry cloth.

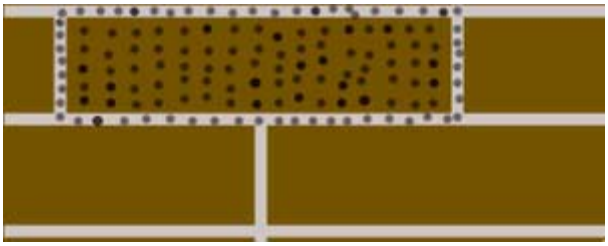


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

REPLACING A BRICK

For a variety of reasons bricks can get damaged, marked or stained. You may simply have had a hanging basket fixed to a brick with a hook in a wall plug and are now left with a messy hole. Changing a single brick is not difficult but you will need a power drill, a 6 or 7mm masonry bit, a lump hammer and a sharp cold chisel. A jointing or plugging chisel is very useful in the circumstances also. To replace the brick you will need a little sand and cement mixed to the required strength and colour (See our mixing sand and cement project) and a pointing trowel.

First use the drill and masonry bit to drill holes in the joint surrounding the brick and in the brick itself. The more holes the better.

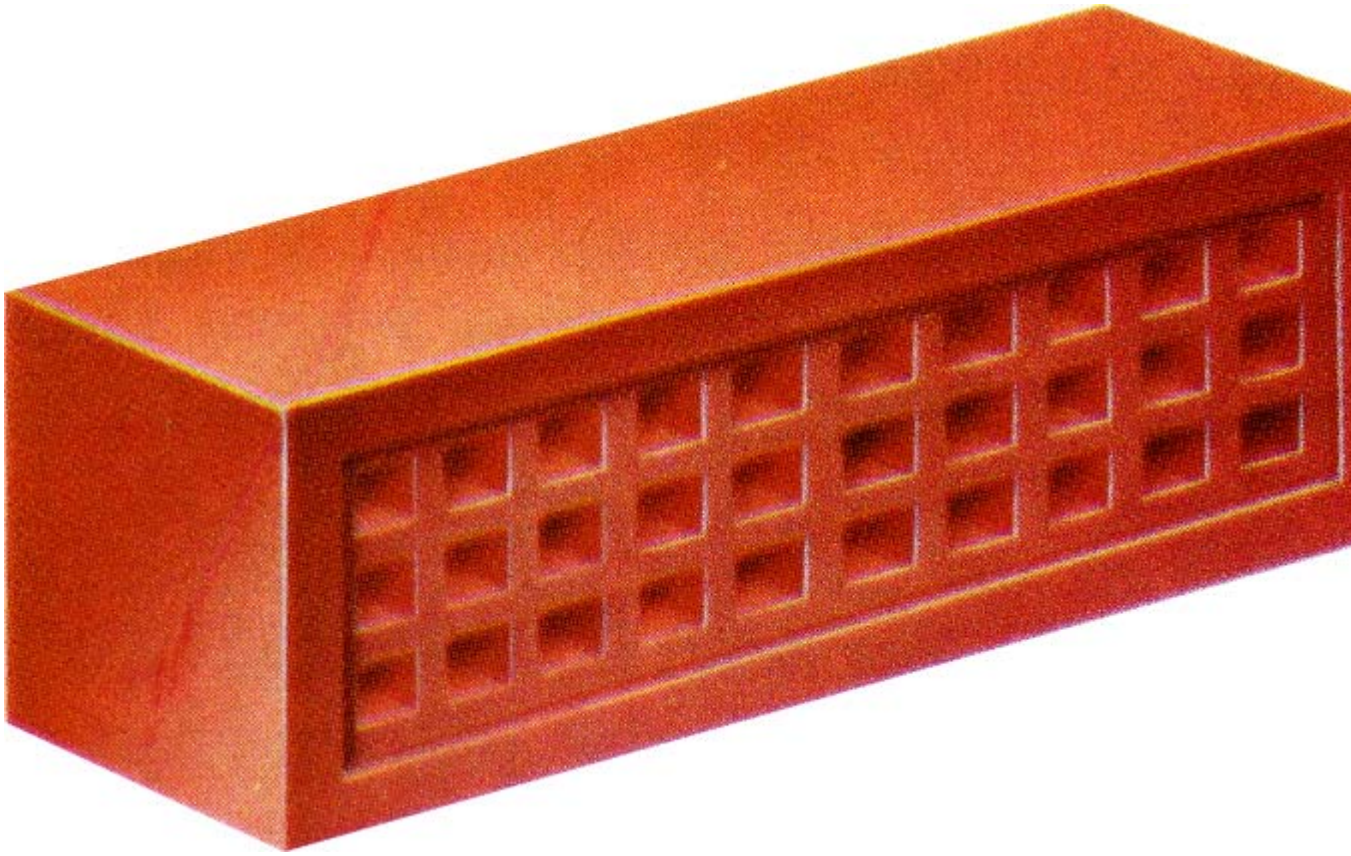


Next, using the cold chisel, even a bolster chisel, chop out the brick. The drilling will have made this considerably easier and if you have drilled all the way into the brick, about 100mm, you should have no trouble removing all it. For fiddly corners and sections of the mortar bed which always seem to want to stay there, use a jointing or plugging chisel. These are really sharp and the acute angle of the blade allows you to get right to where you need to be. Click on the images below to view or buy the tools.

I

Having removed the brick, sweep out the hole with a paint brush or similar and get your mix of sand and cement ready. Place a bed on the floor of the hole and make sure it is a little thicker than the bed joint you removed. If you can now, using the pointing trowel, get some to stick to either side of the hole, that's great. If not don't worry we will force that in later. Now spread some on the top of the new brick and pat down a little to help it adhere to the surface.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Push the brick into the opening. Some mortar will squash out so cut this off with the trowel. Wiggle the brick about so it sits level in the opening and the joints line up with the existing joints. Use the pointing trowel to push in more mortar where you can see any voids. Finally point up the new joints to match the existing shape. If the joints of the wall are in the shape shown below, this is called bucket handle pointing and is easily achieved by chopping 6 inches from the end of your hose pipe and running it along the joint.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

SAFE DIY

SKILL LEVEL

SAFETY FIRST

Whenever you are carrying out DIY, your working practices don't only affect you - they could also affect the safety of anyone else nearby.

INTRODUCTION

If a job is worth doing at all, it's worth doing safely.

Safety should always be a top priority for anyone who is involved in DIY. Many of the hundreds of accidents that happen each day in the home or garden could be easily avoided with a little thought. However experienced you are, it always pays to take time to plan your work, and to think about any safety issues before you start.

Ultimately, the success of any DIY project can be affected by the attitude you have to safety. Let safety be the first thing you think of before starting a job, and the last thing you think of when finishing it - so that it becomes an integral part of everything you do. This leaflet contains a wealth of suggestions that will help you to think about safety, and to practise it.

2 - Be prepared

Preparation and planning are key elements of good safety practice. They not only help to keep you safe - they can also save both time and money.

Before starting a job, be realistic about how long it will take. Have regular breaks to avoid tiredness or loss of concentration. If it takes longer than you expected, don't start cutting corners or speeding up - take your time and make sure the job is done properly.

Avoid loose clothing, tie back long hair (or tuck it under a hat), and remove any loose jewellery, including earrings, necklaces, bracelets and watches.

Before you start any plumbing work, check the location and condition of items such as stopcocks and gate valves. Ensure that they can be quickly opened or shut in the event of an emergency.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

It may seem obvious, but always read through any instruction leaflets beforehand - especially if you are using an unfamiliar piece of equipment. Don't assume you know how it works - check it out first. Make sure you have a First Aid kit (with contents that are not past their 'sell by' date) and keep it somewhere handy (1).

Switch off at the mains when working with electricity. Tape over any broken or unusable switches, and make sure that any broken items are replaced as soon as possible.

Make up a simple electricity repair kit for basic emergencies. This should contain a torch (with working batteries), rubber gloves, insulated pliers and screwdrivers, insulating tape, spare bulbs, fuses and fuse wire.

Don't be too proud to ask for help. If in doubt at any time, don't take risks - contact a professional.

3 - The tools of the trade

Always use the right tools for the project - don't be tempted to improvise! Don't use tools which have loose heads or handles. If you need to buy new tools, check the labels and opt for ones which are made to a British or European standard or which have an approved quality and safety mark.

Always read the instructions before use. Maintain all tools in a good, clean condition - especially electrical appliances.

Keep the cover guards on sharp tools when they are not being used. Use a toolbox with a tidy, so that everything is instantly at hand.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Don't forget to wear the correct protective clothing at all times - including strong shoes, gloves, eye and ear protection, safety helmet and dust masks etc (2).

4 - The ladder of success

Many DIY accidents are caused by the careless use of ladders or scaffolding. Always inform someone of what you are doing.

Use sensible shoes when working on ladders - not sandals or bare feet.

The bottom of the ladder (which should preferably have non-slip feet) should rest on a hard, level surface. Similarly, the top should rest against a solid surface. Don't prop it against glass, window sills or gutters - where necessary use a pre-fitted stand-off.

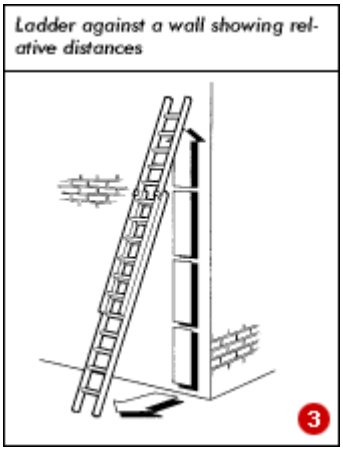
Many accidents are caused by slipping ladders, so secure both the bottom and top parts to something firm and strong with ropes or straps.

When you need to move the ladder, ask someone to help wherever possible. Always move or extend a ladder rather than risk overreaching.

Make sure your ladder is at a safe angle - the distance of the feet from the wall or vertical surface should be a quarter of the ladder's height. A 6m (20ft) ladder should therefore be 1.5m (5ft) away from the wall at the bottom (3).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Ladder against a wall showing relative distances



If you need to work on scaffolding, always ensure that it is erected on firm, level ground. Scaffolding with a 1.3m (4ft) square base should be tied to a building once the height exceeds 3.25m (11ft). Provide kick boards around the platform.

Always wear a helmet when working on scaffolding. Gloves are also recommended, although you may find them restrictive.

5 - Power to the people

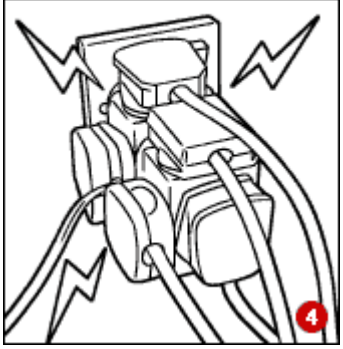
Electricity is a potential killer, and should be handled with care - if in doubt, call in an expert.

Water and electricity don't mix. Even if you're carrying out seemingly harmless tasks such as washing down walls, turn off the electricity first. Never use any electrical plugs, sockets or equipment which have been wet, unless you are sure that they have thoroughly dried out.

Extension cables often need to be uncoiled before use, or they could overheat - check the instructions. Make sure that it is safe to use the extension cable with an appliance before you start.

If you can't avoid working with electrical appliances in damp conditions, you should use a Residual Current Device or power breaker. This automatically cuts off the power supply in the case of an accident (such as a cut cable) or a malfunction.

An overloaded socket, with adaptors and plugs



Take care not to use too many plugs or adaptors with an electrical socket - it could overload (4). Where feasible, check that the connections inside each plug are tight, and that the cord grip is tight around the cable (rather than just the wires inside the cable).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

All plugs should contain the correct fuse. If a fuse blows, switch off the power and unplug the appliance before trying to find the fault. If in doubt, ask an expert. The same principles apply to a mains fuse - use the correct thickness of fuse wire and switch off at the mains before checking a blown fuse.

Find the correct fuse rating by checking the manufacturer's recommendations, or from the recommended ratings that are often published on fuse packets or in good DIY books. Copy them onto a list, and keep it with your fuses.

Beware of damaged, kinked or frayed cables and flexes.

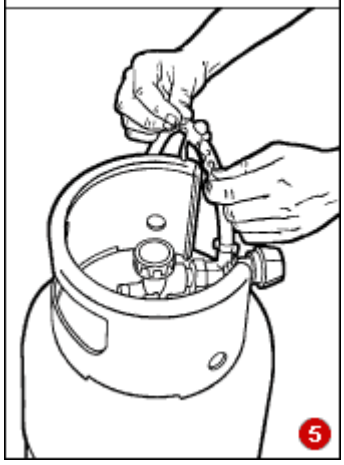
6 - It's a gas!

A wide variety of home appliances now run on liquefied petroleum gas (LPG) cylinders. Although these are generally very safe, certain precautions should be taken.

Fit new cylinders in the open air. Never smoke or work near a naked flame when changing a cylinder. Remember that even electrical tools can give off sparks.

LPG appliances should only be used in well-ventilated areas. The gas is heavy and highly flammable, and will not easily disperse in the event of a leak. LPG has a distinctive smell - if you smell it, turn off the gas and ask an expert to check the appliance.

Gas cylinder connections being tested



To check for leaks, apply soapy water over all connections - any leaks will be shown by bubbles. Hoses should also be checked regularly and replaced if they are cracked (5).

Spare LPG cylinders should be stored in a secure and well ventilated area outside the house, but not below ground

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

level.

ALL gas repairs must be carried out by a qualified and registered CORGI (Council Of Registered Gas Installers) engineer. To confirm whether a business is currently registered, ask your installer to show you a registration certificate.

7 - Out and about

A garden can be a surprisingly hazardous place in which to work. Electrical equipment such as mowers and hedge trimmers merit particular care. Always use a Residual Current Device or power breaker.

When using a mower or hedge trimmer, feed the cable over your shoulder, and always keep the appliance in front of the cable.

Never attempt to clean or adjust electrical tools whilst they are still plugged in. Switch off first, unplug, and clean by wiping with a cloth - do not wash the appliance!

When working in the garden, particularly with electrical equipment, always wear strong shoes or boots - never go barefoot.

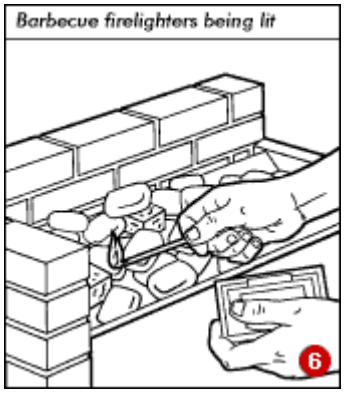
Many injuries are caused by falls due to slippery or uneven paths, or broken concrete and crazy paving. Repair any damaged areas as soon as possible. Use rubber or plastic caps on bamboo canes, as the tops can cause eye injuries.

Wear the correct protective clothing - including eye protection - particularly if using a chainsaw or spraying chemicals.

If you are planning to use a chainsaw, make sure you know how to use it properly. Never climb a tree whilst holding one - and always work with a companion in case of accidents.

Ask an expert or your Local Authority if you need advice on handling potentially harmful materials such as asbestos or lead.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Ensure that barbecues are located well away from fences, low trees or shrubs and sheds. Never use paraffin or petrol for lighting a bonfire - there are many suitable firelighters or starter fluids available (6). Keep children at a safe distance, don't wear loose, flapping clothing and tie long hair back.

Never spray a lighted barbecue with a flammable liquid, even a recommended starter fluid.

8 - Accidents can happen...

Even the most safety-conscious worker can sometimes have an accident. Here are some basic first aid tips.

If someone is injured, remove any continuing danger: for instance, turn off the electricity if appropriate. Then don't panic, but assess the seriousness of the situation as calmly as possible. Don't move the patient unless necessary. If in any doubt, call a doctor.

Small cuts and grazes should be cleaned up with soap and water - not antiseptic.

Don't give an injured person any food or drink (in case any anaesthetics need to be administered at a later stage). However, if you urgently need to dilute the effects of poisons or chemicals, give a drink of water, unless the patient's mouth is burnt.

Call the emergency services (999) in cases of unconsciousness; drowsiness or sickness; poisoning; severe bleeding or bleeding from the ear; bad burns; or intense pain.

Don't try to induce sickness - and never give the patient salty water.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Severe bleeding should be reduced by pressing a pad on the cut. A clean, folded handkerchief is ideal. If the cut still contains a large foreign body (such as a splintered stick or glass), press near the wound. Continue until the bleeding stops. If a limb is bleeding, raise it up, unless it's broken (7). For deep, wide or dirty cuts, or wounds containing a foreign body, call a doctor.

Burns and scalds need hospital treatment unless they are very minor. Small burns should be held under running cold water for at least ten minutes. Because skin can swell, remove any belts or jewellery, but don't attempt to move any clothing that is stuck to the burn. To minimise the risk of infection, burns can be covered with a clean cloth (such as a large handkerchief or pillowcase) or clingfilm. Never use butter or oil on a burn - leave it untreated.

Consider taking a simple first aid course so that you are better prepared for any accidents.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Sandpapers/glasspapers - types and their uses

grit size - backing material - backing adhesive - forms of sandpaper - types of grit - using sandpaper

The term 'sandpaper' is used these days to cover abrasive grit on flexible backing sheets used to smooth many types of material. True 'sandpaper' (i.e. backing paper covered with grains of sand) is no longer available commercially but has been replaced by backing sheet covered with glass, aluminium oxide, silicon carbide, garnet or other specialist grit. Generally the terms 'sandpaper' and 'glasspaper' are used generically to cover all types of grit attached to a backing sheet - 'Sandpaper' is used below in general terms to refer to the family of sheet type abrasives.

Each type of grit has different characteristics which make each most suitable for specific applications, an understanding of the types of grit is essential so that the right type is chosen for a particular job.

In simple terms, the abrasive grit is fixed by an adhesive to a backing sheet - the type and size of grit, the type of adhesive and the type of backing material all have an effect on the suitability of a sandpaper for a particular job.

General characteristics:

Grit size

Various sizes of grit are available for all types of grit material, the size is referred to by a number which represents the number of holes per linear inch in a sieve screen - they range from 40 (very course) to over 400 (very fine). Good quality sandpaper will have universal sized grit. The size of grit is used to classify the sandpaper by 'grade' as follows:

Grit size	**grade**
40-60	course
80-100	medium course
120-150	medium
180-220	fine
240 upwards	very fine

The individual sheets of sandpaper are normally marked on the reverse with the grit size (i.e. 120) and/or with the grade (i.e. medium).

Most commonly, sandpaper are available as 'closed coat' (i.e. completely covered with grit) however 'open coat' (where only 50 to 70 per cent of the backing is covered) is available for most types of sandpaper although only a specialist supplier may stock them. Closed-coat sandpapers cut faster, but are more likely to clog (i.e. the intergrain space become clogged with the waste from the material being sanded) than open-coat sandpapers.

Backing materials

Three types of backing materials are commonly available:

- Ordinary paper - Although relatively a cheap backing, ordinary paper is an adequate material for most sandpapers. The quality of paper varies depending upon the intended method of use (and price); sandpaper supplied for use with power tools generally has a tougher quality of backing paper than that sold for hand use.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Waterproof paper - Water proof paper is essential where the sandpaper is to be used with a lubricant. The back of this type of paper usually has a darker, glossier appearance.
- Cloth - Generally used where a high degree of flexibility is required when using the sandpaper.

Backing adhesives

Adhesives may be water soluble or waterproof. Most common sandpapers use a water-soluble adhesive; this is quite satisfactory, as most sandpapers are not intended for use with a lubricant.

Wet-and-dry sandpapers and others designed to be used with a lubricant, use a waterproof adhesive.

No matter which of these types of adhesive is used, it is important that the bond between the grit and the backing material is strong enough to prevent excessive separation when being used.

Sandpapers produced for power tools tend to have a stronger grit/paper bond than sandpapers made for hand use.

Forms

Sandpaper is available in a number of forms, each form being available in a number of grades:

- Sheets - normally (at least in the UK) about 280 x 230 mm, often sold for the DIY market in packs of 4 or more sheets, either of the same or mixed grades. Usually only suitable for hand sanding.
- Rolls - available in a number of widths (e.g. 50, 115mm), each roll is of a single grade and normally is sold by linear length. Although it is produced for use with power tools (e.g. orbital sanders), it can be used for hand sanding.
- Discs - for use with rotary sanders or other power tools. The discs are used with a stiff but flexible backing disc. The sanding disc is fitted to the backing disc either by a central securing screw/dished washer or by a self-adhesive backing. Various diameters of disc are available, the diameter of the sandpaper should match the diameter of the backing disc.
- Belts - for use with belt sanders. Various widths and lengths are available to suit each belt sander on the market.
- Specials - A number of power sanding tools are now available with non-standard 'foot prints', these require 'special' pre-cut shapes. Generally, the sandpaper is attached to the tool by a self-adhesive backing.

Sandpapers sold for power tool use are generally more robust than most types sold for hand sanding. While sandpapers for power tool use can be used for hand sanding, the reverse does not apply - hand sandpapers will not last very long if used with a power tool.

- Flexible Block - Flexible abrasive blocks are normally of rectangular cube with grit on four faces, two faces of one grade of grit and a different grade of grit on the other two faces. The block tend to be less durable, but can be useful when decorating. Blocks are available with different types of grit and different grade.
- Liquid Sander - Something which is not a true sandpaper. Ideal for the 'lazy' diy'er, Liquid Sander comes in a can as a liquid. It is just brushed onto a surface, it finely abrades and cleans the surface, leaving it ready for painting. It does not really 'smooth' a surface, it just provides a key on a sound surface for a new application of paint.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Types of grit

Glasspaper

Generally composed of quartz granules on a paper backing, this is an inexpensive, relatively soft abrasive for sanding painted or natural timber, metal, and other materials. It wears relatively quickly and is best suited to provide a roughish finish before a really smooth surface is attempted.

Normally only available with non-waterproof adhesives/backing paper.

Aluminium Oxide

This man-made material is suitable for shaping, sanding and polishing hard metal such as iron and steel, but also effective on timber. Aluminium oxide cuts much faster and lasts longer than glass or garnet.

It is available on non-waterproof, cloth or waterproof backings.

Cloth backing offers flexibility and is suitable for heavy-duty applications, such as rust removal and metal shaping.

Silicon Carbide (wet and dry)

Silicon carbide paper, also known as 'wet and dry' paper, is suitable for both dry and wet sanding. It is suitable for sanding hardwood and plywood, soft metal like brass and aluminium, and plastic; also used for smoothing glass edges and frosting glass surfaces. It is fast-cutting and almost as hard as diamond, but it is brittle so the coarser grades will wear fast if used on hard metal.

When used with water, it gives a very fine sanding of paint or varnish between coats. It can be used with mineral oil for smoothing and polishing metals. The lubricant helps to keep both the abrasive and the surface cool and floats away sanding waste; a additional advantage is that it prevents the formation of fine air-bourne dust. The wet slurry which forms will need to be wiped away during and after smoothing.

'Wet and dry' is extensively used during vehicle body painting as, with water, it can give a very smooth surface to each coat of paint - generally we expect higher quality paint finishes on Automobiles than on household fitments.

Garnet Paper

This is a natural crushed rock and is an excellent abrasive for general wood sanding, either by hand or with a power tool - it is recognised by its distinctive bright green colour. It now seems to be being replaced by Aluminium Oxide grit.

The natural garnet grit lasts about twice as long as the quartz chips used on glasspaper but it is not as long lasting as Aluminium Oxide.

Garnet is also available with a cloth backing; in this form, it is used for work requiring more durability and flexibility.

Garnet Paper is a good all round abrasive, but particularly useful for smoothing hardwoods and for fine finishing work.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Steel Wool

Although not a sandpaper, Steel Wool is used for fine 'sanding'. It is much used by the serious cabinetmaker as it has a much finer abrasive effect than grit materials on sandpaper. The fine steel strands cuts rather than abrades the surface, producing very fine finishes; as the wool is used, small pieces of it break off and mix in with the sanding dust.

Steel Wool is graded starting at a very coarse 5 through to a series of noughts - 0000 being the finest.

Although excellent on timber and metal, steel wool should not be used for smoothing plasterwork or other surfaces where the fragments of steel may become embedded and could rust stains.

Steel wool can be used to 'sand' complicated shapes such as metal castings or wooden mouldings.

Using Sandpaper

For best results:

- Always use the correct type and grade of sandpaper for the job in hand - do not use paper sold for 'hand sanding' in a power tool.
- Start by using a medium or course grade paper. Change the grade of paper you are using as the job progresses.
- Let the abrasive grit do the work, do not use undue pressure it will only clog the paper or cause the paper to wear out unnecessarily quickly. When power sanding, very little pressure is necessary, just guiding the tool is normally sufficient.
- Use a sanding block when hand sanding.
- Move sandpaper along the grain of bare timber, not across.
- On a smooth, non-grained surface, move the sandpaper in small circular motions.
- When using a lubricant, do not let the surface dry out. If excessive wet waste material builds up, wash it away from the work area.
- Take all appropriate safety precautions, especially when power sanding - refer to the instructions from the sandpapers and power tool manufacturers. Only allow competent people to use a power sander; with the abrasive surface moving it can cause injury if it comes in contact with skin or damage if brought into contact with an unintended surface.
- Store sandpapers carefully in a cool dry area. Except for papers made using waterproof adhesive and backing material, any dampness may cause the adhesive or backing to fail or weaken and grains will become detached.
- If the paper becomes clogged after a short time of use, look at the surface being sanded - if it is timber, the timber may be damp - allow time for it to dry out. Paint which clogs paper may either be too new to sand or old paint applied in thick coats which have not gone off.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

SHELVING AND STORAGE

SKILL LEVEL

Making storage space can be as simple as putting a hook on a wall, or as complex as a total loft conversion. Most jobs are a matter of a little imagination and some basic DIY skills.

SAFETY FIRST

Keep your fingers clear when nailing and screwing and especially when working with saws and chisels. Sharp tools are safer to use than blunt ones, so keep them in good working trim. Wear eye protection when necessary and be sure ladders are stable and safe. Dust is dangerous to the lungs so wear a mask when sanding.

INTRODUCTION

'A place for everything and everything in its place' - it's an old saying and it makes a lot of sense.

2 - Planning the work

Always plan for the major items to be stored first and decide how much space to allocate to them. Also, decide if you want freestanding units or built-in shelves and cupboards.

When planning a complete room or floor of a house, make up your plan to scale on graph paper. This will give you an accurate idea of what's possible to achieve maximum storage capacity and ease of access.

Items such as books in bulk which might cover a whole wall can act as soundproofing on an interior wall or as additional insulation on an outside one.

Items can either be stored out of sight behind solid doors or displayed on open shelves or in glass-fronted cabinets.

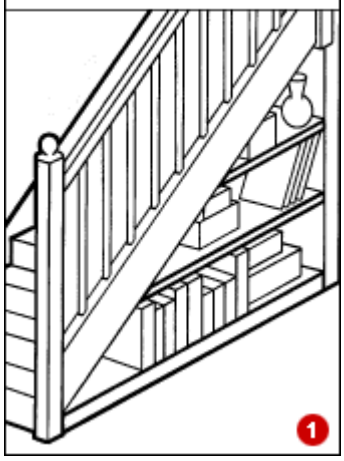
Plan your storage to allow for additional items to be added in the future. It seems you can never have enough space.

The height and positions of cupboards and shelves will depend a lot on how often you use them. In the kitchen this is particularly important since most articles are in regular use. There are also regulations relating to shelving and other aspects of kitchen design, so it helps to be familiar with them. This information is available, free of charge, from your local council.

3 - Using redundant space

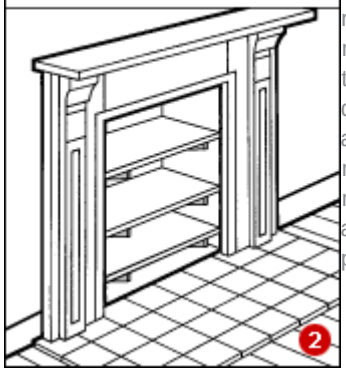
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Understair storage is an ideal use of wasted space



Probably the easiest way to gain storage space in the home is to use the unused areas of the building itself. One of the most common of these is the area below a staircase. This is easily turned into storage for household items such as brushes and brooms. It can be simply shelved out and left open- fronted (1) or covered in as a complete cupboard.

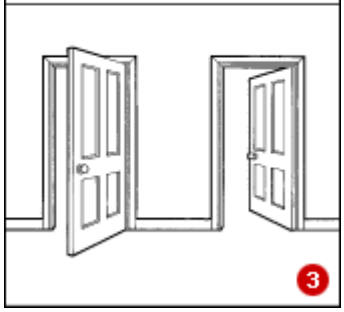
An old fireplace can still have a lot to offer



Fireplaces are redundant in many homes and they can be removed quite easily. You may need to employ a builder to ensure that no structural damage is done to the house and to see that an air flow is maintained. The space gained makes a useful storage area and can often remain a focal point in the room (2).

The alcoves on either side of a chimney breast can also be simply shelved out to create some very useful areas for storage. These are particularly useful as wardrobe spaces in the bedroom, either for freestanding units or built-in ones. Built-in wardrobes can be made to utilise all the available space to its fullest. Really deep alcoves can also be walk-in wardrobes or can even be used to house shower units.

Simply re-hanging a door can free-up a lot of wall space



Check to see if space can be gained by removing a door or by re-hanging it to open the opposite way (3). Floor space may also be gained by using a sliding door in certain situations. Sometimes either of these solutions can free up a lot of space along a wall.

Most redundant space is on the walls. The more this can be

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

used the more efficient use you make of your home.

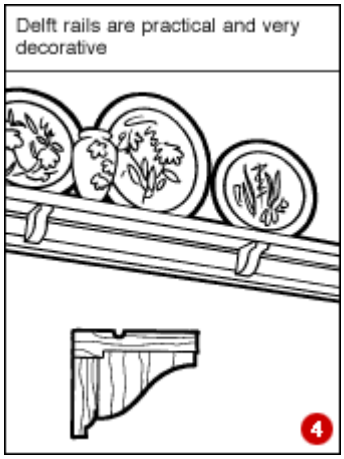
4 - Temporary storage

Plastic crates or wire baskets provide a quick and simple storage solution for busy people on the move who do not require permanent storage. These can be attractive enough to be left on view in a room and some will even fold away so they can be taken to the next stop.

Plastic boxes are space-saving when stacked one above the other in cupboards and wardrobes, and are particularly useful for clothes and children's toys. Children enjoy using brightly-coloured boxes.

5 - Pegs and rails

Peg rails and hooks are the most basic form of storage. Traditionally used for hanging hats and coats, they are very useful in the kitchen for utensils and decorative displays.



Definitely back in fashion is the display or 'Delft' rail. You can use these on just one wall or all round the room like a picture rail. Typically these are shallow shelves with a small groove or applied moulding to stop the plates from slipping off. They are ideal for displaying decorative plates and other china (4).

6 - Shelving

Bear in mind the combined weight of the objects to be stored when you buy or make shelving and also the type of fixing you may need to fit the shelves to the wall. Books, especially, can be very heavy and are likely to increase in number over the years.

There are shelves and shelving systems available to suit every budget and some very attractive ones may be bought quite cheaply.

Adjustable shelving units come in many shapes, designs and colours and can often be used either free-standing like a room divider, or fixed against a wall like ordinary shelving. They are easy to assemble and dismantle if you want to change the shape of the unit, move it or add to it. They can also be moved from room to room or from house to house.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Many units are available in a range of colours to suit other decor. Wall-hung adjustable shelving provides a more permanent but flexible system.

There are many different brackets and fixings available nowadays, in a range of colours and styles. Popular choices include pewter, antique bronze and aluminium finishes. There are even children's products available now too.

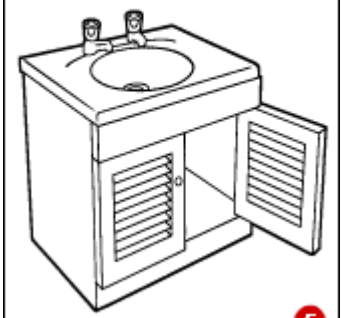
Freestanding shelving systems that can be quickly erected and dismantled are very useful for special occasions such as weddings and parties.

Corner shelves are handy for storing knick-knacks for display, but they also have a functional use as sites for televisions and stereo speakers. This not only gets the equipment off the ground, freeing up the floor space, but it also makes them easier to see and hear.

Wall brackets are made especially for TVs, microwaves and speakers and are available in varying weight and joint options, depending on the item you wish to mount.

7 - Space-saving furniture

The space below a basin can be put to good use

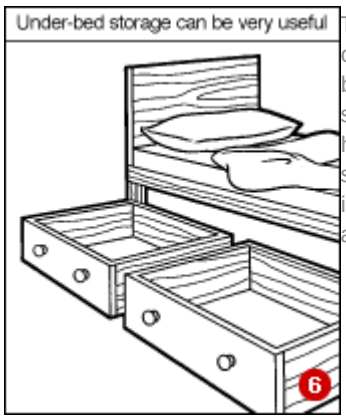


In the bathroom you can use the awkward space below the washbasin as a small cupboard to form a vanity unit in which you can store all sorts of articles (5). Melamine-faced chipboard can be used, or you may prefer to work in solid timber. Be sure to seal the joint along the back wall with mastic to prevent seepage.

Most of the floor space underneath a piece of furniture is potentially wasted space, but this situation can easily be remedied.

Bunk beds are a great way to gain a bit of space in the kids' bedroom. These can be built-in or freestanding. Another option is a fold-down bed which, ideally, can be housed in an alcove and dropped into position overnight and folded back up again during the day. A bed that converts to a sofa will also save a lot of space in a bedsit or a teenager's room.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

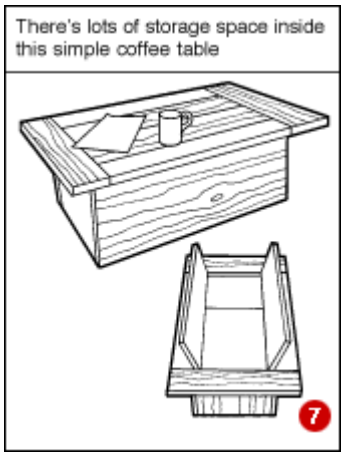


The space under a bed is one of the largest areas that can be usefully converted to storage. Pull-out drawers can house bed linen, clothes, shoes, toys and many other items which need putting away (6).

Another option is to use plastic storage boxes or shallow trays on castors which can be pulled out from under the bed very easily.

A double bed takes up about one third of the floor space of an average bedroom.

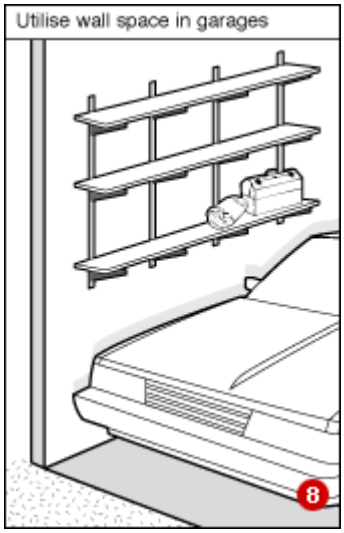
Fold-down tables are an ideal solution in a small kitchen/diner. They can be out of the way while the meal is prepared and lifted into position for eating.



Low tables can be used as handy storage units in the middle of a room. A small coffee table with a hinged lid makes a wonderful storage chest in disguise (7).

8 - The garage

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



This is the one place where you really can't have storage in the middle of the floor area, but the walls and roof space provide excellent alternatives (8).

You don't have to consider how things look on the walls of a garage, so you can use the whole area to its best advantage.

Store larger items such as heavy containers, mowers and bicycles at ground level. Fit shelving to store other items. Keep most items above floor level, both to save space and to make picking them up easier.

Remember to keep regularly-used items at eye level and within easy reach.

Many of the mechanical items stored in garages are either heavy or dirty and oily. One useful heavy-duty shelving system is scaffolding. If you have the space, one or two sections of tower scaffold can be used to make a sturdy frame that you can clad out in sawn timber.

Long items such as ladders can be stored in the roof area, or if you have a flat roof, they can be hung from the ceiling or wall by some of the large hooks available.

If you do find you have sufficient floor area to accommodate a chest freezer this will free up the kitchen space. Services permitting, the washing machine and tumble dryer could also be usefully stored out here. If you want to use the garage as a workshop but are tight on space, use a folding bench that can be hung on the wall well out of the way when not in use.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Approximate Conversions to Metric Measures

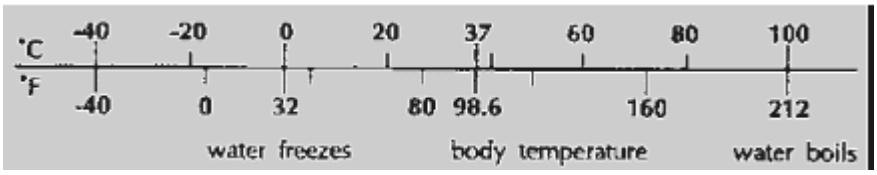
Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	metric ton	t
		VOLUME		
tsp	teaspoons	5	milliliters	mL
Tbsp	tablespoons	15	milliliters	mL
in^3	cubic inches	16	milliliters	mL
fl oz	fluid ounces	30	milliliters	mL
c	cups	0.24	liters	L
pt	pints	0.47	liters	L
qt	quarts	0.95	liters	L

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

gal	gallons	3.8	liters	L
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3

TEMPERATURE (exact)

°F	degrees Fahrenheit	subtract 32, multiply by 5/9	degrees Celsius	°C



Approximate Conversions from Metric Measures

Symbol	*WhenYou Know*	*Multiply by*	*To Find*	*Symbol*

LENGTH

mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi

AREA

cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares	2.5	acres	(10,000 m^2)

MASS (weight)

g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

	metric ton	1.1	short tons	(1,000 kg)

VOLUME

mL	milliliters	0.03	fluid ounces	fl oz
mL	milliliters	0.06	cubic inches	in^3
L	liters	2.1	pints	pt
L	liters	1.06	quarts	qt
L	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3

TEMPERATURE (exact)

°C	degrees Celsius	multiply by 9/5, add 32	degrees Fahrenheit	°F

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Spanners and Wrenches - the various types

open spanners - ring spanners - adjustable - box spanner - socket allen keys - torque wrench - pipe wrench - basin spanner - tips

Spanners come in all shapes and sizes, many being developed to deal with a specific job. By far the most important consideration when using a spanner is to ensure that it fits the nut perfectly. Too loose, and it will round the comers of the nut - and slip, often damaging the nut. Spanner and your hand. When purchasing spanners, select good quality tools. The best types are forged from carbon steel or chrome vanadium, if not abused, these will last a lifetime.

Open ended - 'C' spanner

The open ended spanner is the most common type, and may have a single or double end. The head has its jaws offset by about 15 degrees from the run of the shaft. This is so the spanner can be turned over to engage different flats of a nut when working in confined spaces. Another version, called an obstruction spanner, is designed for use in confined spaces. It has one head set at anything upto 90 degrees to the shaft, and the shaft may have a slight curve.

Ring spanner

As the name implies, the ring spanner usually has a completely enclosed head, and may have six or 12 flats. A 12 flat spanner engages upon the corners of the nut and can engage both hexagon and square bolts. A six flat spanner is normally shaped to fit against all 6 sides of hexagon nuts, this ensures a very tight fit and can allow considerable force to be applied. Ring spanners are stronger than the open ended type, but it does need access to fit it over the nut and can take a little time to locate it correctly.

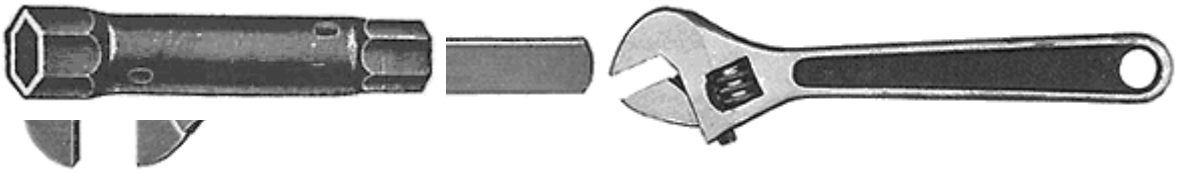
Offset ring spanner

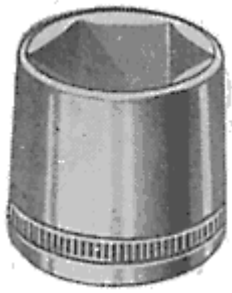
The most useful ring spanners have offset heads, allowing the spanner to connect with nuts in awkward places, and to give room for your hand to move without hitting the workpiece.

Split ring spanner

The split ring spanner is a hybrid as it has a section of the ring removed so the six or 12-point jaws can be located like an open-ended spanner.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





Adjustable spanners

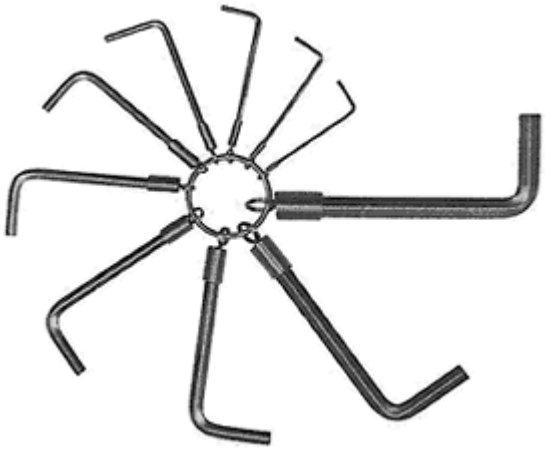
The obvious advantage of an adjustable spanner is that it will cope with a whole range of nut sizes, within the capacity of the jaws. The most common version has its jaws set at an angle of 15 degrees to the shaft, but other angles are available, including a 90 degree version. When in use, it is important to adjust the jaws so that the spanner is a good fit on the nut. Use the spanner so the main strain is taken by the solid section of the head rather then the adjustable part. Another common version of this type is the Monkey Wrench.

Bulldog spanner

In this pattern, a worm screw is located close to the opening jaw, which has a rack engaged with the screw, making the spanner very easy to adjust with the finger and thumb of the holding hand.

Box spanner

The spanner is made of tubing with flats arranged at each end. Holes through the tubing are designed to take a tommy bar set at right angles to the tube, and this is used to apply purchase to the spanner head. One of the most common types is the spark plug spanner, which may be designed to take a tommy bar, or it may incorporate a swivel handle which can be used to apply the leverage.



Socket

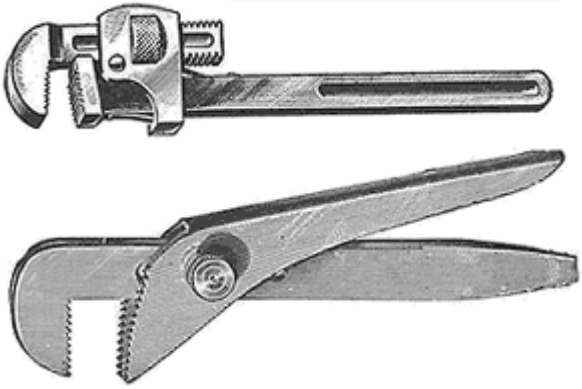
This spanner consists of a ring- type head with a square hole at the rear designed to lock into various types of handle. They are available in sets, offering a range of heads, spacer drive bars and handles. Sockets are generally required when torque wrenches are used to tighten nuts and bolts.

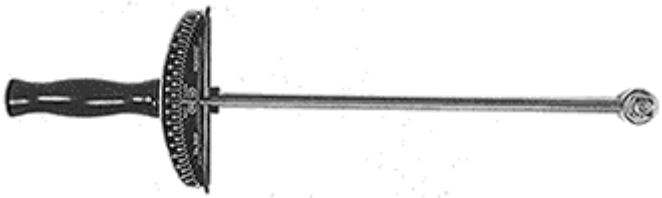
A variation of this design Is the wheel nut spanner which, in its simplest form, consists of two double-ended socket and spanners fixed together at right angles. Considerable pressure can be applied with this type, and care must be taken not to over-tighten.

Allen key

This is a simple hexagonal shaped rod with a right-angle bend designed to engage into the head of a screw which has a hexagonal shaped recess in the head - this Is a very common screw found in many modern domestic appliances. Allen keys are available in sets of metric and imperial sizes.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





Torque wrench

The torque wrench is used to tighten nuts and bolts to a specific torque. In the type illustrated, a pointer attached to the turning point is suspended over a scale mounted in front of the handle, as the handle is turned to tighten the nut/bolt, the arm is deflected and the pointer moves across the scale indicating the torque being applied. Torque wrenches are normally made to work with sockets.

Pipe wrenches

Although they resemble adjustable spanners, the basic difference is that the jaws of a wrench are serrated, enabling them to grip and turn objects such as lengths of pipe. The wrench should never be used on good nuts as the jaws can cause damage to the flats.

Footprint wrench

The jaw opening can be adjusted by lifting the moveable handle and re- positioning the pivot so that the wrench can be used on a number of pipe sizes. Pressure is applied by squeezing the two handles together.

Stilson wrench

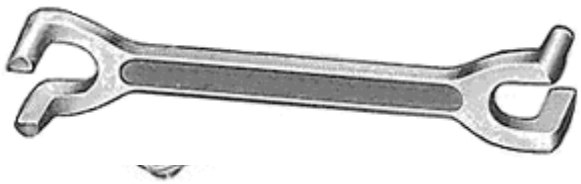
The opening jaw is controlled by an adjusting nut which, when turned, moves the jaw backwards or forwards. When pressure is applied to the handle, the jaws grip even tighter, as the handle is pivoted to the section holding the movable jaw. Pipes can be damaged by excessive pressure is applied to the handle it.

Strap wrench

Where it is important not to mark pipework too much, the strap wrench is ideal. Instead of metal jaws, pressure is exerted via a metal chain which is wrapped around the pipework. As pressure is applied to the handle, the chain grips even around the pipe spreading the load.

Mole Wrench

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



The mole is a self gripping wrench which can be adjusted to grip various diameters of pipe. The width of the jaws is adjusted by the knurled screw on the rear of the main handle and the tool is just then 'squeezed' onto the pipe. The wrench incorporates a quick release lever so that the wrench can be easily released after use.

Tap spanner

Also known as basin wrench. It is designed to tighten basin and bath taps backnuts in the often restricted space under the basin/bath where an ordinary spanner would have insufficient turning space. A basin spanner is double- ended, with cranked jaws allowing the shaft to be held vertically, gripping the nut horizontally.

USEFUL TIPS

- Always ensure that a spanner fits the flats on a nut perfectly. A loose fit will damage the nut and cause slipping.
- Where a nut is very tight, ensure your hand has a clear area of movement. The sudden release of a nut under pressure can lend to grazed knuckles.
- If a nut won't move, apply penetrating oil and allow time for it to act. The same applies to rusted nuts but wire brush it first..
- When working on chrome items, like taps, protect the metal with scraps of leather between the metal jaws. Never use pipe wrenches with serrated jaws.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Do It Yourself

To print this page, select **File** then **Print** from your browser

URL: http://www.diynet.com/diy/dr_repair/article/0,2037,DIY_13800_2275279,00.html

Sticky Door

From "Ask DIY"
episode ADI-404 -- More Projects »

Q: My back door is difficult to open and close because it's sticking. Can I repair it?

Figure A

A: (from Brad Staggs, *Ask DIY* Home Improvement expert) There are a couple of easy, quick fixes that may be helpful in dealing with a sticky door.

Materials (may include):

Cordless drill and screwdriver attachment
Utility knife
Wood or cardboard shim
Wood toothpick

Figure B

Suggestions:

Figure C

- The first thing to check is the strike plate mounted in the door frame. The strike plate is part of the door-latch mechanism. Sometimes the screws holding the strike plate in place can work themselves partially loose (**figure A**). If the screws are loose, they may be interfering with smooth operation of the door, or they may be allowing the strike plate to become misaligned and interfere with the door closing. If the screws are loose, tighten them and then check the door to see if the situation improves.

Figure D

- A related problem may arise if the strike plate is not mortised far enough into the doorframe -- causing the door to stick. You may want to remove the strike plate and inspect the mortise (or recess) in which the frame (**figure B**).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- If necessary, use a utility knife to trim out around the edge of the mortise (**figure C**) so that the strike plate can sit further back into the frame.

Figure E

- Once you've trimmed out enough wood, reinstall the strike plate (**figure D**) and check the door's operation.

Figure F

- A separate problem may arise if the hinges aren't seated or functioning properly, causing the door to hanging improperly. Check the gaps around the perimeter of the door. Around the top of the door, the gap should be about 1/16-inch. Along the bottom, the gap should be about 1/4-inch, or slightly more if it has to clear carpeting when it opens. Along the lock side, the gap should be about 1/8-inch all the way down the length of the door. If the gap is uneven at the top or bottom, the door may be tilted slightly in the frame because of a hinge that is loose or not mounted properly. You may simply need to tighten the screws holding the hinges in place to correct a minor problem.

Figure G

- If tightening the screws doesn't provide enough adjustment, you may need to remove the hinge entirely, and place a thin wood-shim spacer (**figure E**) behind it. A shim can be made from a piece of a paint-stir stick, cut to the proper size. For a less severe problem, a cardboard spacer may be sufficient.

Figure H

- After the shim is in place, reinstall the hinge -- screwing the wood screws right through the shim and into the existing holes (**figure F**).

- By using shims to adjust the way that the door hangs, you may be able to realign the door so that the gaps are even (**figure G**) and the door no longer sticks.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Tip: If the wood screws holding a hinge or strike plate in place have become stripped, you can tighten the screw's grip by inserting a wood toothpick in the screw hole before reinstalling the screw (**figure H**). Break the toothpick off so that there is none extending outside the hole. The extra sliver of wood in the hole will help tighten the screw's hold on the wood.

RESOURCES:

The Wood Finisher: How to Finish Everything, From Decks to Floors to Doors
Model: 0345372972
Author: Bruce Johnson
1993

HGTV's Complete Fix-It
Author: HGTV
Click HERE to order *HGTV's Complete Fix-It* book.

Home Book: Ultimate Guide to Repairs & Improvements
Model: 158011069X
Author: Mike McClintock (Editor)
Creative Homeowner Press; September 2000

- **ALSO IN THIS EPISODE:**
  Automotive Quick Tip: Checking Tire Pressure
  Sticky Door
  Mantel Scarf
  Restoring Dull Furniture-Finishes
  Automotive Quick Tip: Exhaust System Check
  Rock Garden
  Home Repair Quick Tip: Mixing Concrete
  Interior-Door Facelift
  Crafting Quick Tip: Glue Gun

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Easy Wood Plans

www.easywoodplans.com

#7B, 2316-27Ave N.E.
Calgary, Alberta
Canada, T2E 7A7

NOTICE

"The purchaser agrees when purchasing this plan (the "Plan"),
1) the purchaser has acquired the right to build or construct the object or project set out in the Plan (the "Project") for his/her/it's personal use only and not for any commercial use,
2) reproduction of the Plan in whole or in part by any means whatsoever is strictly prohibited,
3) Blueprints for the Handyman shall not be liable for any willful misuse of negligent use of this plan, the Project or any tools used to construct the Project or for any loss or damage resulting therefrom."

75 1/2" X 75 1/2" SUNSHINE CEILING

NOTE: ***Read all directions before beginning***
Carpenters Glue should be used to reinforce all joints
Set all nails and countersink all screws
Dimensions in brackets denote millimeters

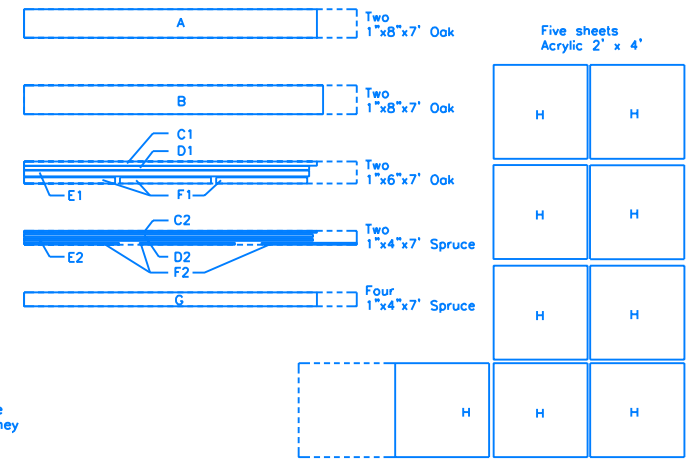
Directions

1) Lay out your material as outlined in the suggested materials layout (Fig 1). Draw out all parts exactly as illustrated in the cutting diagram (Fig 2), including the letter designations, in pencil. Ensure to leave a small space between cut lines to allow for the width of the saw. Before cutting, double check all measurements to ensure that they are correct. Always cut on the waste side of the line.

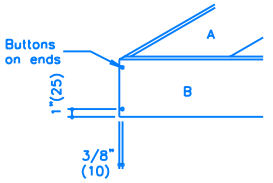
2) Pre-drill two 1/8" pilot holes in each end of pieces B as shown in Fig 3. Countersink with a 3/8" bit, 3/8" deep. Drill a 1/8" pilot hole through the holes in pieces B into the edges of pieces A, about 1" deep (Fig 3). Glue and screw pieces B to pieces A using eight 1 1/2" #8 flathead screws, two in each corner. Glue buttons into pieces B countersinks. Square the assembly and allow to dry.

3) Pre-drill pieces C2 through the 1/2" edge using a 1/16" bit. Drill near each edge and every 8" in between. Keeping C2 on it's 1/2" edge. Glue and nail pieces C2 to pieces C1, keeping the edges flush, using 1 1/4" finishing nails (see Fig 4). Pre-drill ten more 1/16" holes through the 3/4" face in each piece C2. Glue and nail C1C2 assembly to pieces A, 1/2" up from the bottom edges of pieces A using 1 1/4" finishing nails (Fig 5). Pre-drill pieces D2, through the 1/2" edge using a 1/16" bit. Drill near each edge and every 8" in between. Keeping D2 on it's 1/2" edge, glue and nail pieces D2 to pieces D1, keeping the rear edges flush, and with a 1/2" overlap of D2 on each end of D1 using 1 1/4" finishing nails see (Fig 6). Pre-drill ten more 1/16" holes through the 3/4" face of pieces D2. Glue and nail D1D2 assembly to pieces B, 1/2" up from the bottom edge of pieces B using 1 1/4" finishing nails ten per D1D2 assembly. Note that the overlap on D2 will fit on top of C1. Pre-drill pieces E2, through the 1/2" edge using a 1/16" bit. Drill 1" from each end and every 8" in between. Keeping E2 on it's 1/2" edge, glue and nail pieces E2 to pieces E1, keeping E2 centered on E1 using 1 1/4" finishing nails (see Fig 7). Pre-drill a 1/16" hole through the center of the overhang on each piece E2 near the ends of pieces E2. Note these holes will be used for tacking pieces E2 into place. Place E1E2 assemblies on the C1C2 assemblies with pieces E2 overhanging top of pieces C1. Measure 24" between the bottom edge of piece D1 along C1. Nail E2 through the pilot hole to C1 using a 1" finishing nail at this location. Repeat for remaining E1E2 assemblies. Measure in 24" from the end of piece E2. Install eye screws (Fig 9). Repeat for the other three ends of pieces E2. Pre-drill pieces F2, through the 1/2" edge using a 1/16" bit. Drill 1" from each end and every 8" in between. Keeping F2 on it's 1/2" edge, glue and nail pieces F2 to pieces F1, keeping F2 centered on F1 (1/2" on both sides of F1) and an 1/2" overlap of F2 on each end of F1 using 1 1/4" finishing nails (Fig 8). Place the F1F2 assemblies loosely on the D and E assemblies as shown in (Fig 9), once ceiling is installed. Mount pieces G flush with the top of assembly ABAB (Fig 9 & 10) with sixteen 1 1/2"x1 1/2" metal angle brackets using sixty four 3/4" flathead screws, four each bracket. The outside pieces G mount tight to B with an angle attached to each end of G and two angles spaced 24" from ends of G on sides adjacent to B. The middle pieces G fasten to pieces A with two angle brackets on each end of G and screwed in A, pieces G are centered 25 1/2" in from B.

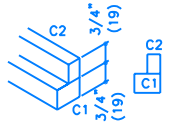
OVER



MATERIALS LAYOUT
FIGURE 1



SCREW AND BUTTON DETAIL
FIGURE 3



COMPONENT C
FIGURE 4

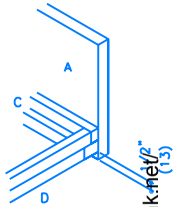
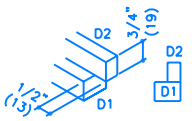
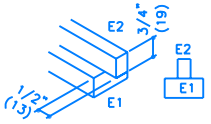


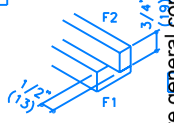
FIGURE 5



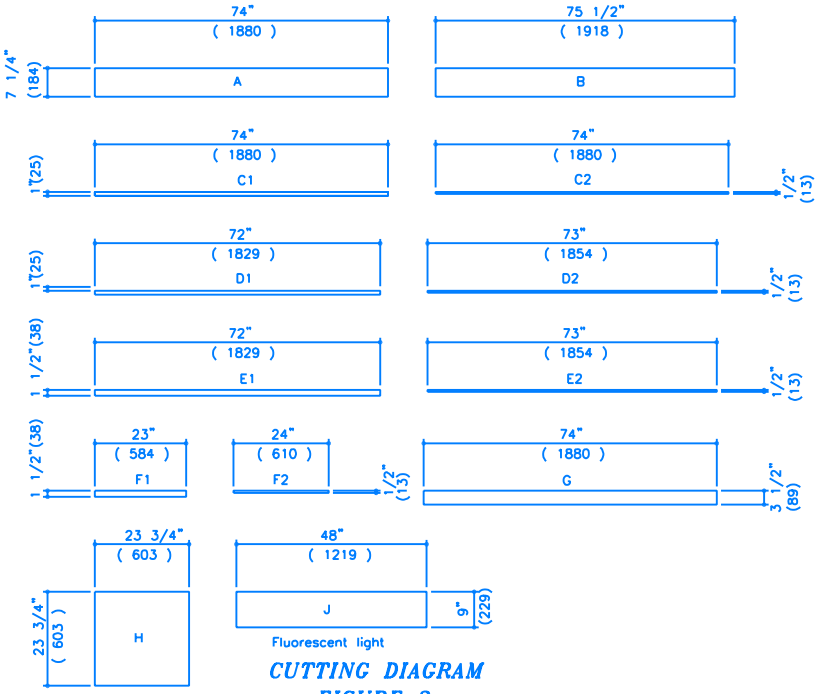
COMPONENT D
FIGURE 6



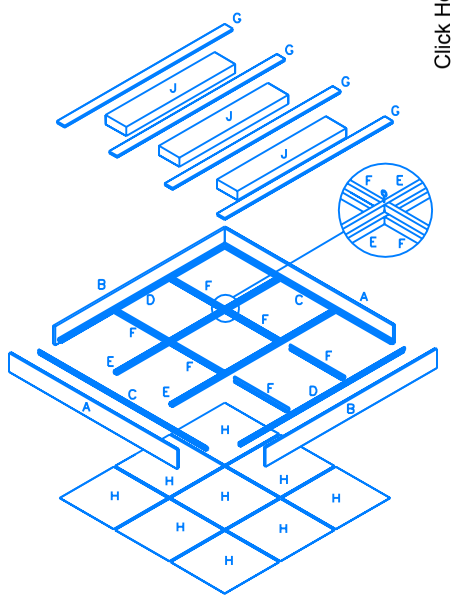
COMPONENT E
FIGURE 7



COMPONENT
FIGURE 8



CUTTING DIAGRAM
FIGURE 2



EXPLODED VIEW
FIGURE 9

Click Here for more general construction tips:
http://17b264yc7d54vvd-21772czmcb.hop.clickbank.net/

778

SUNSHINE CEILING – Project #114

MATERIALS LIST (75-1/2" X 75-1/2")

- Six 1"x4"x7' (3/4"x3-1/2"x7") softwood
- Two 1"x6"x7' (3/4"x5-1/2"x7") hardwood
- Four 1"x8"x7' (3/4"x7-1/2"x7") hardwood
- Eight 3/8" diameter wood buttons
- Approx. 1/2 lb. 3/4" finish nails
- Approx. 1/2 lb. 1-1/4" finishing nails
- Approx. Ten 1-1/2" #8 flathead screws
- Approx. 1/2 lb. 1" finishing nails

MATERIALS LIST (75-1/2" X 75-1/2")

- Approx. Twenty Four 3" #8 flathead screws
- Nine 23-3/4"x23-3/4"x1/8" pieces acrylic
- Stain, oil, varnish or glossy white paint
- Three 4' fluorescent fixtures
- Sandpaper
- Carpenters glue
- Eight eye screws
- Twenty 1-1/2"x1-1/2" metal angle brackets

4) Fill exposed nail and screw holes, with filler mixed with stain to match dry stained project, or colored putty and sand entire project. Apply final finish using manufacturer's instructions. You may wish to paint the inside faces of pieces A and B white in order to reflect more light.

5) Locate where sunshine ceiling is to hang, marking corner locations of sunshine ceiling on existing ceiling. Locate rafters in ceiling. Position sunshine ceiling so pieces G run perpendicular to rafters (Fig 10). Mount ceiling assembly to rafters by screwing through pieces G into rafters using sixteen 3" #8 flathead screws, four in each piece G. Be careful to avoid screwing into concealed electrical wire which might be in existing ceiling. Install eye screws in pieces G directly above the eye-hooks previously installed in pieces E2. Connect the eye screws with light wire to increase the support of the ceiling.

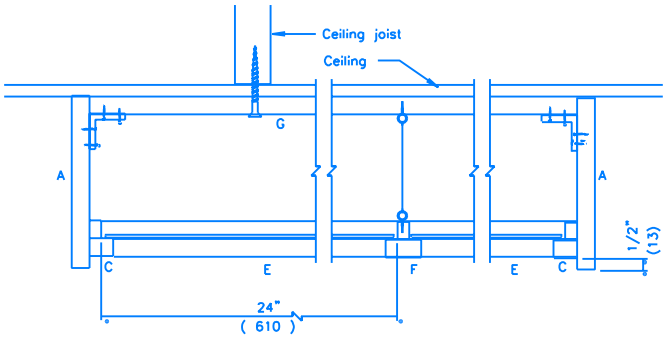
6) Have a licensed electrician mount the fluorescent fixtures (pieces J) between pieces G.

7) Starting at one corner insert an acrylic piece H into the grid and slide an F assembly under it to hold it in place. Ensure that the acrylic fits onto the lip of the assemblies. Continue placing acrylics and F pieces until you have one acrylic piece left. Insert the final piece at an angle and lower it into place. Reverse this procedure to change fluorescent tubes.

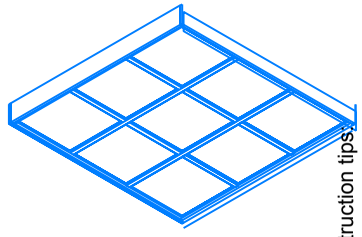
On materials:

Use only top quality material for this project. We suggest wood to match your decor, oak or mahogany are excellent choices although cedar or fir could be used.

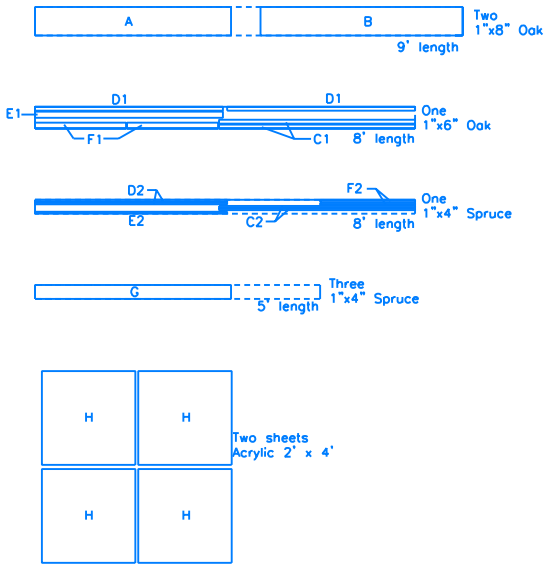
51" X 51" SUNSHINE CEILING



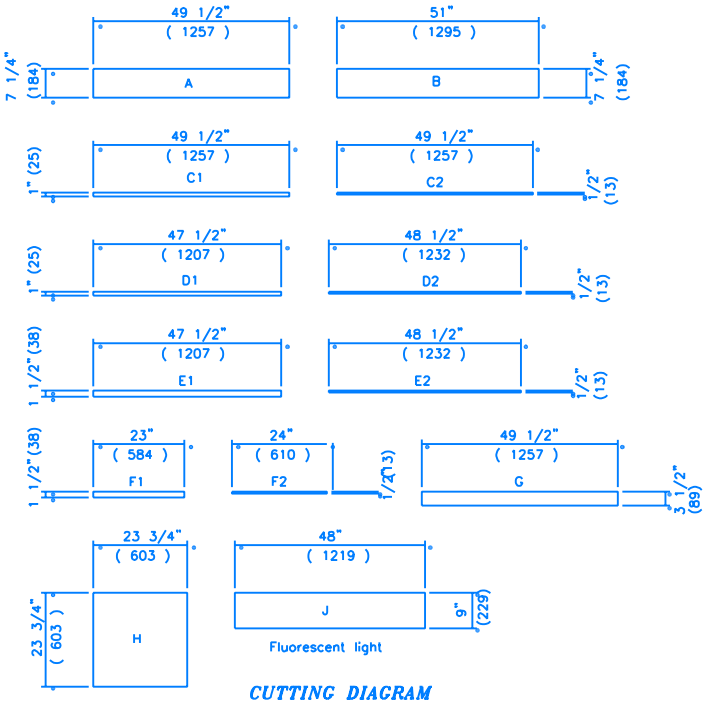
SECTION
FIGURE 10



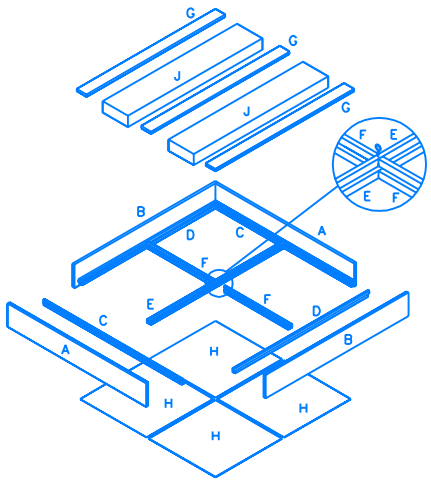
FINISHED PROJECT



MATERIALS LAYOUT
FIGURE 1



CUTTING DIAGRAM
FIGURE 2



EXPLODED VIEW
FIGURE 9

Note:

51" Ceiling is built the same way as the 75 1/2" ceiling. Merely substitute dimensions from cutting diagram and materials layout

Click Here for more general construction tips!
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

MATERIALS LIST (51" X 51")

- One 1"x4"x8' (3/4"x3-1/2"x8') softwood
- Three 1"x4"x5' (3/4"x3-1/2"x5') softwood
- One 1"x6"x8' (3/4"x5-1/2"x8') hardwood
- Two 1"x8"x9' (3/4"x7-1/2"x9') hardwood
- Approx. 1/2 lb. 1" finishing nails
- Approx. 1/2 lb. 1-1/4" finishing nails
- Approx. 1/2 lb. 1-1/2" finishing nails
- Approx. Thirty 3/4" #8 flathead screws
- Approx. Ten 1-1/2" #8 flathead screws

MATERIALS LIST (51" X 51")

- Approx. Twenty 3" #8 flathead screws
- Four 23-3/4"x23-3/4"x1/8" pieces acrylic
- Stain, oil, varnish or glossy white paint
- Two 4' fluorescent fixtures
- Wood filler
- Sandpaper
- Carpenters glue
- Four eye screws

TOOLS

- Screwdriver
- Table Saw
- Drill
- 1/16", 1/8", 3/8" bit
- Square

TOOLS

- Brushes for finish
- Pencil
- Measuring tape
- Hammer

Three layer Felt Roofing using cold applied adhesive

Useful tips - *Skill level* - *Safety* - *Felt Roofing Materials* - *Tools and Equipment*

Laying a felt roof is within the capabilities of most diy people providing that the process is understood and the job is not rushed. Check out the 'skill level' (above).

The sequence of laying a felt roof is:

- Preparing the roof.
- Laying the first, nailed, layer of Underlay felt. This layer is not bonded to the decking so that the decking can move without damaging the felt roof.
- Laying the second, bonded, layer of Underlay felt.
- Installing any gutter drips.
- Laying the top bonded layer of Top Sheet felt.
- Installing any verge edge and edging to a vertical wall and flashing.
- The finishing touches.

Possibly the biggest challenge to felt roof construction are the edges, three possible edge situations normally arise:

1. Where the edge of the felt drains into a gutter. There will generally be at least one edge of the roof like this - see edge detail 1.
2. Where the edge of the roof does not feed into a gutter and does not abut a higher, vertical wall - these are referred to as 'verge drips'. These edges are built up using a triangular fillet of timber and a higher fascia board with a felt lip overhanging to prevent any rain water from going over the edge - see edge detail 2.
3. Where the roof butts upto a vertical wall. In this case a triangular fillet of timber is fitted along the join of the roof/wall to allow the felt to be run up the wall, with the top of the felt being covered by flashing - see edge detail 3.

Two basic types of roofing felt material are required:

- Underlay - this is usually supplied sand coated (to prevent the layers bonding together within the roll during storage), this should be used for all layers except the top layer.
- Top Sheet - the finish, one side is plain for bonding to the underlayer, the other side normally has some form of protection finish, mineral chippings or some form of grit.

Although these are the two basic types of felt, there are numerous different specifications available for each type - these provide different types of material/finish/ thickness - normally quoted as weight per square metre.

Light weight shed roofing felt is not suitable for flat roof construction.

Preparation

The underlying deck must be constructed of moisture tolerant materials such as 18mm WBP plywood (or suitable Chipboard/Stirling Board) on treated timber joists.

New Roofs: Make sure the roof is clean, dry and that all nail heads are flush with the deck.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Existing Roofs: Remove all existing felt, nails and adhesive - make sure that the deck is sound, dry and free from projections (such as nail heads or split wood where old nails have been pulled out). If the deck is wet or rotten, allow it to dry out and repair as appropriate.

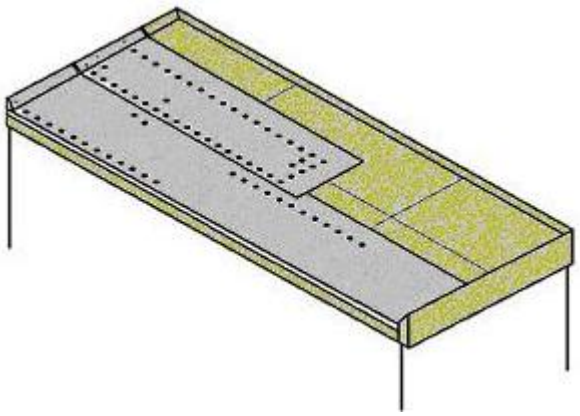
Before starting to lay the felt over the main roof deck, consider the arrangement which you will require for the edges, these generally take a disproportionate amount of time as they can be fiddly. Fix the edging timber as appropriate:

- Triangular fillet for upstands.
- Triangular fillet with raised fascia and wooden batten for edge verges.
- Wooden batten for gutter drips.

If there will be a need to chip out mortar or similar work associated with the edging, carryout this work before laying any felt and clean away all debris from the deck.

Professionals will not normally remove any guttering from around the roof; however this is not a 'hard and fast' rule - it can often be easier in the long run to remove the guttering if it can be easily removed/replaced.

Laying the first layer of felt



The first layer of felt is Underlay quality and must be nailed to the wooden decking, not bonded with adhesive. The wood will move with changes in temperature/moisture or when it is walked upon.

Ensure that the decking is free of any debris. Ensure that your shoes do not have any sharp projection on the sole; you'll need to walk on the laid felt and you don't want to damage the laid felt.

Starting at the lowest edge of the roof, roll out the Underlay at right angles to the direction of the full. Align, measure and trim to size (to trim the felt, mark the length by a nick in the edge of the roll, place the cutting board under the felt and using a straight edge, cut across the width of the roll with a sharp knife).

Make sure that the felt is correctly aligned and flat. Then starting at the centre of the sheet and working towards the edge and end of one half, randomly nail using large head galvanised clout nails at about 150mm (6 inch) centres **but do not put the nails along the edge which will be overlapped by the second strip**. As you work away from the centre, 'spread' the felt away so that it is flat against the decking. Repeat this on the other half of the sheet.

When the first run is complete, roll out the felt and measure/ cut for the second strip. Lay it out alongside the completed strip overlapping the second strip about 50mm (2 inch) on top of the first strip. Nail the second run of felt in the same manner as the first; starting at the middle/centre and working towards the edge/end. Where the edge of the strip overlaps onto the first run, nail through both sheets at 50mm (2 inch) centres.

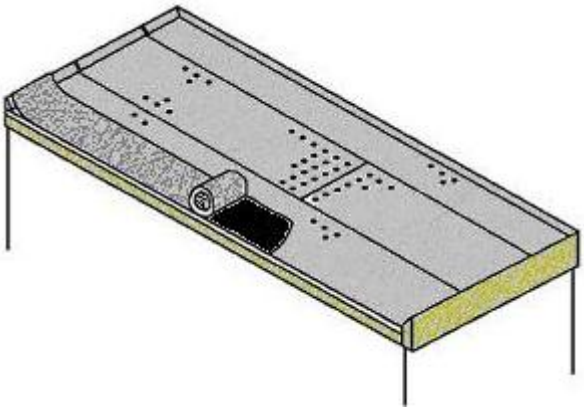
If (when) you need to join strips along a run, allow a 100mm (4 inch) overlap and nail across the overlap at 50mm (2 inch) centres. Ensure that where joints are required along adjacent runs, that the joints do no coincide.

Lay and fix further strips of underlay using the same technique until all the roof is covered. For the final run across the roof, the width of the felt will probably need to be cut to size, measure

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

at both ends and in the middle to ensure that any irregularities of the roof are taken into account. Measure and cut the felt before starting to fix the sheet.

Laying the second sheet of felt



The second layer is another layer of Underlay felt but this one is bonded by adhesive to the first nailed layer.

It is essential that the joins do not coincide with those of the first layer. This can be avoided by starting the second layer with a half width roll, or if necessary a full width sheet can be cut down to suit after it has been cut to length.

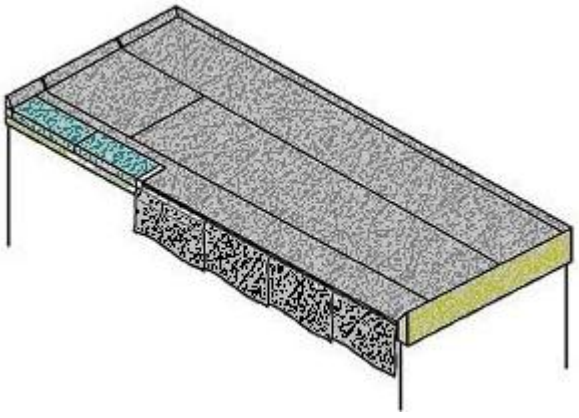
Roll out the felt; align, measure and cut it to length. Roll back one half of the length of the sheet to the centre of the roof, taking care to maintain the sheet alignment.

Following the manufacturers instructions, apply the adhesive to the first nailed layer. Coat an area slightly wider than the width of the felt being laid.

After the required time has elapsed (as specified by the adhesive manufacturers); carefully roll the felt into the adhesive, ensure that no air is trapped and that the surface of the felt is smooth - pay special attention to securing the edges of the felt. Roll out about 1 metre at a time so that you have a limited area to concentrate upon. When the first half of the sheet has been completed, roll back the other half of the run to the centre of the roof and repeat. **Do not use any nails.**

Continue this process with successive strips. For the second and successive strips, overlap them by about 50mm (2 inch) over the strip previously laid, apply adhesive over the top of the strip already laid to secure this overlap.

Make the gutter drips (Welted drip)

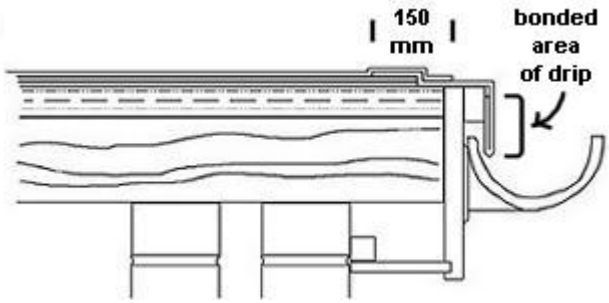


The gutter drips are formed to finish on the top of the first bonded layer of felt with the inner edge at least 175mm (7 inch) from the edge.

To form the welted drip (see edge detail below) cut suitable lengths (check - but usually about 350mm (14 inch)) of Top Sheet, nail each length to the timber batten along the edge of the roof with the felt underside facing out and with the sheet hanging down - ensure that the 'clean' area along the edge of the top sheet line up with the edge of the adjacent sheet. Dress the sheet down to below the timber batten, overhanging the gutter and form a fold back upto the roof line and then fold the remainder back onto the roof. Bond the drip (the fold from the nails down and back up) together and return the sheet to the roof deck bonding a 175mm length on top of the underlay. The Top Sheet will overlap the underlayer finishing about 25mm from the edge.

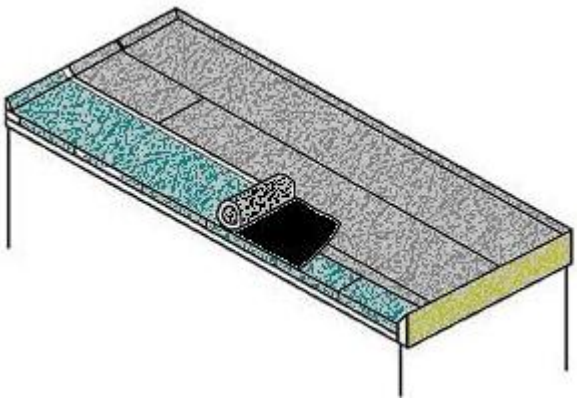
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

This detail must be formed before the Top Sheet is applied. Ensure that the fascia board is attached level to the roof deck before fixing a wooden batten of suitable size (50 x 25mm minimum) flush to the fascia board.



Laying the top sheet of felt.

Apply the Top sheet using the same method of bonding with adhesive as used for the second underlay layer. Lay the first strip at the bottom of the roof fall with the selvedge (the edge of the Top Sheet which is mineral free) away from the roof edge - the second strip will overlap onto this.



Brush away any loose mineral chippings from the top of the gutter drips. Apply the top sheet over the gutter drip pieces so that the top sheet finished about 25mm (1 inch) from the edge of the roof.

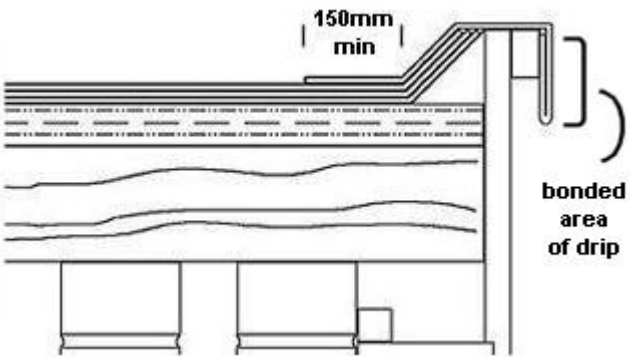
Remember to apply adhesive to the selvedge to bond the overlap of the second and successive strips.

Repeat until the roof area is covered, you may need to trim the final length of felt.

Install any verge edge and edging to a vertical wall and flashing

Install the finishing to all remaining edges as necessary.

Edge detail 2 - Welted drip to verge.



Verges are designed to stop rain driving over the edge, and are formed after the Top Sheet has been applied. The fascia board upstands the roof deck by 50mm, incorporating a 50 x 50mm triangular fillet, between the junction of the deck and the fascia board.

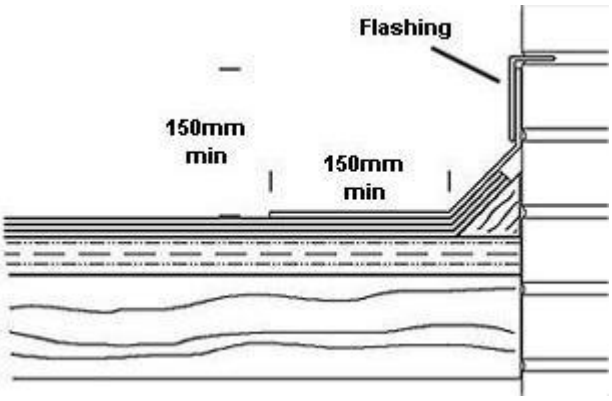
To form the welted drip (see edge detail above/right) cut suitable lengths (check - but usually about 200mm (8 inch)) of Top Sheet, nail each length to the timber batten along the edge of the roof with the felt underside facing out and with the sheet hanging down away from the roof - ensure that the 'clean' area along the edge of the top sheet line up with the edge of the adjacent sheet. Dress the sheet down to below the timber

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

batten and form a fold back upto the top of the fascia and then fold the remainder back onto the roof and down over the fillet. Bond the drip (the fold from the nails down and back up) together and return the sheet to the roof deck bonding at least 150mm on top of the Top Sheet.

Edge detail 3 - Vertical edge.

Formed where a roof buts upto a higher wall.



As this is not a free surface, there is no need for a fascia board, the provision of a 50 x 50mm triangular fillet at the junction of the upstand and the roof deck is required to smooth the transition. The third layer of felt finishes at the top of the triangular fillet. An additional length of Top Sheet is then used to form an overlapping detail.

These pieces of Top sheet must be long enough to form a bonded 150mm (6 inch) upstand from roof deck and overlap the main area by 150mm. Apply adhesive to both the upstand and the felt before laying.

The upstand is finished by the application of suitable flashing. Clear out 25mm of mortar before you start laying any felt, after the upstand sheet has been laid feed in the edge of the flashing and repoint. Ensure that there is a good overlap between the flashing and the felt upstand.

The finishing touches

Additional sealing

Looking at the edges of a finished felt roof, may shows apparent gaps in the seams especially where the top layer is applied over a mineral layer - mainly where the edging has been installed. If you have followed the instructions for the adhesive and these guide notes, the seam should stand up to the weather, however, if you need 'that little bit more confidence' in your work, it does not do any harm to go around all the seams applying a little extra adhesive externally.

Solar paint

Silver Solar paint can be applied once the roof has been completed, this reflects most of the solar energy so the felt does not get so hot (so it should have a longer life). Follow the instructions supplied by the manufacturers of the paint. Only paint the roof area, do not paint the drips overhanging the edge.

Useful tips

- Do not lay felt in wet or very cold conditions.
- Unroll the felt at least 30 minutes before you to use it.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

- Do not try to economise by using the wrong nails to secure the first layer - only use extra large headed clout nail ensuring that they do not protrude below the deck.
- When joining lengths of felt allow a 100/150mm (4 to 6 inch) overlap.
- A broom is useful to press down the felt and smooth out air bubbles.
- Ensure that the joins in any layer do not coincide with the joins in the previous layer.
- On upstands, apply adhesive to both the felt and surface of the upstand.
- Do not cut the felt straight onto the roof or already laid felt, always using a cutting board.

Skill level

Attention to detail and an ability to measure are essential. Laying a felt roof is hard manual work which once started needs to be finished, you cannot leave it halfway through to come back to in a couple of weeks. The best time to lay a felt roof using cold applied adhesive is when the weather is warm, but this means that working on a flat roof can be exhausting work with the sun's heat and the heat reflected from the felt already laid.

The rolls of felt are quite heavy and, to avoid damage, must be handled with care. Generally two people will be required to move the rolls of felt up onto the roof. The number of people required to lay the roof will depend upon the size of it; more hands may make light work but only if the people do not get in the way of each other and if each can be doing different things at the same time.

Safety

Strong gloves will protect your hands when handling the rolls of felt.

Take care with the cold applied roofing felt adhesive - always follow the manufacturer's advice on safety and application.

Wear the appropriate clothing - old clothes are highly recommended as you will not be able to do the job without getting some adhesive on them and it might be easier to throw the clothes away after the job rather than trying to clean them.

Materials

- Underlay felt
- Top Felt, (NEVER store rolls of felt laying down, they must always be stored standing-up, for rolls of Top Felt with the 'clean' overlap edge at the top)
- large head clout nails (see tips)
- cold applied roofing felt adhesive
- Solar paint (if required)

Tools and equipment

- hammer
- tape measure
- strong cutting knife
- cutting board
- straight edge
- broom
- brush (to spread the adhesive)

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

How to take care of timber decks, cladding, garden sheds, furniture etc – the proper way.

Where do I turn for proper advice?

There are scores of products on the market for protecting and beautifying timber etc, some good and some not so good. There are equally as many variations in advice offered, some good and unfortunately lots not so good.

Every day I come across the after-effects of all such products and bad advice out there in the course of my work as a wood care specialist / troubleshooter. It is remarkable how often I come across people who have been mislead, badly advised, or simply picked up the first tin of something they might have seen on the T V, even if it was totally inappropriate for their particular needs. It is very hard to find dedicated store staff who make an effort to acquire a proper data bank of knowledge in whatever field they are involved in no matter what that is! From curtains, to electronic gadgets, to woodcare protection etc. When you do come across one of those 'walking treasures' don't you just feel so glad you did? Yes, they are out there but we could do with seeing more of them.

Anyway, back to timber, taking care of it and keeping it looking at it's very best for many years.

Before one can advise he / she must learn first, both the theory and the practical real-life stuff.
During the last ten years or so with IGOE INTERNATIONAL LTD, I've invested most of my working time learning from several of the leading wood care experts from Scandinavia, U.S.A, and elsewhere, while dealing hands-on with numerous on-site cock-ups, on all kinds of wooden structures from decks, marinas, yachts, sailing ships, cladding, hardwood garden furniture, fencing, log cabins etc, the results of poor advice and so on and so on.
Here are my findings and some practical, sound advice which, hopefully will save you and or, your friends or relatives from one of the aforementioned cock-ups and their associated cost in money terms as well as all the added frustration and stress.

My top of the pile of 'what's out there' in woodcare would have to be a bunch of wood care products from the Owatrol stable. Underdogs to some big brand names they may be, but in my opinion, they do the business second to none. A division of The Flood Company, Ohio, U.S.A., one of America's leading deck / timber-care product manufacturers, Owatrol International covers a complete line of highest quality timber care products.

They are not the cheapest mind you, but to my mind they would safely qualify as the best, hard earned money can buy, and given the fact that your beautiful timber doesn't come cheap, why skimp on a few coppers for the sake of getting that job done right first time?

From my travels, I do know, that more and more quality deck installers, both in the U K & Ireland are recommending this same system I am about to tell you about here today. There is a complete family of products to suit the different situations, needs and tastes.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Here are some of the main issues to look at before deciding what to do with your exterior wood whether it's new, old, treated or untreated etc:

1. **New wood – What should be done with it?**
2. **What do you want your wood to look like when you're done?**
3. **Has it been treated by you or by a previous owner before?**
4. **Was that wood ever treated?**

1. New Wood – what should be done with it?

Lets take it step by step and start at the beginning with new wood.
FACT: The first year is the worst year for all new exposed timber!

Irrespective of whether your new deck is pressure treated or not, it is still possible that the new wood will crack, split, warp or cup.
Pressure treating is basically designed to prevent ROT and DECAY, not splitting etc.

New deck timber frequently has mill glaze (a shiny finish caused by a combination of timber planing, wood oils, resins etc during manufacture) which prevents the proper penetration of practically any finish whatsoever. The net effect of this mill glaze etc is that the wood's pores have been slammed shut by the planer blades and may take several months before they become open again properly, or open enough to allow the wood be treated properly. The one thing that has a very high success rate of getting into this very same wood is good old rainwater! After lying for some time on the wood it will get in to the timber.

In other words, you are wasting your money applying any regular off-the-shelf finish like stains, cheap deck oils etc, because they probably will not penetrate properly and will peel off or wear off in no time. Some mis-informed people advise that you should leave your wood to weather with nothing on it for several months and not to apply anything. That advice is both right and wrong. It is right to some extent because virtually no treatment gets into new wood's pores – hence the thinking is, wait until the pores open fully.
That advice is wrong because, meanwhile water WILL get into the wood and will do damage such as splitting, cupping, warping etc. The Western Red Cedar Association in North America says new cedar etc should not be left unprotected for this very reason.

New Wood "The Myth":
"This wood is pressure treated and does not need to be looked after"
This kind of comment had been bandied about by some well meaning, but seriously mis-informed timber sellers or deck installers. The fact is, pressure treatment basically takes care of wood rot related issues and does not deal with water and sun related problems which are the biggest 'visible' problems you will probably ever come across.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A good analogy would be the expensive paint job on a brand new car, doesn't it look great? Doesn't it need to be looked after, washed and polished from time to time to maintain it and keep it looking great? Leave it to the mercy of our weather, dirt etc and it won't stay looking good for long! The same applies to your new timber or wood (whichever you prefer to call it)… left to its own devices it will soon look like a pile of old pallets not to mention the damage done to its fibre structure!

Back to the new wood, and what to do with it.
Irrespective of whether it is pressure treated or not (pressure treated wood usually can be identified by a greenish tint) the new wood should be protected against damage and algae etc if you want it to last, look well, be most importantly -safe in the case of decking.

Owatrol do a product specifically designed to treat new wood, called **SEASONITE. SEASONITE,** a deep **penetrating** treatment, is applied as soon as possible after installing your deck, cladding, wooden garden furniture, shed or any other new outdoor timber structure. It is wetter than water, and gets into those tightly closed pores where very little else bar water will get in.

Seasonite's job is to allow the new wood 'weather' in a controlled fashion, i.e. it allows excess moisture escape GRADUALLY from the new wood over the course of six months or more, while at the same time preventing NEW moisture or water from getting into the wood.
Splitting and cracking etc, generally takes place during changes in weather conditions, from sun to rain to sun etc, which causes the damp wood to suddenly expand and then crack and so on.
Did you ever 'hear your deck creak' after a shower of rain followed by a bit of sun? Why does it do that? The wood absorbed the water and as soon as the rain stopped and the sun comes out, the sudden, dare I say it – heat, causes the wood to swell or expand, and that's when the damage is done, cracking, warping etc. Plain common sense. It's a real shame to see lovely planks of expensive wood with ugly big splits and cracks all over it.

SEASONITE is not a product designed to make a big impression on your visual senses, it's main job is just to protect your wood in it's first, and most vulnerable year, leaving it properly prepared for the next phase of protection where shade, colour etc comes in. Another huge benefit of Seasonite is that it contains a fungicide which helps prevent the growth of algae etc. (That's what causes decks to become slippery & possibly dangerous when wet).

2. What do you want your wood to look like when you're done?

(2a) That Silvery Greyed Look?

Depending on how you want your timber to look eventually, i.e. a continuation of that lovely just installed look, **or** what some people like, that silvery greyed look which is the way Cedar decking, cladding etc ends up if left untreated. If you want a silvery, weathered look, all you need to do is apply one coat of Seasonite every year or two. This is a very simple job and can be done in no time at all with a simple, pump type garden sprayer or even a roller or sweeping brush etc.

It is not a dirty job and anybody with the slightest DIY ability can do it easily. The Seasonite will prevent 'new' water / moisture from getting in, and keeps the wood inside in good condition while at the same time the outside weathers and takes on that weathered silvery look. So you get the look you want but without letting your timber go to rack and ruin.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

(2 b) The Natural New Wood Look or different shades? (Most popular)

If your preference is for that beautiful, natural, recently sawn-wood look I would suggest the following course of action. After seasoning has taken place, ideally having been treated with Seasonite when installed, & several months (6+) of controlled weathering has taken place, your deck is now ready for the next phase of treatment.

Clean & restore the original colour

Clean it.
Even if you used Seasonite as mentioned above, when the wood was new, it will fade and turn grey as well as catch some dirt, bird droppings, water stains etc. So before you do anything, the deck, or whatever it is, must be cleaned, and the original natural colour of the wood completely restored with **Net-Trol**, a revolutionary and environmentally safe product. It will also remove any remaining Seasonite from the wood, necessary before the next phase of the job.
Here's how.
All you've got to do is wet the wood thoroughly, apply a mixture of one part Net-Trol to about three parts water (the less water the stronger the mix) and apply with anything like a clean sweeping brush, or whatever is handy. After about 10 minutes, it is a good idea to slightly agitate the applied cleaner with something like a stiff bristled nylon brush just to help 'work it in' to the pores etc. After about 30 minutes rinse off thoroughly with clean water. If you're doing this job on a dry sunny day and the Net-Trol cleaning treatment is drying out prematurely, just moisten the area with a fine mist from a garden hose to keep it wet, because the cleaning action stops working if it dries out. If the wood has been really dirty or very badly faded, you may need to repeat the above exercise. (Alternatively, see info on the very powerful PrepDeck below) You will also see a vast difference in the look of the wood and the original colour will come right back. When the cleaned wood dries out it will brighten to some degree but it will look very much like it did when new.

Now, to beautify and protect your wood…Oil it.
I recommend that you wait for at least three days with good drying conditions after the above cleaning has been done before attempting to apply any protective coat. Ideally, 3 to 4 good drying days should allow your wood to be fully dried out again making it receptive for further treatment.

This easy job is done using a very easy to use product called **TEXTROL** and anybody reasonably competent with his or her hands can do it. (Take all the usual precautions like wearing rubber gloves etc)

Textrol is an anti-UV, deep-penetrating clear oil, which goes into the wood rather than on it, leaving a nice matte finish.
There are two ready-tinted versions of Textrol called Golden Oak and Rustic Oak. For the more adventurous, the Textrol clear can be tinted (by the paint store) in a nice selection of semi-transparent colours from cool blues to warm browns using the Textrol as either a yellow or clear base.

How to apply: The very first application (**only**) should be two coats, one soon after the other. Do your project in manageable sections, i.e. you must go back and apply your second coat before the first coat 'sets up' Depending on the porosity of the wood, your first coat should be absorbed in about half an hour or less. If you wait too long and the first coat sets up, your second coat will have difficulty getting in, which in turn means that the wood will not have had enough to 'drink'. The knock-on effect of this is that the protection will only last half as long as it should. If you are working

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

on a deck and some ‘ponding’ occurs from excess Textrol, just wipe it off with a clean cloth to prevent ‘skinning’. (See TIP re doing Decks)
Textrol also contains a fungicide which keeps algae etc at bay, and most importantly, in the case of a deck, helps keep it from becoming slippery when wet. Textrol will not peel or lift and can be recoated without sanding which is a great advantage. If you have a deck that is made of the less expensive pressure treated pine or spruce etc (often grooved), the Textrol Rustic Oak will make the deck look more like a teak hardwood. It all depends on which wood you have and what your preference is.
Cedar looks beautiful with the Textrol clear, it enhances the grain and has a lovely natural look. It would be best described as looking like clean, new, wet cedar. The Golden Oak would darken it a little and you may like that look also.
Another point to consider is that the two tinted versions will last longer than the clear because they have more pigment in them and they resist the UV rays better.
Textrol (clear) by the way, can last, when properly applied, from1.5 to 3 years depending on its position relative to the sun. The less exposed to direct sunlight the longer it lasts and visa versa.
Textrol is water repellent (allows wood to breathe) and ideally should be recoated with just one coat without sanding every twelve to eighteen months, depending on sun exposure. As with Seasonite, Textrol is very easy to apply, if you have a pump sprayer, use that, or you could use a clean sweeping brush, paintbrush or roller. One point to remember is, as soon as your wood starts to get grey looking it’s telling you it needs some more oiling with Textrol.

NOTE: We recently introduced Tropitech, a new, hard wearing, long lasting, acrylic wood finish also from the same suppliers Owatrol – also worth a look, check out the website page http://igoe.ie/products/needalonglasting.htm meanwhile for more information. I will be adding pictures and more on Tropitech soon.

3. Has it been treated by you or by a previous owner before?

You need to find out what you are dealing with before you can effectively restore or treat it. Perhaps your deck or exterior wood has been treated before by you or a contractor and you cannot remember with what, perhaps the wood was messed up by the application of inappropriate coatings, or they were applied in the wrong way? Or maybe you’ve recently moved into this house and the exterior woodwork needs doing but you don’t have a clue what to do to restore it? Important that you deal with this.

Start at the beginning and do a simple test on various parts of the wood.
Wait until the wood is dry; apply a few drops of water here and there (gently). If the water droplet soaks into the wood after about 5 to 10 minutes, (might be a little longer in hardwoods) that tells you that your wood is porous and that it can be treated after a relatively easy cleaning with Net-Trol. **(See Clean & Restore above)** On the other hand if the water droplet stays there and does not soak in, but rather sits there on the wood, it tells you that there is something there like a previous coating (which may or may not be clearly visible) of some sort, and it must be removed properly before doing anything else.

This can be achieved with a very powerful stripper cleaner like the **PrepDeck**. This product can be used diluted with water at a ratio of 1 part PrepDeck and 10 parts water for wood that is not excessively dirty looking, or you could go all the way up to neat Prepdeck for disaster situations, such as heavily coated with old stains, coatings etc. It may be useful to do a few tests using different mix ratios to get a feel for might work best for your situation.
Work from weak towards strong. Apply PrepDeck on to dry wood.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Next, a few words of caution re PrepDeck:

- Shake very well before use.
- Wear protective gloves, eye protection etc and cover anything you don't want splashed or interfered with including shrubs etc.
- Decks can be very slippery while being treated with PrepDeck so take extreme care.
- Do not let the PrepDeck dry out while it is working, keep moist.
- On vertical surfaces, it is better to work from the bottom up to minimise streaking etc.
- PrepDeck, because it is so powerful can, and will darken some woods during the course of the cleaning action. Don't worry though, you can restore the natural colour of the darkened wood again by treating it with Net-Trol diluted about 4 parts water to 1 part Net-Trol. In any event, whether the wood darkens or not, the PrepDeck will remove the toughest of old stains, oils etc and bring the wood back to its original look.
- All wood cleaned with PrepDeck must be neutralised immediately afterwards while still wet with Net-Trol, diluted about 3 or 4 to one before a final thorough rinsing off with clean water. You could use a garden hose or even a power washer at about 500psi (low pressure) and make sure, if you are using a power washer that you run with the wood grain, not against it which might raise the wood fibres and or even cause splintering.

Working time for PrepDeck would be around 20 to 30 minutes for stubborn stains, oils etc, and for less challenging cleaning jobs it can be diluted by as much as 20 to 1 and take about 10 to 15 minutes to work.
NOTE: In <u>all</u> cases, after you use PrepDeck, the wood <u>must</u> be neutralised with diluted Net-Trol immediately afterwards while the wood is still wet.
Do not, under any circumstances, apply Textrol on to any wood that has been cleaned with PrepDeck unless the wood has been neutralised with diluted Net-Trol (see above) prior to drying off.

Now, keep that newly cleaned and restored wood looking great!

Wait for at least three or four good drying days or even a little longer, for your wood to dry out completely and then you can treat it with any of your TEXTROL options as mentioned in **2 b** above.

5. Was the wood ever treated?

If you know that your wood has never treated by you or anybody else, even if it was pressure treated, it can easily be brought back to life and look great again.
If it is not too severely stained or dirty you will get a very good result using Net-Trol **(**See **Clean & restore the original colour** above**).**

If the wood is heavily stained, has all sorts of grime and dirt on it; you may need the more powerful PrepDeck to get the stubborn stuff off. See **3** above (Followed by Net-Trol – see **3** above)

My advice is try the Net-Trol first (as per above instructions) even if you have to use it almost neat. Do a few simple tests using different strengths of Net-Trol diluted with water. Obviously the less Net-Trol you get away with using, the better it is for you! You may need to do it twice, but that will be determined by your tests.
NOTE: You will not see the real result of your test until the wood has dried out to a reasonable extent, so just go off and do something else meanwhile.

When you are happy that you have got your wood as clean as possible, wait until it has fully dried out and then you can apply the two coats of TEXTROL as per **2** above.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

DECK TIPS

- On a new deck, it is advisable to put planter boxes, etc into waterproof trays and if possible, raised off the surface of the deck. Move them around from time to time. This will prevent “rings” from forming and allow the deck to breathe uniformly.

- Deck furniture such as chairs, umbrella base etc should have rubber or plastic cups fitted where possible.

- Bar B Que’s should have some form of protection on the deck floor to prevent serious burn marks or bad stains. Try a small sheet of aluminium or steel, about one meter square, (available from a good DIY store or Builders merchant) which can be removed after cooking. This can possibly be stored away underneath the deck.

- If you have rusting nail heads, hanging flower brackets etc leaving rust stains on your wood, they can be cleaned off with the Net-Trol product mentioned above. When dried out, apply some Owatrol Oil directly to the rusted nail or screw heads etc to seal them up and prevent the rust reforming again for many years.

- When oiling a deck with TEXTROL, work from the furthest point backwards to avoid having to walk over an area you’ve just done. Ideally, Textrol the wood by treating about 6 planks, or whatever you at a time from one end to the other. This means, by the time you

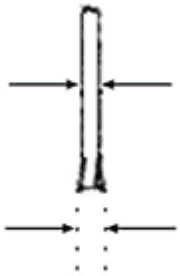
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

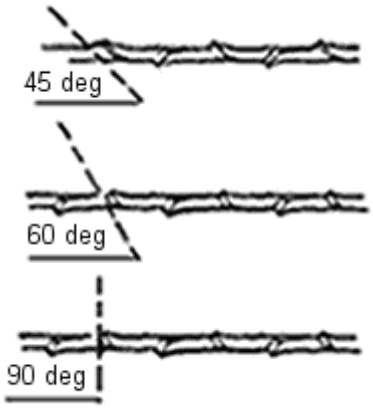
Timber cutting hand saws

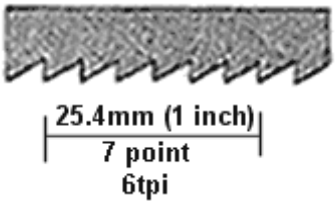
saw terminology - handsaw - flooring saw - tenon - many blades - padsaw
bow saw - coping - log - two-man crosscut

Although power saws are now widely available, there is still a place for a range of handsaws in the tool kit of the do it yourself handyman, the model-maker and professional carpenter. Sometimes the work site does not have electricity or a small job does not justify running an extension lead for the connection. At other times, the often better control of a handsaw makes its choice over a machine justified. The following describes some of the more common handsaws available to the diy person.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





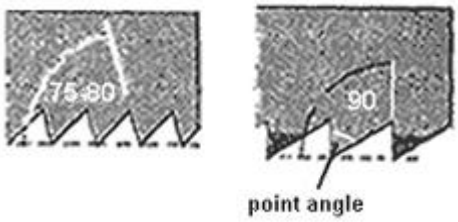


General Saw terminology

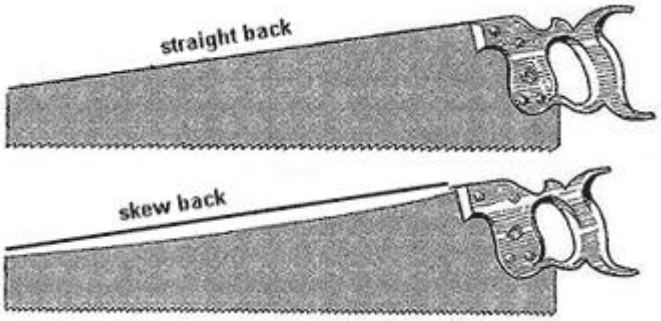
Measuring teeth: The teeth on saws are classified by a number which represents the number of teeth points along 25.4mm (1 inch) of the cutting edge, including those at each end. The number is referred to as so many points, the point size is one greater than the teeth per inch (tpi). The teeth of ripsaws are relatively large, usually between four to seven points. The larger tenon saws, say 30 to 40cm (12 in to 16 in), usually have teeth of 12 to 14 points. Smaller saws for general bench work also may have 14 points, but the smaller saws intended purely for dovetailing may have teeth as fine as 22 or 24 points. Saws with fine teeth should be used only for fine work.

The set of the teeth: Most saws have their teeth "set"; that is, the teeth are bent outwards slightly in alternate directions so that they make a cut slightly wider than the saw blade thickness, this gives a clearance so that the main part of the blade is clear of the sides of the cut. The set should not be excessive, as it will only mean that wood is being removed unnecessarily, resulting in increased resistance in cutting and more sweat. To reduce the necessity for the amount of set, some handsaw blades are taper ground, (that is the blade is ground thinner behind the teeth), thus providing additional clearance with only a small degree of set required. Saws used for green wood (i.e. freshly cut timber) have increased set as the sawdust from green timber is inclined to cling to the blade.

The front angle of the teeth: The front of the teeth on some saws are straight across at right angles to the blade, so they present the wood with a series of chisel-like edges, this tends to give a rough finish. Other saws have teeth bevel-filed at an angle instead of being at 90 deg., the idea being that the series of sharp corners severs the grain at each side, the waste wood between crumbling away as sawdust.



The angle at which the teeth are bevelled vary from about 45 (for softwood) to 60 deg (for hardwood).

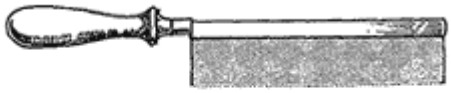


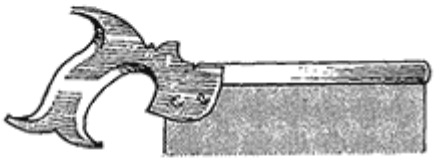
The pitch angle of the teeth: The pitch angle of the teeth to the nominal root line of the teeth, associated with this is the point angle - the combination of these two angles determine the slope of the back of the teeth. A large number of modern handsaws have hardened teeth to prolong their useful life; these saws are, to an extent, 'throwaway' tools as they cannot be easily sharpened when they become blunt.

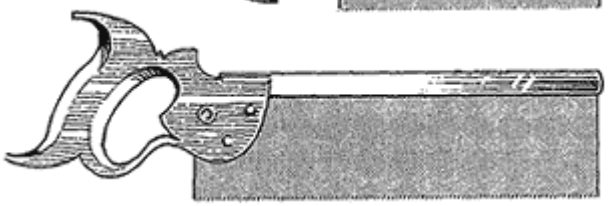
Handsaws. This general term includes several types, such as the rip, crosscut, and the panel saw. They all look basically the same and their purpose is the cutting of timber from boards, and sometimes making larger joints.

Ripsaw: The ripsaw is intended to cut along the grain. The front of the teeth are generally at right angles to the blade and pitched at between 85 and 90 degrees to the blade. Some

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



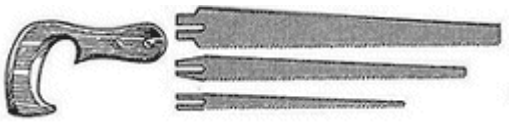




teeth;

(lower handle. larger the Today the

ripsaw have incremental this is where the teeth gradually becoming larger point numbers) towards the The theory being that the teeth come into operation at strongest part of the stroke. the DIY person seldom uses manual ripsaw as timber is



available commercially in the widths required, or power circular saws are available. For the odd occasions when it is required to rip out timber, a cross- cut saw which, although not quite so satisfactory, is quite adequate.
Lengths are taken along the run of the teeth from one end to the other, and are generally from 60 to 70cm (24 to 28 in).

Crosscut saws: These differ from ripsaws in that the teeth are bevel-filed at an angle instead of being at 90 deg. Another way in which the crosscut saw teeth differ is that they are pitched so that the front of the tooth makes an angle of 75 to 80 deg. with the line of the teeth. Whatever the pitch, all teeth are pointed at 60 deg. The size of teeth varies from 6 to 12 points, and lengths of saw from 55 to 70cm (22-28 in).

Panel saw: This is simply a small version of the crosscut saw, from 45 to 60cm (18 to 24 in), and with smaller teeth of 10-12 points. It is used for cutting thin wood and for the larger joints. Its teeth are pitched and bevelled as in the crosscut saw.

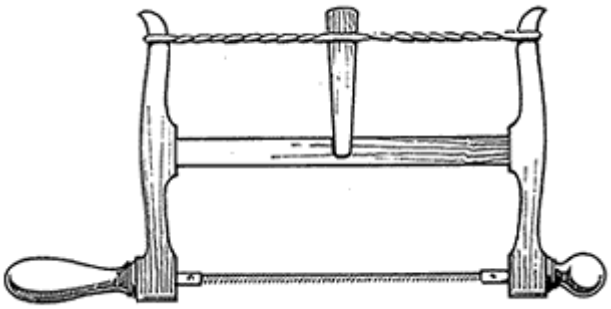
A feature common to all handsaws is tension. Without it the saw blade would be a flabby thing with no natural stiffness. A tensioned saw remains stiff when waved sideways. Handsaws are available with either straight-back or skewback. The straight back tend to have rather stiffer blades, but there is little difference in their use.

Flooring saw. These tend not to be found in the tool kit of most DIY people as it is somewhat of a specialist saw being used only to cut across floorboards so that they can be lifted. The edge is curved, enabling a cut to be made across a board at the centre of a joist. When the blade has penetrated, the straight part comes into use, the end of the saw being narrow enough to enable it to enter a short cut.

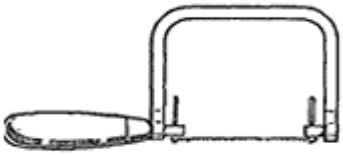
Tenon saw. The technical name for saws that are stiffened along the back of the blade, is Back Saws although they are generally referred to as Tenon Saws.
The length of blade can range from 20cm (8 in) up to 40cm (16 in), or even longer for special work. Teeth of Tenon Saws are usually pitched at 75 deg., and small ones are bevel sharpened at about 60 deg. because they have to cut across the grain as well as with it. When, however, a tenon saw is to be used solely for cutting tenons the teeth may be straight across at right angles because it always cuts along the grain and is therefore similar to a ripsaw. As most people cannot keep a saw specifically for cutting tenons, the teeth are generally bevel-sharpen. For fine work it is called a dovetail saw and may have very fine teeth-22 to 24 points.
Larger Tenon Saws invariably have closed handles, smaller ones (dovetail saw) usually have a' fist grip' handle - middle size saws tend to have 'pistol grip' handles.

Many blades - one handle. These have a number of interchangeable blades of which the largest is usually a pruning blade, and the others a compass blade, and a keyhole blade. The purpose of the last is obvious by its name, and the compass saw is used to cut curves on flat

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



again obvious by its name.



sheet, the purpose of the

pruning blade is

Padsaw. Also known as a keyhole saw. Although intended primarily for cutting the straight sides of a keyhole, it can be used for any internal cut, straight or curved. The blade is adjustable in its projection from the handle, the idea being to enable it to be given as little projection as is consistent with the required stroke. The saw necessarily relies upon the stiffness of the blade to prevent it from buckling, but buckling can easily happen because of the narrowness of the blade. The projection of the blade should always be kept to a minimum.

Bow saw. The Bow Saw is considered by many to be the most satisfactory saw for cutting shapes since the narrow blade negotiates curves easily, and is held in tension. Both the handle and knob (at the other end of the blade) can be turned so that a cut can be made more or less parallel to the required cut. Obviously the blade must be free of twist when in use. It is available with blade lengths of 25 to 40 cm (10 to 16 in). Generally both hands grips the one handle, hence the bulbous shape with narrow neck, but when thick wood has to be sawn it is helpful to have a person at each side, both sides of the wood having been marked. In this way it is much easier to keep the cut square to the sides of the timber.
The rivets holding the blade to the handle can be withdrawn so that the saw can be used for an internal cut, the blade being threaded through a hole drilled through the timber.

Coping saw. The Coping Saw is used for thinner wood and for fairly tight curves or shapes. By turning the handle the tension of the blade can be slackened or increased. The blade can be revolved through any angle convenient for sawing. Normally it cuts on the pull stroke, but there are occasions when it is better to reverse the blade so that it cuts on the push.

Log saw. The Log Saw is intended only for crosscutting logs, etc., and has a metal frame. The blade often has the lightning form of tooth shown and is fast cutting but leaves a ragged finish. This is unimportant for the purpose for which the saw is intended.

Two-man crosscut. This saw is intended for sawing through large logs, and various pattern teeth are used. Each tooth pattern is claimed to have its own particular advantages, however this is often up to personal preference. Holes in the ends of the blade enable the handles to be fitted. Lengths can be from about 120 to 240 cm (4 ft up to 8 ft).
Smaller versions of the saw used for the same purpose can be used by one person, but even these usually have rivet holes at the toe end of the blade so that a second handle can be fitted if necessary. These smaller saws tend to range from 90 to 110 cm (3 ft. to 4 ft. 6 in) long.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

TIMBER DECKING

SKILL LEVEL

Careful measuring and cutting is required when constructing a timber deck. It would be helpful to have an assistant for some stages of the work.

SAFETY FIRST

Wear work gloves to avoid splinters, and safety goggles to protect eyes when using power tools. Dispose of treated wood off-cuts as ordinary household waste. Treated wood should not be burned in open fires, barbecues, stoves or fireplaces. Avoid inhaling sawdust.

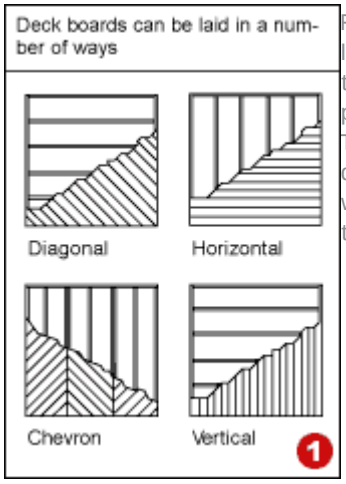
Pre-treated wood is perfectly safe and poses no risk to people, animals and plants, and is safe enough for children to play on.

INTRODUCTION

Timber decks offer a natural and attractive outdoor living space for dining, entertaining or simply relaxing.

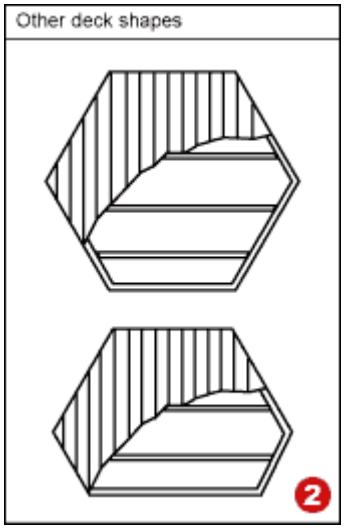
For an alternative to a patio, a timber deck is a useful addition to your garden. Design and construction is relatively easy - all you need to do is construct a frame from joists and add deckboards to create a flat patio. Additional posts, handrails and spindles create the complete deck look.

2 - Planning & design



First you should choose a location for your new deck that takes the sun and prevailing winds into account. Then decide whether your deck should be free-standing within your garden or linked to your house.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



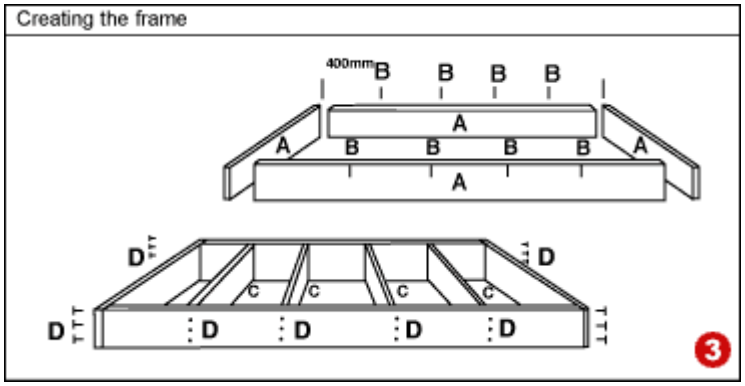
Decide on the shape and size of your deck - deck boards can be laid in a number of different ways and more ambitious deck shapes are possible: the only limit is your ingenuity. It is important that you decide on the deckboard layout before assembling the support joists as some patterns will affect the spacing and number of joists, for example a double joist will be needed for a chevron style layout.

Mark out the area to be occupied by your deck with wooden pegs and string: this will help you to visualise the size of the finished deck and serve as a guide for preparing the site. If the site you have chosen is lawned, then it is recommended that the turfs are removed and the site is level.

You can prevent the growth of unwanted vegetation under your deck by covering bare ground with black plastic sheeting, followed by gravel.

3 - Creating the frame

Deck boards can be laid out in a number of ways. It is important that you decide on the deckboard layout before assembling the support joists as some patterns will affect the spacing and number of joists, for example a double joist will be needed for a chevron style layout.



Step 1: Cut the joists **(Diagram 3 - A)** that will form the sides of the deck to the size you require.

Step 2: Mark the position of the floor joists **(Diagram 3 - B)** at 400mm intervals.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Step 3: Cut the deck floor joists (Diagram 3 - C) to length and treat all cut ends with end seal preservative.

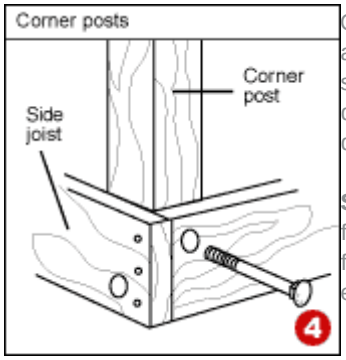
Step 4: Place the side and floor joists in the position where the deck is required.

Step 5: Assemble the framework using 75mm screws in pre-drilled holes, three screws per joist end **(Diagram 3 - D)**.

If you just require a flat deck area you can now proceed to 'Laying the deck-boards'.

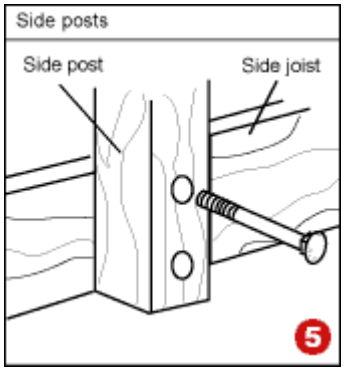
4 - Fitting posts, rails & spindles

The safety and beauty of your deck can be enhanced by railings. These railing sections, fitted between posts, should be assembled and then fixed into position onto the framework.



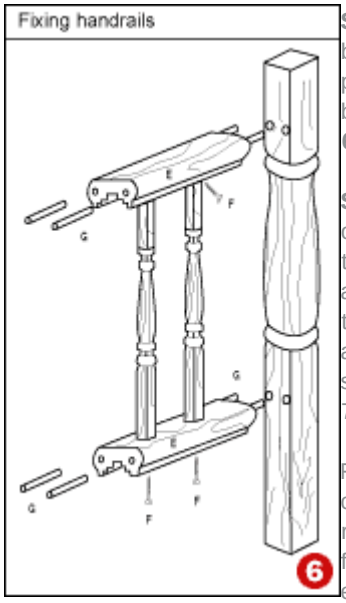
Corner posts will be required at 1200mm intervals on straight sections, fixed directly to the joists of a flat deck.

Step 1: Fix the corner posts first, using coach bolts to fasten them to the inside of each corner.



Step 2: First mark the position of the posts on the side joists, then bolt the side posts to the inside of the joists.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Step 3: Measure the distance between the two post positions and cut the top and bottom handrails **(Diagram 6 - E)** to length.

Step 4: Measure the length of the spindles to fit between the top and bottom handrails and cut to size to allow the top handrails to be 900mm above the finished deck surface, and bottom rails 75mm above the deck.

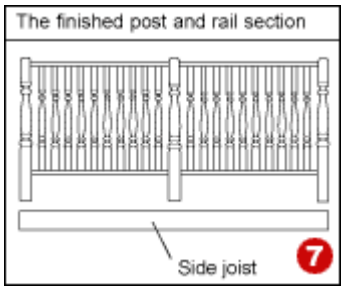
Fix the spindles at 100mm centres to the top and bottom rails using 50mm screws, fixed from the underside of each rail **(Diagram 6 - F)**.

Step 5: To fix the section of railing to a post, first unbolt and remove the posts.

Drill two 12mm diameter holes, 38mm deep in the ends of the top and bottom rails.

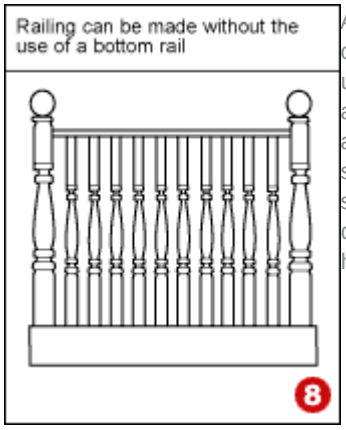
Drill corresponding holes on the posts, allowing for the bottom rail to be 75mm above the surface of the deck after the deck boards have been fixed.

Join the railing assembly to the posts with glued dowels. For best results, use a concealed dowel fixing **(Diagram 6 - G)**.

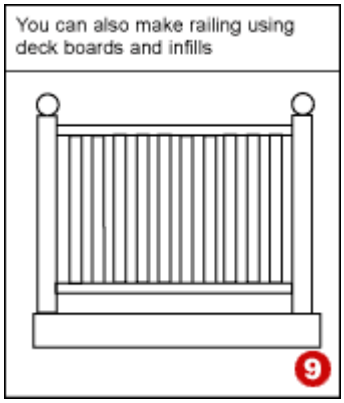


Manoeuvre the finished post and rail section into its position and secure to the joists with bolts.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

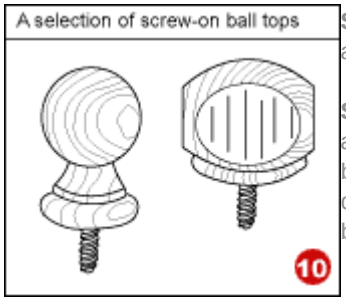


As an alternative, you can create railings without the use of a bottom rail. Posts and top rails are assembled and fixed as before. The spindles are then fixed with screws to the rail and the deck after the deck boards have been fitted.



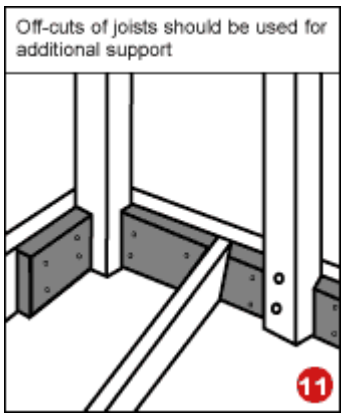
Make sure that the height of the top rail from the finished deck is exactly that of the spindles you have bought, if you don't want to cut them.

You can also make railings using deck boards and infills.



Step 6: Finish the posts by adding a screw-on ball top.

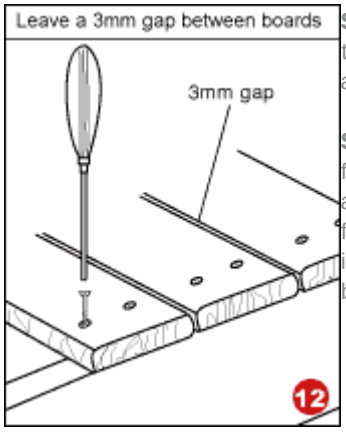
Step 7: When all the post-and-rail assemblies have been fitted, complete your deck by fixing the deck boards.



Off-cuts of joists should be used to provide additional support for posts and subsequent decking boards around the posts.

5 - Laying the deck boards

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

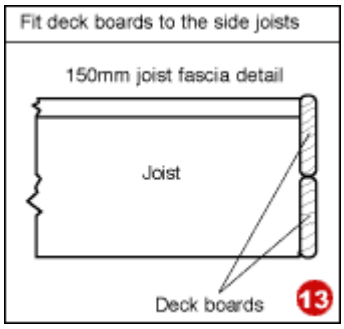


Step 1: Cut deck boards to the length required and brush all cut ends with end seal.

Step 2: Place the first board flush with the face of the joist at the front of the deck and fix, using two 50mm screws in pre-drilled holes in each board.

Step 3: Install the remaining boards in a similar way, leaving a 3mm gap between boards.

A 50mm nail is approximately 3mm in diameter.



Step 4: Finish off your deck by fitting deck boards to the side joists. These serve as a fascia and conceal the ends of the deck boards. For best results the corners of these fascia boards can be mitred.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

DO-IT-YOURSELF
TOW DOLLY PLANS

Before beginning please keep in mind that affordability was the key goal in building this dolly. Many of the parts I used were attained from friends or purchased as cheaply as I could. You may substitute anything you like with whatever you think would be better. Listed below is everything that I used to complete mine.
Have fun, be safe and good luck with your project.

DISCLOSURE:

The seller of these plans, can not be held liable for any damage
that is caused during the construction, or by use of this Tow Dolly.

You will need the following items to complete the dolly:

1 - Axle. See below for location
30 - Feet of 2 X 2 1/8" inch thick angle plate steel. Local steel supply store.
15 - Feet of 2 X 3 box steel. Local steel supply store.
1 - 8 Foot piece of 2 X 12 wood plank.
This will be your ramps. Lowes or Home Depot
1 - 2" trailer coupler. Available at Wal-Mart or Target for $16.00
2 - Aluminum fenders.
Available at any trailer or camper supply store for about $10 a piece.
1 - Set of trailer lights. Wal-Mart or Target $19.99.
2 - Safety chains. Nothing fancy.
You can even buy them at Auto Zone already made with hooks.
2 - 2" wide ratcheting straps.
About $25.00 a piece or spend a little more and get the kind that cradle over the tires. Wal-Mart or Target.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

AXLE ASSEMBLY:

The first item you will need to get is an axle.
This can be purchased at any local salvage yard.
If you offer to take it out yourself, you should be able to get one for about $50.00.
Here is the secret vehicle to get the axle from
…..Any late model (1990-up) Dodge Caravan.
The rear axle from the Caravan is an excellent choice for this particular project.
Just make sure it is a 5 lug not the 4 lug that many came with.
Oh yeah, don't forget to take the wheels and tires with it.

The axle is extremely simple to remove, jack up the rear of the vehicle and secure it with jack stands (I believe in safety you know). After the vehicle is on the jack stands put your jack under the axle.
Remove the (8) ¾ nuts holding each leaf spring, remove the "U" bolts holding the leaf springs to the axle, remove the lower shock bolts (also ¾ size) cut the brake lines and presto.

Measure the axle from one end to the other.
Take your measurement where the axle tube meets both leaf spring mounts.
Cut the axle in half at that measurement. You can use a Sawsall with a good blade. The axle tube is hollow so it cuts pretty easily. For the next step you will need to purchase a 3 foot piece of sprinkler pipe or sometimes referred to as "Black Pipe". You can find this at either a plumbing supply house or industrial supply store. Check the diameter of your axle, the inside diameter should be 2 ½ . This is the outside diameter size pipe you need. Make sure you slide each end into the axle tube at least 6 inches for best support. Weld completely around each end where you slid the pipe in.

CRADLE ASSEMBLY:

To make the cradle, you can use sturdy angle steel.
The dimensions should be 80" wide by 23" deep. (See Diagram 1)

Position one piece of angle steel 18" from the ends of the cradle on both sides.
Weld. (See Diagram 2)
Put two pieces of angle steel inside of the boxes you just made.
Weld. (See Diagram 3)

Position the cradle assembly on the axle so that the center of the tire is at the center of the cradle.
Tack weld the cradle in place and check to make sure it is square.
The front of the dolly will be the side with the axle offset forward.

TONGUE ASSEMBLY:

Take your 2x3 box tubing and cut a piece 4 feet long.
At the center of the cradle, tack weld this piece underneath.
It should fit against the axle and also the bottom of the cradle. Weld at both places.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Cut 2 12” pieces of 2x3 steel. Place one piece on top of the other and slide it forward 6 inches. Weld the two pieces together (See diagram 4)
Weld this piece onto the 4 foot piece extending from the dolly with at least 6 inches of overlap.

Cut another 2 foot piece of 2x3 and weld it on top of the previous cut piece with 6 inches of overlap.
Cut two 27” pieces of 2x3and attach under the tongue and cradle as show in Diagram 5.

Attach your trailer coupler either using high quality bolts or weld it to the tongue or both.

RAMPS:

Cut the 2 X 12 plank in half.
Cut 2 pieces of angle steel 12” in length.
Using 2 high quality bolts (preferably carriage bolts) attach angle steel pieces to one end of each plank. (See diagram 4)

TIE DOWN STRAPS:

Tie downs straps come in many different varieties. Make sure you get ones with at least 3,500 lb. capacity. Depending on what type of ends are on your straps will determine how you make your mounting points. I used 1/8 in.flat stock steel bent in a vise, 4 18” wide pieces. (See Diagram 6)

FENDERS:

Fenders should come with brackets and instructions on how to attach to dolly.
I attached mine to the ends of each side of the cradle.
Fenders are optional by the way. See local laws.

LIGHTS:

Mount one light to each fender. Wire as per light instructions.

WORD OF CAUTION:

This is a FIXED cradle dolly. It does not tow like other Swivel cradle dollies. You MUST make sure you have enough tongue weight on your truck. Just make sure you can not lift the tongue of the dolly up with a car on it.

**This is very VERY important…
When the dolly is completed, take a test drive with a car loaded on it and take your turns VERY, VERY SLOW!!**

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Diagram 1

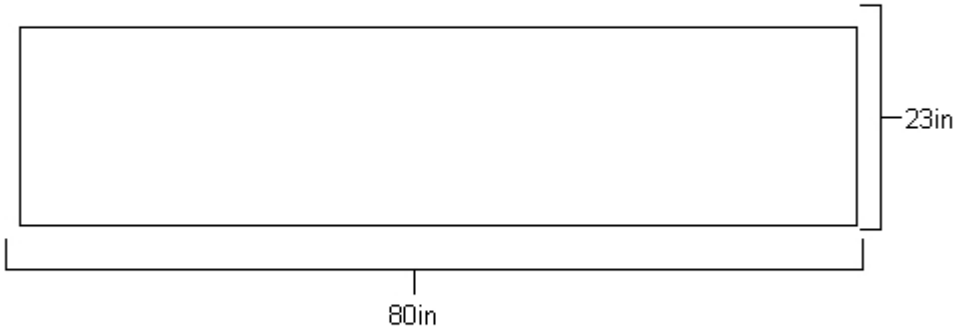
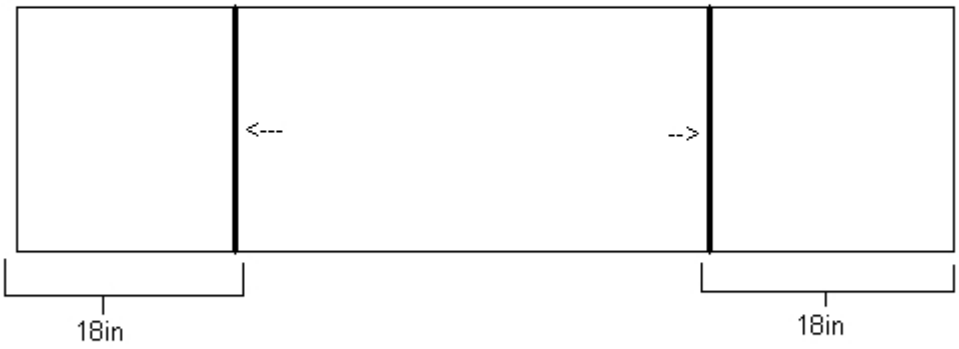


Diagram 2



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Diagram 3

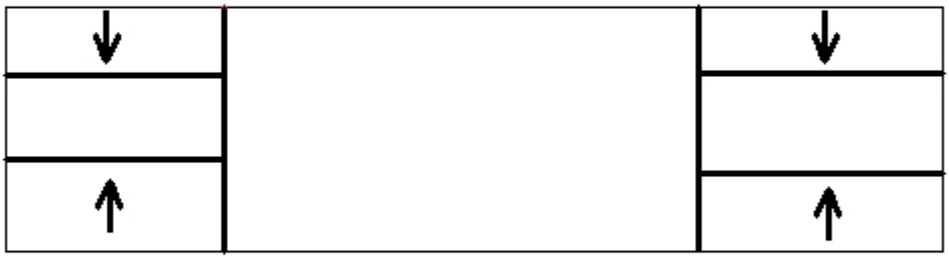
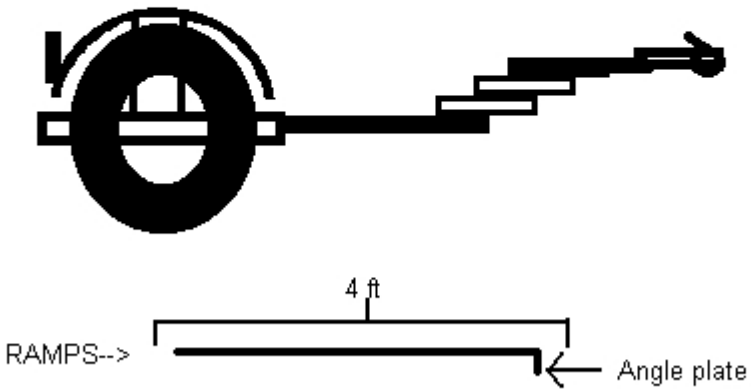


Diagram 4



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Diagram 5

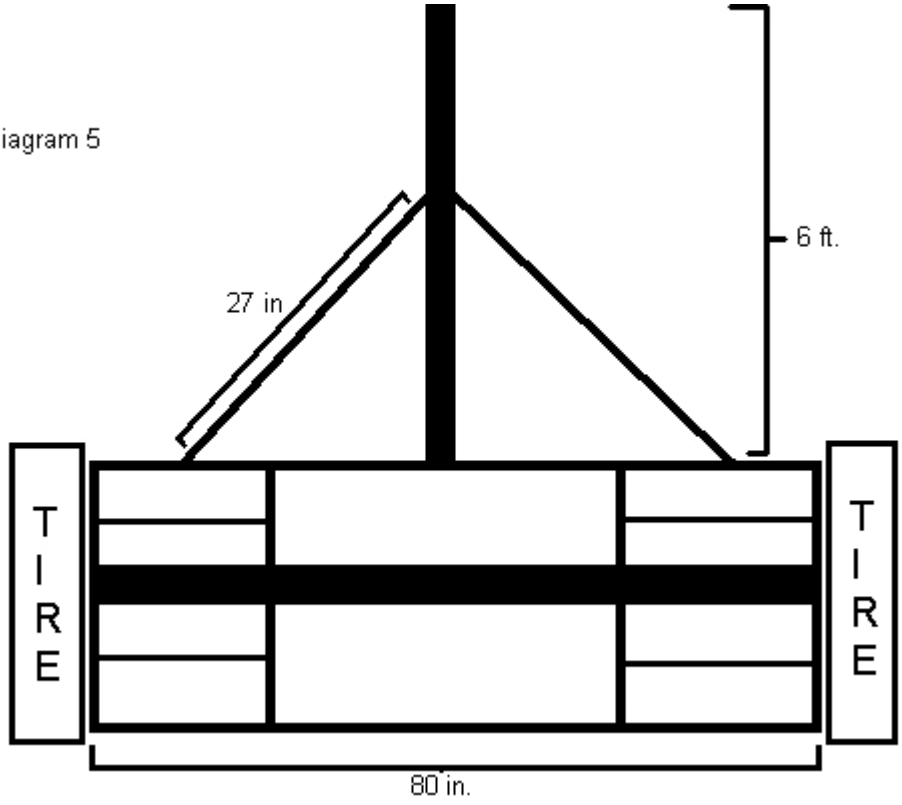
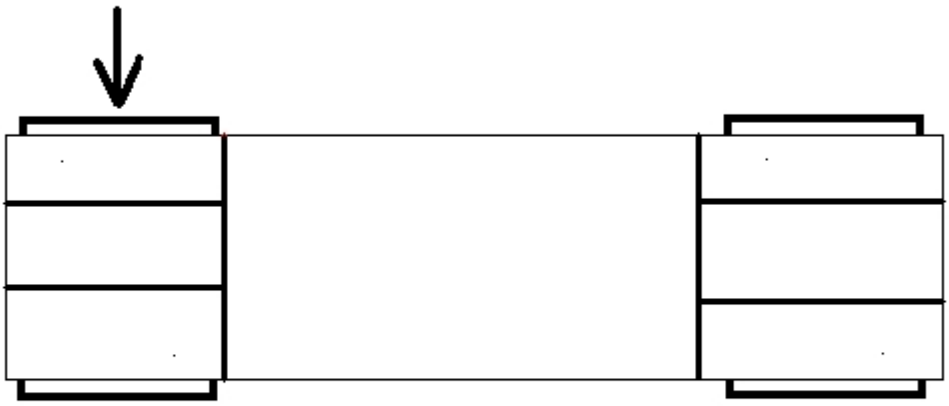


Diagram 6

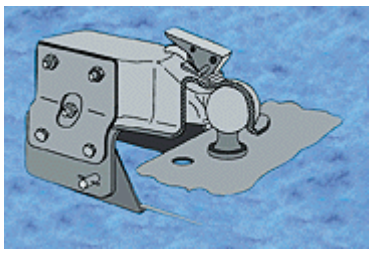


Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

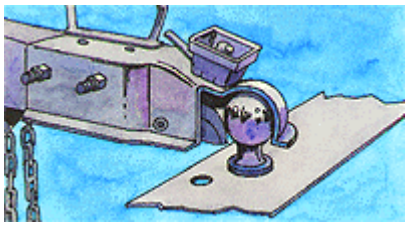
Hookup of the Tow Dolly to Truck

1. The coupler locking device must be in the full open position. If equipped with a lower locking plate, the plate must be in the down position. Place the coupler of the tow dolly over the 2" hitch ball on the truck. Be sure the coupler is fully seated down over the ball.

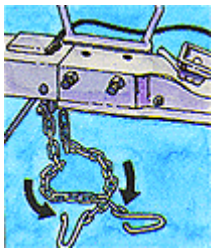
Lever-Type Coupler
(with locking plate)



Handwheel-Type Coupler



2. Completely lock the coupler. If equipped with a level-type coupler,the lever must be in the down position and the locking pin inserted. If equipped with a handwheel-type coupler, completely tighten the handwheel.Pull up on the tow dolly tongue to be sure it is properly secured.



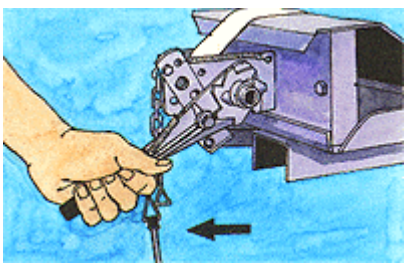
3. Connect the color-coded wires from the tow dolly to the corresponding color-coded posts on the truck's electrical box. Check for proper operation.

4. Crisscross the safety chains from the tongue of the tow dolly. Pass through eyelets on truck and attach hook to safety chain. Allow slack in the chains for movement during turns made by the truck and tow dolly.

Hookup of the Towed Vehicle to Tow Dolly
It is the customer's responsibility to hook up the towed vehicle to the tow dolly. Consult your insurance carrier before towing as Penske is not responsible for any damage to a towed vehicle.

1. Be sure that the truck and tow dolly are straight and on level ground.

2. Make sure that the tow dolly platform is straight.

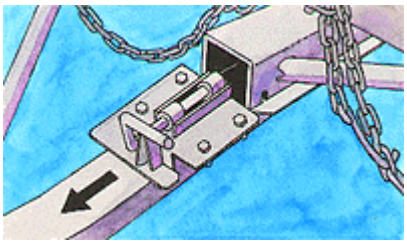


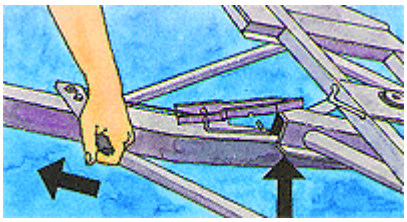
3. Remove safety pin on ratchet assembly and unroll tire straps.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

4. Lay tire straps along fender side of tow dolly, off of tire platform.

5. Allow tow dolly platform to tilt back by releasing the locking pin.





6. Slowly drive the front end of the towed vehicle onto the tow dolly until tires on the towed vehicle are resting against the tow dolly wheel stops. The platform will go into upright position.Make certain that the towed vehicle is **centered** on the tow dolly platform since the platform swivels during turns. Adequate space is required between the tow dolly fenders and towed vehicle.Never back up a towed vehicle onto a tow dolly.

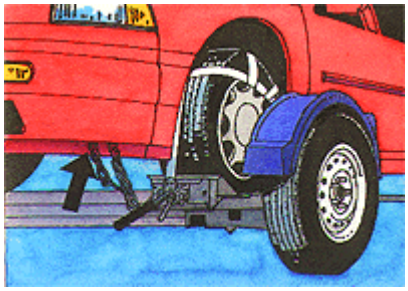
7. Locking pin on platform must go into the locked position.

8. For safety reasons, engage the parking brake on the towed vehicle (see item #13) and place transmission in low gear (standard) or park (automatic).

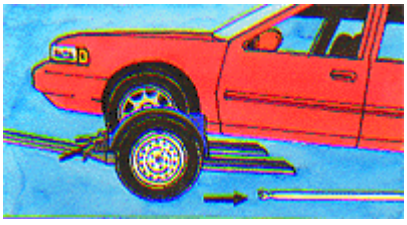
9. Center the tie-down ratchets in front of the towed vehicle's tires and pull the tire straps forward over the tires.

10. Tighten each tire strap securely by pulling up and down as many times as necessary on the tow dolly ratchet assembly handle. Be sure the strap on the inside of the tire does not come in contact with any brake or suspension parts. Insert safety pins and attach safety clip with handle in down position.

11. Hook up safety chains from tow dolly platform to the frame of towed vehicle directly above the area where chains are mounted on the tow dolly. Allow slight slack in the chains to provide for suspension movement on the towed vehicle.



12. Disconnect the drive shaft on the towed vehicle if rear-wheel or four-wheel drive. Consult your dealer if you are uncertain of the above. Towing above vehicle without disconnecting drive shaft will damage towed vehicle's transmission even if transmission is placed in neutral.



13. Release parking brake on towed vehicle and be sure the steering is locked in the straight position.

14. Remove keys from ignition and lock vehicle.

15. Check the towing system after hookup, tow about 100 feet, then stop and perform a safety check. Check the bolts, chains, coupler, ramps, tire straps, and other items to make sure they are in the right position and secure.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

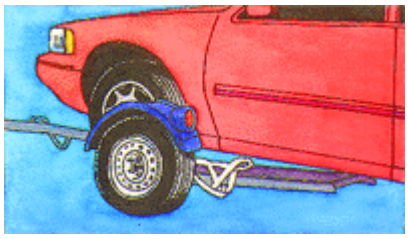
16. Repeat the safety check after the first five miles and then every 50 miles thereafter.

Towed vehicle is now safely connected and ready to be towed.

CHECK THE TOW DOLLY BOLTS, COUPLER, SAFETY CHAINS, ELECTRICAL HOOKUP, AND TIRE STRAPS AFTER THE FIRST FIVE MILES OF TRAVEL AND THEN EVERY 50 MILES THEREAFTER.

Unload Towed Vehicle from Tow Dolly

1. Park truck and tow dolly straight and on level ground. Fully apply the towed vehicle and truck parking brakes. Install drive shaft on rear-wheel or four-wheel drive towed vehicle.



2. Remove tire straps and safety chains from towed vehicle, placing the ratchet handle in the down position.

3. Release tow dolly platform locking pin.

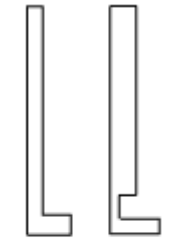
4. Release parking brake on towed vehicle.

5. Slowly back towed vehicle off of tow dolly to prevent bottom of vehicle from contacting ramps. Check transmission fluid level on towed vehicle if drive shaft was removed as fluid may have leaked out during towing.

6. Return tow dolly platform to the up position and engage locking pin.

7. Take up excess slack of tire straps in ratchet assembly and place safety chains in storage position.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



UPVC Fascia, Soffit and Bargeboards

When putting up new fascias, soffits and bargeboards or replacing them, one option is to fit UPVC. Usually available in white, UPVC fascia and soffit material will save maintenance and looks great - there will be no need for repainting every other year, just wiping down with a damp cloth should bring it back.

On some houses, the existing fascia will include fixings for the telephone and/or mains electricity, these services will need relocating onto any new UPVC fascia you fit, this relocation MUST to undertaken by the appropriate service supplier, so speak with them before you start.

Although not cover by this page, the roof guttering will need to be removed before the fascia can be replaced.

Safety!!

Remember that replacing fascia, soffit or bargeboard necessitates working at height and due care is necessary. It is not a job for a person on a ladder. Appropriate scaffolding is highly recommended.

When replacing a wooden fascia, soffit or bargeboard, it is recommended that the old fascia, soffit or bargeboards are all removed. Some 'professionals' will clad over existing wood but this risks trapping moisture which could cause serious rot in the structure.

Different types of board

Note that different styles of board are available:

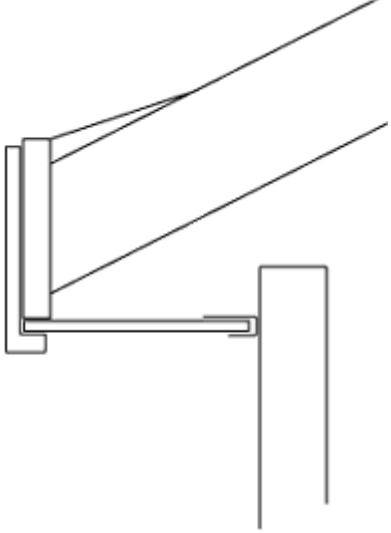
- Cover Board
- Fascia Board

Cover Board is, as the name suggests, for covering existing fascia, whereas Fascia Board is intended for use without a backing surface. While Cover Board tends to be thinner as it is not acting alone as part of the structure, the main difference is that Fascia Board has a recess along the inner corner to locate the Soffit whereas the inner corner of Cover Board is a plain right-angle.

Fascias and Soffits

Current building regulations require ventilation in the soffit for new buildings (equivalent to a one inch gap along the whole perimeter), although not absolutely necessary, when fitting replacement soffit, it is worth considering fitting ventilated soffit to improve ventilation of the roof void.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



If you need to replace wooden fascia, this probably indicates that the building is 20 years or more old and, where fitted, the roofing felt under the tiles should be checked at the eaves. Felt often deteriorates at this point and, if necessary, it should be replaced upto the first batten (or, as a minimum, 12 inches (300 mm)). When fitting new felt, ensure that it projects about 3 inches (75 mm) over the fascia and is fitted under the existing felt so that any water runoff runs onto the new felt rather than under it.

Points to remember:

- Allow 5 mm clearance at each end of the material to allow for expansion.
- Fit a cover strip at each joint and corner.

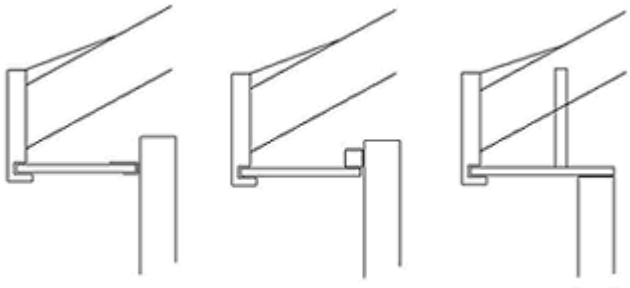
Before starting to fix a length of fascia or cover board, clear a whole side of the building of guttering etc. and fix a horizontal builders string line along the side of the building so that all sections of board can be levelled to the same line.

The figure to the right shows an existing wooden fascia clad with UPVC, if you decide to use this method, it is best to remove the existing soffit. As most existing soffits fit into a slot on the inside of the fascia, it is possible to release the soffit by cutting off the bottom of the fascia.

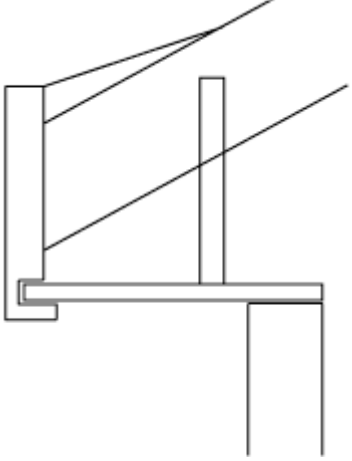
The new fascia should be pushed up under the ends of the tiles and levelled before fixing, it's easier to get the fascia straight if the lowest row of tiles can be pushed up out of the way while the fascia is positioned and fixed. Fix the fascia using plastic headed stainless steel ring nails (specifically supplied for the job), two vertically at 600 mm horizontal centres. Position the nails vertically so that they spread the load, one near the top of the surface behind, one near the bottom. Keep the vertical position of the nails constant between horizontal positions otherwise the line of nails will look a mess.

The building side of the replacement soffit can be fixed (see below):

- Into a upvc channel fixed to the wall of the house.
- Screwed to a wooden batten fixed above the soffit to the wall of the house.
- To the top of the outer brickwork using either a batten down from the rafters or a structural glue between the soffit and the top of the wall.



Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



As mentioned above, to do the job properly, the original timber fascia, soffit and bargeboard should be removed before fitting replacements.

Any rot in the ends of the rafter should be repaired using good quality timber treated with preservative.

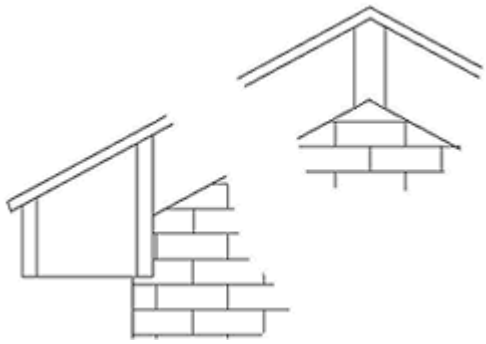
Make sure that any old nails in the ends of the rafters are removed (or knocked in below the surface).

The eaves felt should be checked and repaired.

Fix the fascia to the ends of the rafters using plastic headed stainless steel ring nails, with the first set of tiles pushed up, locating the ends of the rafters is easier.

Bargeboard

Cladding Bargeboards with UPVC is similar to cladding fascias, the main difference is that some cutting of sheet UPVC will be necessary to shape around the eaves end.



Typical eaves end and bargeboard on gable end

Eaves end and bargeboard on part-hipped roof

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

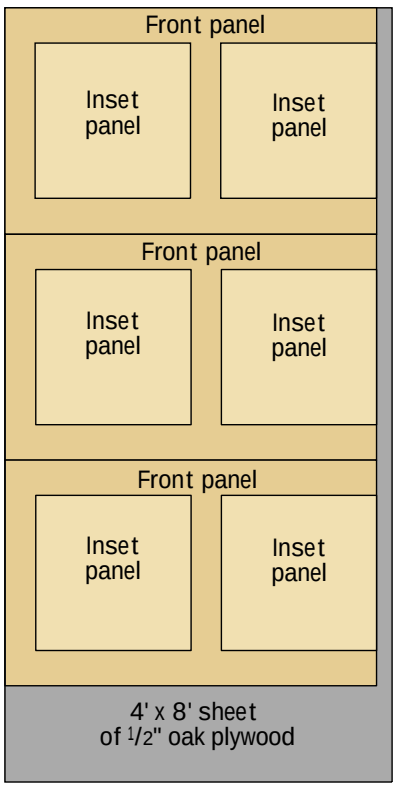
Schedule Of Materials: Wainscotting

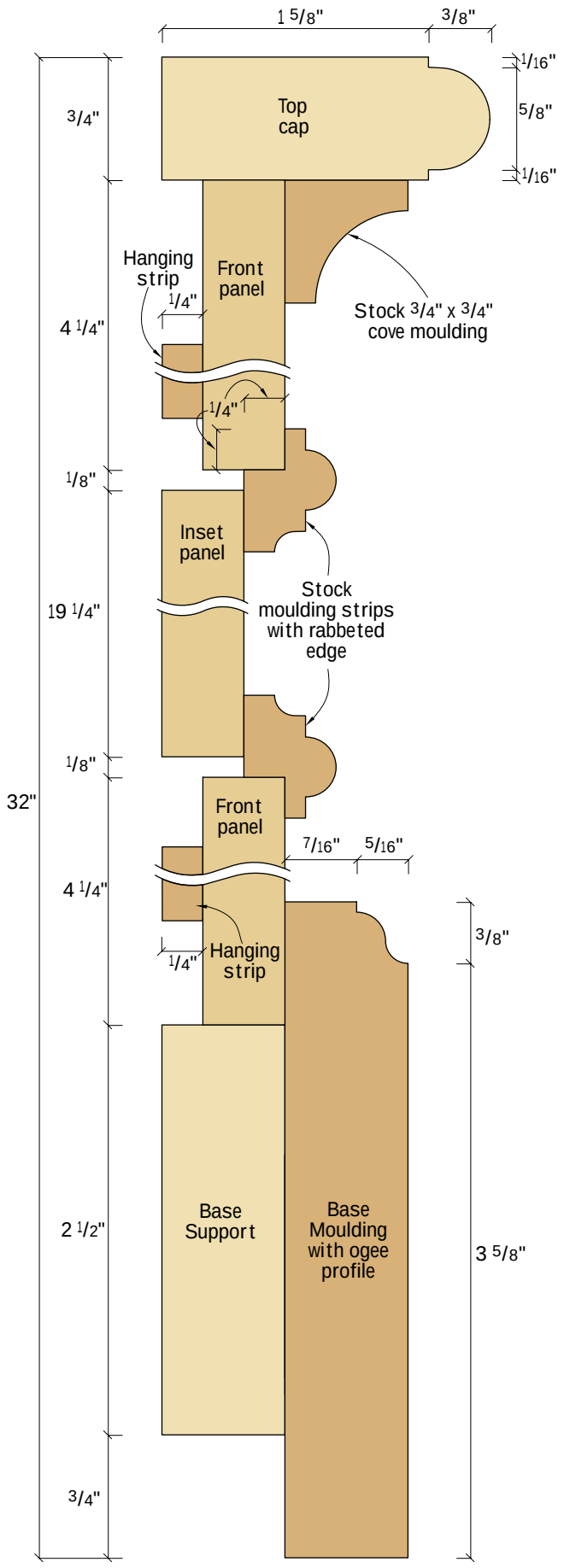
Parts needed for each 4' section:

No.	Item	Dimensions T W L	Material
1	Front panel	1/2" x 46" x 28" *	OP
2	Inset panels	1/2" x 19 1/4" x 19 1/4"	OP
8	Moulding strips	3/4" x 9/16" x 20"	SO
2	Hanging strips	1/4" x 2" x 46"	Ply
1	Base support	3/4" x 2 1/2" x 46"	P
1	Base moulding	3/4" x 4" x 46"	SO
1	Top cap	3/4" x 2" x 46"	SO
1	Cap cove	3/4" x 3/4" x 46"	SO

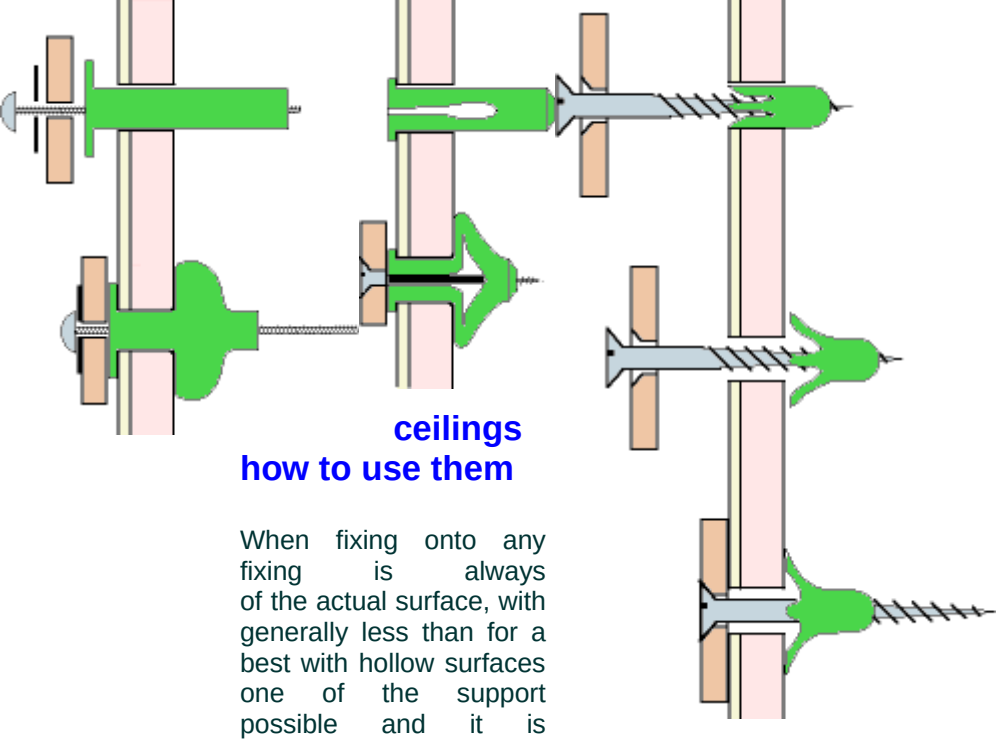
*If building a corner, one panel needs to be 46 3/4" wide, and a 3" wide filler needs to be added to the mating panel.

OP=Oak ply • SO=Solid oak • Ply= Plywood • P=Poplar





Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Wall fixings for hollow surfaces

Fixings for hollow structures (walls, ceilings and doors etc.) and how to use them

When fixing onto any surface the strength of the fixing is dependent upon the strength of the actual surface, with hollow surfaces this is generally less than for a solid structure. It is always best with hollow surfaces to try to locate and fix into one of the support members. This is not always possible and it is sometimes necessary to actually secure onto the covering, be it plaster board, hardboard or whatever.

When drilling relatively thin, soft materials it is not necessary or desirable to use hammer action if a power drill is used.

Before drilling into any void, check for possible concealed pipes and electric wiring.

Rubber-sleeved fixing with captured insert

As the screw is tightened into the rubber sleeve inserted through the wallboard, the sleeve is compressed against the reverse side of wall. The screw can be removed/replaced if required, the fixing will remain in place through the wall.

After the required hole is drilled, the rubber sleeve is inserted through the covering; the sleeve needs to be a fairly tight fit through the hole to ensure that it does not rotate when the screw is tightened. The screw is then inserted through the workpiece and into a tapped insert, which is moulded into the back end of the sleeve.

The sleeve has a small rim which stands proud of the outer surface, to allow the workpiece to sit flat against the surface, the back of the workpiece should be relieved around the hole.

Various sizes are available; the screws are supplied with the fitting although longer screws of the appropriate diameter/thread can be used where the workpiece is too thick for the screw supplied.

Plastic collapsible fixing

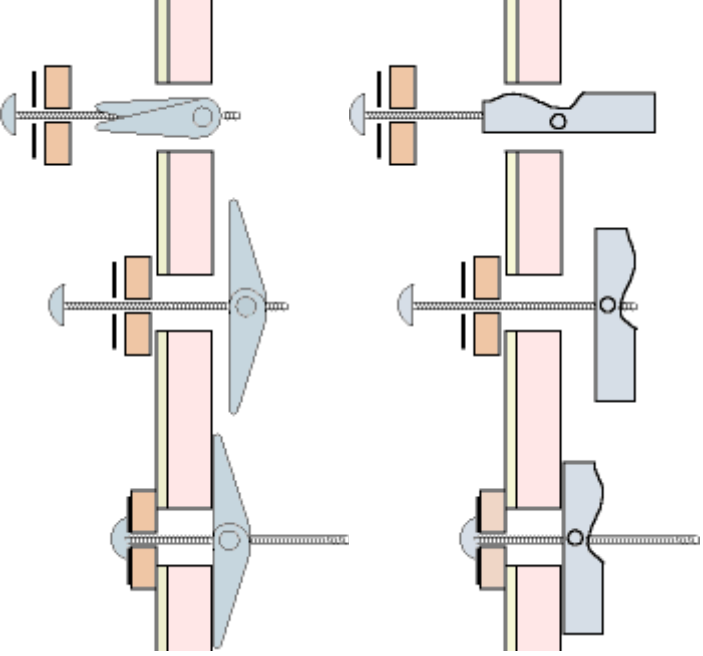
Very similar to the above fixing but using an ordinary wood screw. The fixing is used in the same manner as the above but they tend to stand up less well to repeated screw removal/replacement as the screw tends to cut a new thread each time it is inserted.

Plastic spread fixing

An inexpensive fixing which is not reusable - removal of the screw will result in the fixing dropping down the cavity.

Drill a hole just large enough to take the head of the fixing.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



An ordinary wood screw of the appropriate length (at least equal to the thickness of the workpiece plus the thickness of wallboard plus the length of the fixing), is inserted through the workpiece and into the fixing by about 2 or 3 turns. The fixing is then pushed through the hole in the wallboard. As the fixing is pushed through, the 'legs' of the fixing are compressed and they spring out once the fixing is through the board. The workpiece needs to be pulled away from the front surface so that the legs of the fixings bear on the reverse side of the wall as the screw is tightened.

Various sizes are available to suit various diameters of wood screw.

Spring metal toggle fixing

These fixings tend to give a stronger anchor than the plastic types above as they spread the load over a larger area on the reverse side of wallboard. The fixing consists of two spring-loaded metal arms with a thread tapped into the hinge pivot. The two arms are held against the screw as the fixing is inserted through the pre-drilled hole and then spring out to spread the load on the reverse side of the wallboard. The fixings cannot be reused - removal of the screw will result in the fixing dropping down the cavity.

Drill a hole just large enough to allow the toggle to be pushed through with its spring-loaded arms held together.

Pass the fixing screw through the workpiece into toggle. Push the toggle through the hole until the arms spring out, pull the workpiece away from the front surface (so that the arms bear against the reverse side of the wallboard) and tighten the screw.

Various sizes are available; the screws are supplied with the fitting although longer screws of the appropriate diameter/thread can be used where the workpiece is too thick for the screw supplied.

Gravity metal toggle fixing

These fixings are similar to the spring type above except that the toggle is made in one piece which is passed through the hole and then drops down under gravity to be parallel to a vertical wallboard. These fixings can only be used when fixing to vertical surfaces. The fixings cannot be reused - removal of the screw will result in the toggle dropping down the cavity.

Drill hole just big enough to allow the toggle to be passed through when the toggle is parallel to the fixing screw.

Pass the fixing screw through the workpiece into toggle. Push the toggle through the hole until it turns within the cavity, pull the workpiece away from the front surface (so that the toggles bear against the reverse side of the wallboard) and tighten the screw.

Various sizes are available; the screws are supplied with the fitting although longer screws of the appropriate diameter/thread can be used where the workpiece is too thick for the screw supplied.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Wall fixings for solid surfaces

Fixing into solid brick, block or concrete

When you need a fixing into brick, block or concrete, you need to be confident that it will be strong enough for the application - the easiest way to be confident is to use the correct type of insert with the correct size of drill and screw.

Although often referred to as 'wall' fixings, they are equally suitable for fixing into floors or concrete beams.

Plugs for screws:

General.

All the plugs described below for use in solid surfaces are designed for use with ordinary wood screws. Each basic type of plug is available in a range of sizes to suit specific screw diameters and often for specific length of screw. To ensure maximum strength when using a particular type and size of plug, always follow the manufacturers recommendations regarding the drill size and the length/size of screw.

Generally it does not matter what material the screw is made from or the type of screw head, but when selecting the type of screw to use, think about the position and environment in which it will be used. If the screw head will be exposed, consider a brass or chrome finish, if the screw will be used in a damp area, avoid steel or other materials which will corrode.

Drilling

All the plugs detailed require a hole to be drilled in the brick, block or concrete before the plug can be used. Often on internal walls, the material will be covered with a relatively thin coating of render and/or plaster.

Before drilling into any surface, check for possible concealed pipes and electric wiring.

To ensure that the drill bit has a long and happy life, a tungsten-carbide masonry drill bit should be used. The effort required to drill the hole depends a lot upon the material being drilled:

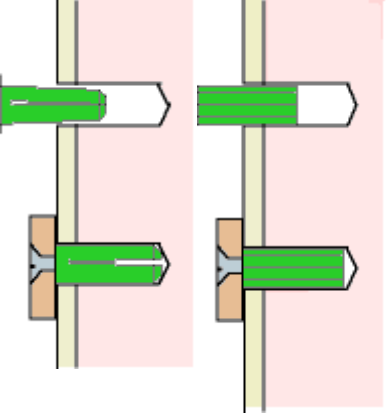
Brick:

Brick is basically baked clay, and a good quality brick will be free of both internal voids and internal pieces of flint, stone or other 'non-clay' material. While the hardness of bricks will vary, they can normally be drilled accurately and cleanly. You may need to use a power drill with a hammer action on bricks that are very hard.

Block:

Block material can vary considerably from the ultra-soft lightweight/thermal blocks to the concrete block containing large pieces of very hard flint etc.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Lightweight blocks can be drilled very easily using a hand-brace or a power drill without hammer action. A risk with these blocks is that they are not very 'forgiving', a small amount of pressure in the wrong direction and the drill bit will be away where you never intended it to go.

At the other end of the block materials, is the concrete block - these can vary greatly in hardness and the cleanness of the final hole. Concrete can vary both between different areas of the same block and between blocks from different manufacturers. A drilled hole tends not to be as clean as in brick and there is always a danger that the drill bit will hit a piece of hard material causing the bit to wonder off the intended line. Even when no large pieces of hard material is encountered, the drill bit will often remove smaller pieces of grit which will unintentionally enlarge the drilled hole. A hammer action power drill is generally required.

Concrete:

Cast concrete is different from the block version in that the material is less 'grainy' with the particles more firmly bonded together. Like the block material, when drilling into cast concrete, large or small pieces of hard flint etc. may be encountered, causing the drill bit to wonder off line, prevent drilling to an increased depth or producing a ragged hole.

Most plugs need to be a push fit into the drilled hole, if the hole is undersize, hammering the plug into the hole may damage the plug and/or make it impossible to drive the screw home in the correct manner. Too large a hole may make it difficult to drive the screw home (the plug may turn in the hole as the screw is turned) or provide reduced strength when the screw has been tightened.

Plastic plugs

These are available in a variety of lengths and for a variety of screw sizes. The interior of the plugs will usually be designed so that when a screw is fully inserted the end of the plug furthest from the surface expands the greatest.

Drill hole to the same depth as the wall plug. Push the plug into the hole, insert the screw through the workpiece into the plug and tighten.

Plastic 'plug sticks'

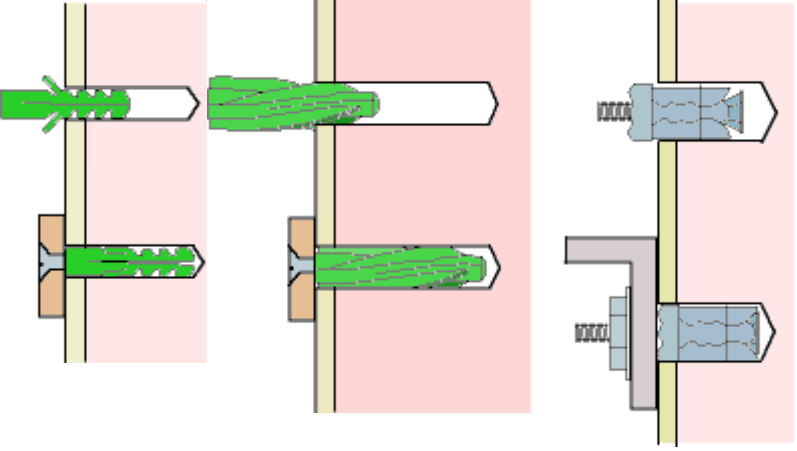
Plug sticks are sold as lengths (12 in/300mm) of a uniform cross section along the whole length. Different diameter sticks are available for different screw sizes - the different diameters are normally made with differing material colours for easy identification. It is only necessary to cut off the appropriate length after the hole has been drilled and insert the length of stick into the hole. Although convenient, the sticks do not give as firm a fixing as the plugs because of their uniform cross-section.

Fibre plugs

Fibre plugs are often though of as old-fashioned however they still have a use today. One of their advantages over plastic is that screw can be removed/replaced a number of times without having to replace the plug. There also tend to stand up to high temperatures better than plastic. Fibre plugs are available in a number of lengths and diameter; they are of a uniform cross-section along the length so can be cut down to size if necessary. The plug should be as long as the threaded part of screw.

Drill the hole and insert the plug to just below the wall surface. Insert the screw through the workpiece and turn the screw into the plug until the plug starts to bind in the hole and then

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



withdraw it so that the top of the plug is in line with the surface. The plug expands to fit the hole tightly as the screw is driven home.

Ribbed barrel plugs

Ribbed barrel give a really tight fit. Each plug will take a range of screw sizes and a choice of lengths is available.

Drill hole slightly deeper than wall plug being used. Push the plug into the hole, insert the screw through the workpiece into the plug and tighten.

Soft materials, such as lightweight block

Because lightweight block is a very soft substance, special plugs are required. These plugs tend to be like ordinary wall plugs but with helical wings around the barrel. The helical wings grip the sides of hole. As the screw is tightened, the wings cut further into the block giving a very strong fixing.

Drill the hole the same diameter as the plug barrel. The overall diameter of the plug will be about twice the diameter of the barrel, and the plug will need to be hammered into the wall so that the wings cut into the sides of the hole. Slip the screw through the workpiece into the plug and tighten.

Bolts and nuts metal wall inserts

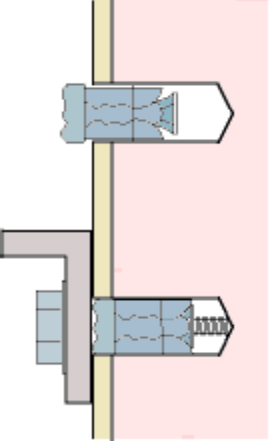
These can offer a stronger and more temperature resistance fixing than plastic or fibre plugs.

The anchoring part of the insert comprises a number of metal segments which are forced into the side of the hole by a cone which is pulled forward into the segments by the bolt or nut being tightened. Tightening the nut or bolt pulls the cone into the segments but it also tends to force the insert out of the wall if it is not held in position until the segments begin to bite into the wall of the hole. The nuts/bolts can be removed/replaced numerous times, the only risk is that the wall material may be weakened by repeated application of the securing pressure.

Projecting type have an external screw thread which projects from the insert. Different lengths of thread are available (from 12mm to over 75mm) to allow for different thicknesses of workpieces. The hole in the surface only needs to be as deep as the actual insert itself.

Having drilled the hole just large enough for the insert, push the insert into the hole, position the workpiece over the thread, put on the washer and nut. Keeping the workpiece against the surface (to ensure the insert is not pulled from the hole) tighten the nut - any excess thread may be sawn off.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Bolt type inserts incorporate a thread in the cone and a bolt is inserted from the wall surface, different lengths of bolt are available for workpieces of different thicknesses. The hole in the wall needs to be deep enough to ensure that the bolt does not bottom when it is fully tightened.

Having drilled the hole just large enough for the insert (but deep enough for the tightened bolt), push the insert just into the hole, put the bolt through a washer and the workpiece, offer up the workpiece and engage the bolt into the threaded cone at the back of the insert. Keeping the workpiece against the surface (to ensure the insert is not pulled from the hole) tighten the bolt.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

WALL TILING

SKILL LEVEL

Good tiling is relatively easy if accompanied by careful planning. Estimate the number of tiles you need beforehand and know your design requirements if you are introducing a pattern or border. Then set out your starting point, and plan how to deal with awkward corners or recesses. Take care with spacing and bedding the tiles and clean off excess adhesive and grout as you go.

SAFETY FIRST

Protect your eyes with safety glasses or goggles when cutting tiles. Be careful of snapped tile edges because they can cut you. To protect sensitive or dry skin, gloves should be used when applying adhesive or grout (the ready-mixed paste which fills the gaps between adjacent tiles).

INTRODUCTION

You can easily brighten up your bathroom or kitchen by using wall tiles. These are both decorative and functional.

Wall tiles provide bright and easy-clean surfaces which are especially useful in kitchens and bathrooms. They are hard wearing and water resistant, and can help to brighten up small rooms or shaded work areas by reflecting natural light.

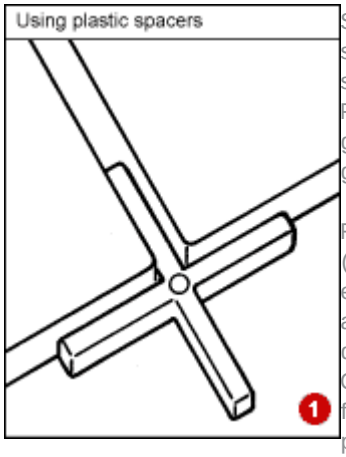
2 - Tile choice

Ceramic wall tiles are available in a wide choice of sizes, colours, designs and shapes. Square tiles are the most common, but other shapes include rectangles, hexagons, diamonds, octagons or interlocking designs. Wall tiles are thinner (4 to 6mm thick) than floor tiles, as they are subject to less wear. They are easier to work with and cut or snap to a scored line. They are also brittle and will chip or break easily if dropped.

Combination tiles feature a pattern or design motif on a background and coordinate with plain tiles. They allow you to add interest to an otherwise plain wall.

Universal tiles have bevelled edges and/or spacing lugs to give correct spacing for grout between tiles.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Standard field tiles have square edges and must be spaced by other means. Plastic spacers can be used to give even spacing for the grout.

Rectangular border tiles (often half-size), ceramic edging trims and mouldings are available to give definition to the tiled area. Clearly defined and well-finished edges give a professional look.

Grout lines must be aligned and a constant width, as the eye is drawn to the straight lines of the grouting. When choosing a border tile or trim, make sure that it is the same width as the other tiles used.

3 - Surface preparation

Tiles can be stuck to most surfaces with the right preparation. The surface must be flat because tiles reflect light and show up any unevenness.

Surfaces must be clean, dry and stable. Crumbling plaster must be removed and all imperfections and holes made good. Newly plastered walls must be allowed to dry thoroughly for several months.

Flaky, crumbly and absorbent surfaces can be primed with a PVA-based adhesive. Use a building/construction type as directed. Waterproof adhesive should also be used in areas which could become wet.

Old ceramic tiles do not have to be removed: you can tile on top. Check if they are firmly fixed - if not, use a good tile adhesive to stick them into place. Make sure that the joints between the new tiles are not in the same place as the old ones.

You do not have to re-plaster a wall that is either bare brick or taken down to brick level. Use exterior grade ply or plasterboard fixed to the wall to give a clean and flat base surface on which to tile.

Do not attempt to tile over wallpaper. This must be stripped back to plaster first. If tiling over a gloss-painted surface,

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

roughen up the surface with coarse abrasive paper to provide a key to which the adhesive will bond.

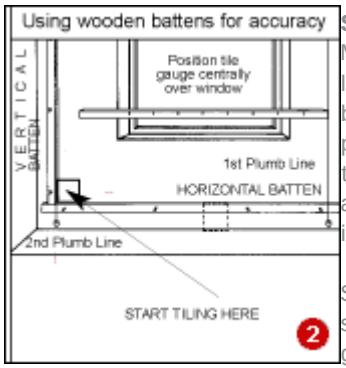
4 - Measuring & planning

The number of tiles needed for plain, uninterrupted wall areas is easy to calculate. Find out the number required for the height and for the width (counting part tiles as whole tiles). Multiply the two together and add a further 10% for breakages.

There can be significant variations between batches of tiles. Always buy the quantity you need in the first place and check that all the boxes are from the same batch.

Window recesses and alcoves should be calculated separately and added on. If you are using patterned tiles as inserts, these must be calculated and deducted from your total figure.

If you want to incorporate patterned or motif tiles, plan their exact positions using graph paper, with each large square representing a tile. Shade in where you want the patterned tiles to fall. Stick with this plan because it may be difficult to change once you have started tiling.



Step 1:
Make a tiling gauge from a length of straight wooden batten (say 1.8m or 2.4m of planed 2 x 1in wood). Mark the spacing of the tiles on it and the separate spacer gaps if used.

Starting at the top of the skirting board, use the tiling gauge to plan your tile rows. If a narrow strip is left at the top, move the bottom row up by half a tile width to give more even margins.

Step 2:
Using a spirit level, mark out the first horizontal row of tiles to be fixed above the floor or skirting boards. This must be one tile height or less above the base level. Nail a thin guide batten along this line so that the tiles can be positioned against it.

Use masonry nails for the guide battens, but do not drive them fully in - then they can be removed easily.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

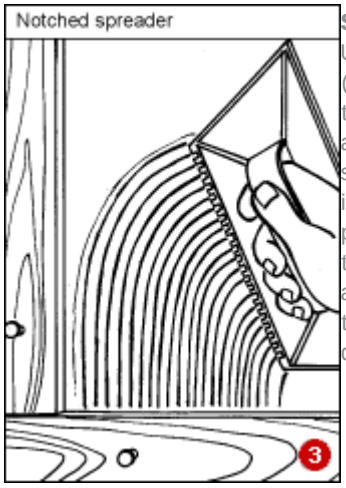
Step 3:
Mark a vertical line down the centre of the wall, using a plumb bob and line. Use the gauge stick again to set out the vertical rows on each side of this line.

If the border tiles measure less than half a tile width, move the rows sideways by half a tile. Fix another guide batten against the final vertical line.

Since very few lines or fittings in a house are truly horizontal or vertical, you will probably have to cut 'filler' tiles to fit in odd areas around skirting boards, architrave and corners between walls.

5 - Laying the tiles

Most ceramic tile adhesives can be bought ready-mixed and some can also be used for grouting between the tiles.



Step 1:
Use a notched spreader (normally supplied with the tile adhesive) to apply the adhesive evenly over the surface to be tiled. The ridges in the adhesive allow for positioning and bedding of the tiles. Cover an area of about 1m² (1yd²)at a time, to prevent the adhesive drying out.

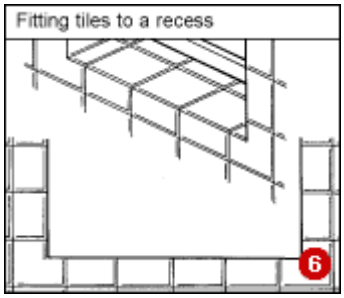
Step 2:
Start with the first tile in the corner formed by the two guide battens, pressing it until it is firmly fixed. Continue by adding the tiles on each side, building up three or four rows at a time. Use spacers between the tiles if they are not the self-spacing universal type.

Continue with successive rows of tiles until the whole area has been built up, applying new adhesive as and when required.

Periodically, use a damp sponge to wipe any excess adhesive from the surface of the tiles.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Step 3:
The guide battens can be removed after 12 hours and the cut filler tiles fitted (see 'Cutting tiles to fit').



Tiles in a window recess, and particularly on a window sill, should be laid to overlap the wall tiles.

Better still, use plastic edge trim to give a neat quadrant moulding between the two surfaces and to protect the edges from accidental knocks and chips.

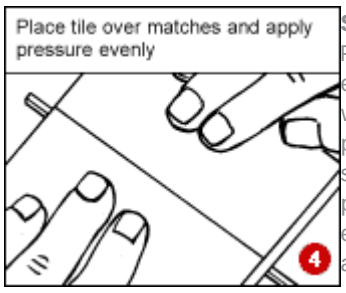
Edge trim is supplied in 1.8m lengths, in a variety of colours to suit tiles and grouting. It is the same thickness as standard tiles and is simply bedded into the tile cement under the top surface tiles.

6 - Cutting tiles to fit

Step 1:
To mark each filler tile, place it face down, partly overlapping the tile next to the space and butting up against the adjacent wall or ceiling. On the edge of the tile mark where it needs to be cut (taking account of spacing), using a sharp chinagraph pencil or child's crayon. Turn the tile over and draw a line between the two edge marks with a ruler.

Do not use felt-tip pens for marking out. The ink may run into the unglazed portion of the tile and may also bleed into the grouting and discolour it.

Step 2:
Using a steel rule as a guide, score along the marked line with a tungsten-tipped cutter. Make one good strong stroke to penetrate the glazed surface of the tile.



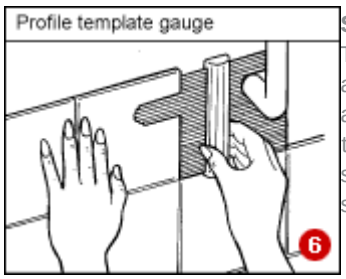
Step 3:
Place tiles glazed side up over either matchsticks or a thin wooden kebab-type skewer, placed directly under the scored line. Apply even pressure with the hands either side to snap the tile along the scored line.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Alternatively, use a tile-snapping tool with the jaws directly aligned with the score mark or use a platform cutting table with a scoring wheel to score and snap the tiles.

Where you need to remove thin strips of tile, and even pressure cannot be successfully applied to snap it, nibble away at the excess tile with a pair of tile nibblers.

You may have to break the tile away in several smaller pieces along the score line, and the cut edge may require smoothing with a tile file.



Step 4:
To fit tiles around shaped areas such as a washbasin or around a pipe, use a profile template gauge to copy the shape and transfer it to the surface of the tile.

Alternatively, use card cut-outs to trace the shape onto the tile. Grip the tile firmly, but without excessive pressure, in a wooden vice or in the jaws of a Workmate, then cut to shape with a tile saw. This has a blade like a thin round file, which is held in a frame similar to a junior hacksaw.

When working in confined spaces, it is often easier to apply adhesive to the rear of the tile rather than to the wall - especially when fitting filler tiles.

7 - Grouting

Grout can be applied 24 hours after tiling. Professionals use a 'squeegee' type tool, but a piece of dense foam sponge or a rubber spreader are also suitable.

Step 1:
Use the spreader to force the grout into the gaps between the tiles. Spread in all directions to ensure the gaps are well filled.

Step 2:
After covering the surface area to be worked, wipe away the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

excess grout with another sponge, rinsing it frequently in a bucket of clean water.

To give an even, polished finish to the grout, use a piece of dowel to run down the grout lines, to ensure an even depth and thickness to the grouting lines.

Step 3:
When the grout is dry, polish the tiled area with a soft cloth or rolled-up ball of newspaper.

8 - Drilling tiles

Certain bathroom fittings such as hooks, soap dishes and rings are made as ceramic tile inserts. However, you may wish to add screwed-on towel rails or similar fittings.

Step 1:
First mark the hole position in chinagraph pencil.

Step 2:
With a hard, pointed tool (a centre punch or hole-boring tool), make a dimple in the tile. This will score the surface as a starting point for your masonry drill.

Step 3:
To prevent the drill point from slipping when starting up, cover the area with masking tape and drill through this, using the dimple as a starting guide.

To prevent the tile from cracking when tightening a screw fixing, make sure that the wall plug is fully seated in the wall behind the tile. Tightening a screw expands the plug in the hole. If the plug is still seated within the tile, the tile may crack.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Welcome to our decorating guide, in this part of the guide we will take you through the process of decorating a ceiling, we take you through the process from hanging lining paper to hanging the ceiling covering.

To complete this task you will need the following items:	
• Ceiling Covering • Lining Paper • Appropriate Paste • Stanley Knife (trimming knife) • Pair of suitable Scissors • Sponge • Tape Measure • Paste Brush • 2 Trestle tables (or step ladders) and two scaffold boards	• Paperhanging brush • Decorating table (pasting table) • 1 Bucket for the Paste • 1 Bucket of Clean Water • Wooden Stick (to mix the paste) • Wallpaper Seam Roller • Soft nib Pencil • Broad knife Trimming Tool • Rule

When working at heights always ensure that the structure is safe and secure. Never stretch out, always get down and re-position the scaffold.

Lining Paper

Why use lining paper?

It is worth the extra effort of using lining paper to give a better finish, especially if the ceiling has imperfections that may protrude underneath the covering.

Lining paper needs to be hung at a 90º angle to the final covering paper, this stops the edges of both papers lining up and protruding, it also reduces the risk of the final covering upseating the first.

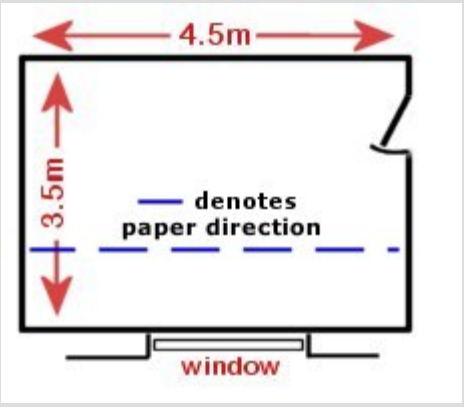
First we need to decide how many rolls we need, take your tape measure (steel) and measure the run of the room (in this case the length of the room), add 10cm (100mm) onto this measurement.

Now measure the width of the room (remember to take into account any alcoves you may have).

Next note the width and length of the lining paper.

Roll Calculation:

1. Divide the roll length by the run length to give the number of lengths per roll --call this **A**--
2. Divide the width of the room by the roll width to give the number of lengths required



Using the measurements of the example room above we will work out how many rolls of paper are needed.

Note: We are running the lining paper along the length of the room, the reason is so when we hang the top covering at 90º it will be runnning from the window eliminating shadows along the joins.

For example purposes we will presume that our rolls of paper

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

--call this **B**--

3. Divide **B** by **A** to give the number of rolls required, it is better to go slightly over than under.

See the example on the right.

have the following dimensions:

- Roll Length: 10m
- Roll Width: 50cm (500mm)

and the room has the following dimensions:

- Room Length = 4.5m + 10cm (100mm) waste = 4.6m run length
- Room Width = 3.5m

So our calculation is:

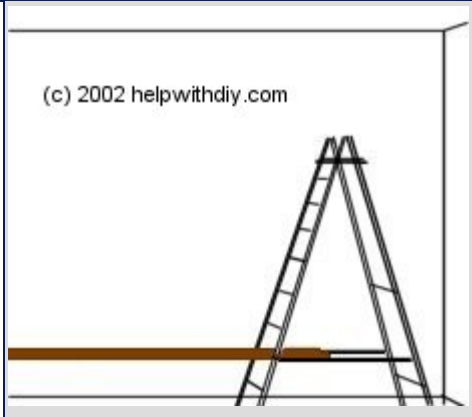
1. Divide 10m (roll length) by 4.6m (run length) = 2.1 runs to a roll (approx, it is always best to allow a bit).
2. Divide 3.5m (room width) by 0.5 (roll width) = 7 pieces (runs) are needed.
3. Divide 7 by 2.1 = 3.5 rolls.

So we need 3.5 rolls (4 rolls).

Preparing the Ceiling for application

Firstly make sure your trestles and boards are set at the right height and are safe and secure.

If the ceiling has an old covering then remove it making sure to get rid of everything (pay close attention to light fittings, paper tends to get caught underneath), wash down the ceiling with sugar soap (or similar), check for loose plaster and replace where necessary. Remove any loose paint, and fill any holes or cracks in the ceiling. If the plaster has a gloss finish then sand it down with a suitably abrasive sandpaper (glasspaper).



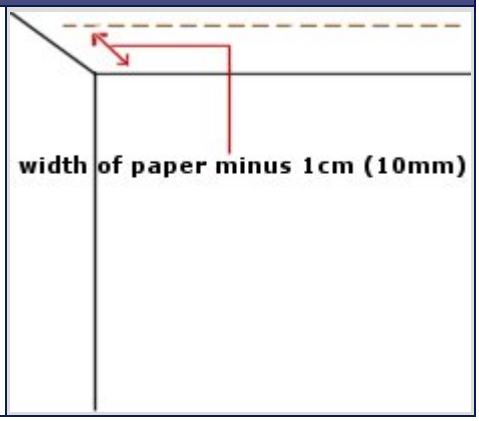
Here we see the one side of the setup, the ideal height means that you can stand on the board and put the palm of your hand against the ceiling with your arm slightly bent. Most importantly make sure it is safe and secure.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Hanging the Lining Paper - Part 1

First it is best to get a guide marked on the ceiling which can guide you when you hang your first piece, to do this decide which end of the room you are going to start, take your tape and measure the width of the paper, then deduct 1cm (10mm) and mark this distance out from the wall at each end of the run.

You can then take a chalk line and chalk a line between the 2 marks, or if you don't have a chalk line then you can place marks at intervals to guide you when you hang the paper.



Hanging the Lining Paper - Part 2

Next it's time to mix the paste, paste normally takes around 15-20 minutes to develop the right consistency. If we mix the paste now then it should be ready by the time we are ready to use it, although **always follow the manufacturers guidelines**.

Now we cut the paper, measure the paper (remembering to add 10cm (100mm) extra) and cut as many runs as you need.
Note: If you are using patterned paper check the manufacturer's instructions for any special pattern matching information.

When you have cut each run, check the time to make sure you have allowed sufficient time for the paste. Lay the runs onto the table with the face down, you will probably find it helpful if you have any clips to clamp the paper to the table while you work.

When you paste work from the middle out towards the edges, when you have completed the section on the pasting table pull the unpasted section onto the table, it is sometimes a lot easier to work with if you fold the pasted section in a concertina effect (**never crease along the fold**) as you are pulling the dry section onto the table, this also makes things a lot easier when you come to hang it !

Now leave the paper to soak (see manufacturer's instructions)

Hanging the Lining Paper - Part 3

Now we can hang the first piece, you will need your scissors, stanley knife and wallpapering brush (to smooth the paper).

It is important to get the first piece in position pefectly as this piece will dictate the position of the rest of the runs.

Unfold the paper to a comfortable size to work with, starting at the end furthest from the window (if it is the top covering) or the other wall (if it is lining paper) place the paper against the ceiling in line with the guide marks you made earlier, allow around 5cm (50mm) overhang at the end.

Now slowly moving along the plank smooth and align the paper as you unfold it, making sure you remove all the trapped air with your wallpapering brush as you go.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

If you are going to paper the walls next then when you reach the other end of the room leave around an 8mm overhang, if you are not papering the walls then run a pencil along the edge, then pull the paper back enough for you to trim it to the pencil line, now smooth out the paper with your wallpapering brush. Repeat at each end.

Now repeat the process with another section, this time butt it against the first piece, the first piece will be your guide line. If you are hanging patterned wallpaper then ensure the pattern is matched correctly (see manufacturer's instructions).

Now hang the remaining lengths, the last piece you hang will probably be narrower than the width of the roll, in this case measure how wide you need the piece, add on 5cm (50mm) and then cut a run to that width measurement, paste it and hang it butting up to the last piece you hung, then simply trim the piece using a pencil and scissors.

After the paper has dried a bit go along the edges with your seam roller to smooth them, if you are hanging an embossed covering try using a clean dry paint roller instead as this will not flatten the paper as much.

When you have smoothed all the edges take a damp sponge and lightly clean the paper to remove any excess paste at the joins.

If you have followed this guide to hang the lining paper, then to hang your top covering simply follow the instructions through again but this time start with the run going away from the window. Allow 24 hours for the lining paper to dry.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

To complete this task you will need the following items:	
• Wallpaper Scraper • Bucket and Sponge • Wallpaper Steamer (optional)	• Filler (if required) • Sandpaper (if required)

When working at heights always ensure that the structure is safe and secure. Never stretch out, always get down and re-position the scaffold.

Removing Old Wallpaper (normal coverings).

First take your wallpaper scorer and go round the entire room gently scoring the old paper ensuring not to damage the plaster beneath.

Next go back around the room soaking the paper with warm soapy water (or your wallpaper steamer), start from the bottom of each width of paper and work your way up to the ceiling.

Now go back to the area where you started and re-soak 3 widths of paper, then take you wallpaper scraper and starting at the bottom of the first width scrap the paper ensuring not to damage the plaster (see **Fig 1.1**), work your way up to the ceiling removing all traces of paper from the wall. Now move onto the next width and repeat the process.

When you have finished the second width re-soak (or steam) the next 3 widths so they will be ready for stripping when you get there.

Now work your way around the room re-soaking as necessary removing all traces of paper.

Fig 1.1

Removing Old Wallpaper (vinyl Coverings).

Some vinyl coverings can be simply peeled off the wall, to do this take your wallpaper scraper and lift one corner of a width and pull firmly, the paper should come away from the wall fairly easily (see **Fig 1.2**). Once you have peeled all of the vinyl away wash down the wall with a suitable detergent to remove any old adhesive left by the covering.

Other vinyl coverings have a paper backing, to remove these coverings lift one corner and pull the vinyl away from the backing paper, then soak the backing paper and remove as you would normal wallpaper (see above).

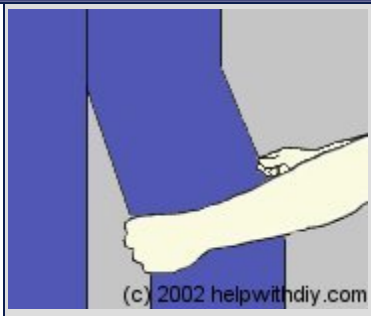


Fig 1.2

Light Switches and Electrical Sockets

Isolate the power at the main fuse box and then remove the face plate with the securing screws this will allow you to remove any old paper that is stuck behind the socket/switch. Replace the face plate when finished.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Finishing off

Finally inspect the walls for cracks, holes and any loose plaster.

For small cracks use a suitable fine filler, for larger cracks and holes use a stronger more suitable filler (see manufacturer's instructions).

To check for any loose plaster, tap the wall around any suspect areas and remove any loose flaky plaster.

When filling try and leave a nice smooth finish, it is better to leave the filled area slightly proud of the surrounding area and then sand down with a fine sandpaper and sanding block (see **Fig 1.3**) until flush.

Fig 1.3

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

WALLPAPERING TECHNIQUES

SKILL LEVEL

Wallpapering is a skill that develops with practice. If you are a beginner, leave papering stairwells and ceilings until you are reasonably competent.

SAFETY FIRST

Take care when working on ladders, and do not overreach.

INTRODUCTION

Wallpapering is one of the most popular ways of changing the appearance of a room.

Modern materials make decorating much easier for beginners. The extensive range of wallcoverings available means that you can change the colour, pattern and texture of your walls with ease. With practice you will be able to paper even the most difficult areas of your home with confidence. Wallpapering is usually the final stage of decorating a room after painting. From solid colours to sophisticated prints to patterned papers for children's rooms, wallpapering is a simple, versatile and effective way of refreshing any space in the house.

- When planning your decor, don't forget we stock a wide range of coordinating borders, trims, blinds, lighting and tiles as well.
- B&Q wallpapers also come in easy-clean waterproof vinyl for high-splash areas like kitchens and bathrooms.

2 - Measuring

Use the chart below to estimate the amount of wallpaper you are going to need. Allow and calculate extra when using a paper with a large repeating pattern.

HOW MANY ROLLS FOR THE WALLS?

DISTANCE AROUND ROOM (INCLUDE DOORS & WINDOWS)	WALL HEIGHT 2.3-2.4m (7ft 6in-8ft)	2.4-2.6m (8ft-8ft 6in)	2.6-2.7m (8ft 6in-9ft)
10m (33ft)	5 rolls	5 rolls	6 rolls
12m (39ft)	6 rolls	6 rolls	7 rolls
14m (46ft)	7 rolls	7 rolls	8 rolls
16m (52ft)	8 rolls	8 rolls	9 rolls
18m (59ft)	9 rolls	9 rolls	10 rolls
20m (66ft)	10 rolls	10 rolls	11 rolls

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

For a more accurate estimate, calculate the area of your walls, using the method outlined below.

Step 1: A standard roll of wallpaper is approximately 10.5m (33ft) long and 530mm (1ft 9in) wide. If you measure the height of the walls from skirting to ceiling, you can work out how many strips of paper you can cut from a standard roll - four strips is about average.

Step 2: Measure around the room (ignoring doors and windows) to work out how many roll widths you need to cover the walls. Divide this figure by the number of strips you can cut from one roll to calculate how many rolls you need to buy. Make a small allowance for wastage.

When buying wallpaper, ensure that all of the rolls have the same batch number to be certain that the colours match. Keep your receipts so that you can return unused rolls.

3 - Preparing the surfaces

Walls should be clean, dry and sound. You can paper directly over painted surfaces, as long as you have washed them thoroughly with sugar soap.

Remove peeling or damaged wallpaper

Stripping wallpaper is a messy job, so take up carpets or cover them with dust sheets. Take all the furniture out of the room or group it together in the middle of the floor and protect it with more dust sheets.

Use warm soapy water (or water with paper stripper) to soften old absorbent wallcoverings, then use a wide stripping knife to scrape the paper off the wall. A steam-generating wallpaper stripper makes the job even easier. When removing painted wallpapers or washable wallcoverings, scratch the surface with a wallpaper scorer to enable the moisture to penetrate.

You can peel vinyl wallcoverings off the wall, leaving the backing paper behind. If it is sound, just paper over the backing, or strip it like ordinary wallpaper.

Repair damaged plaster

Repair damaged plaster with a fine surface filler. Rake loose material from deep cracks and holes, then pack filler into all the crevices, using a flexible filler knife.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

When the filler is dry, sand it smooth with medium-grade abrasive paper.

Size newly plastered walls with a 'proprietary size' or diluted wallpaper paste to make sure paper will adhere.

4 - Cutting and pasting wallpaper

Step 1:
Mix wallpaper paste in a bucket. Instructions on the packaging will give you a guide to the strength and amount of paste you need for the type of paper you are hanging.

Use fungicidal paste to prevent mould from growing behind vinyl or blown vinyl.

Step 2:
Measure the height of the wall to ascertain the length of the first strip, adding about 100mm (4in) for trimming top and bottom. Cut similar lengths from the roll. If your paper is patterned, you may have to allow extra for matching the pattern on adjacent strips - check before cutting.

When cutting wallpaper strips from a roll, first mark or nick the edge of the paper at the required length. Then fold the paper over at this point, aligning the side edges carefully, and slit along the crease with a metal ruler or wallpaper scissors.

Step 3:
Lay the cut strips face down on your pasting table. To prevent the strips curling while you apply the paste, tuck the free ends of the paper behind a piece of string tied between the legs of the table.

Step 4:
Align the top strip with the front edge of the table and, using a wide pasting brush, apply the paste evenly, first down the centre of the strip, then brush it out towards the front edge. Slide the strip across to align with the back edge of the table and brush on more paste towards that edge. Make sure both edges are well covered.

Try not to get paste on the front side because it can leave marks.

Fold the pasted section over, pasted side to pasted side, and

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

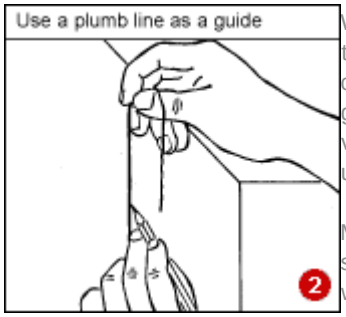
slide the paper along the table to paste and fold the other end in a similar way. Use this method to paste subsequent strips of paper and keep your pasting table clean.

Keep your pasting brush clean by resting the bristles on string tied across the top of the paste bucket.

You may have to leave some heavyweight papers to soak for a short while before hanging them. Check the manufacturer's instructions.

5 - Hanging wallpaper - Basics

Step 1:
If possible, start by papering a wall that contains neither door nor window. Begin at one corner, working away from the window. When hanging paper with a large regular pattern, start at a central feature such as a chimneybreast.



Walls and corners are rarely true or square, so they cannot be relied upon as a guide. The trick is to mark a vertical guideline on the wall, using a plumb line.

Mark the line on the wall, slightly less than one roll width away from the corner.

Step 2:
Unfold the top half of the paper and lightly press it to the wall using a paperhanger's brush.

Step 3:
Slide the strip to align its edge with the plumbed line on the wall. Allow the paper to overlap the ceiling by about 50mm (2in). Brush out from the centre to exclude air trapped under the paper. Unfold the bottom half and brush it into place in a similar way.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Step 4:
Using the back of your wallpaper scissors or sharp knife, score a line along the corner between the wall and ceiling. Peel back the paper and cut along the crease to remove the waste, then smooth the paper back into place. Use the same method to trim the strip to length at skirting level.

To avoid tearing wet wallpaper, put a new blade in your craft knife or scalpel.

Step 5:
Hang the next strip beside the first, making a neat butt between them. At the same time, slide the strip up or down to align any pattern motif. Keep checking that the match is accurate as you brush the strip into place.

As you proceed, wipe excess paste from the ceiling and skirting, using a damp sponge. Similarly, wipe smears of paste off the surface of the paper. Run a seam roller along the butt joints to make sure they are stuck down, and that your wallpaper is flat.

Disguise a less-than-perfect line at the ceiling by pasting a narrow, patterned border along the top of the wall

6 - Hanging wallpaper - Around switches

When you get to a light switch, make two diagonal cuts across the centre of the faceplate, running from corner to corner. Tap the paper in around the faceplate and trim off most of the waste with scissors.

Turn off the electricity at the consumer unit and loosen the faceplate so that you can tuck the paper behind it. Turn the power on again when the paste is dry.

Paper around flush wall sockets in a similar way: cut the wallpaper to butt against the mounting box of a surface-mounted socket or switch. Cut the diagonals with scissors and use a sharp knife to trim off the waste.

Use the pasting brush to stipple the paper down firmly

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

around the edge of the mounting box.

7 - Hanging wallpaper - Papering around doorways

When hanging the strip of paper next to the door, butt it against its neighbour in the usual way, allowing the other edge to overlap the doorframe.

Make a diagonal cut in the waste towards the corner of the doorframe.

Brush the paper down against the side of the frame, make a crease with your scissors and cut off the waste.

Smooth down what's left of the strip above the door, then trim off the waste, leaving a 12mm (1/2in) overlap pasted to the top of the frame.

Continue with short strips over the door, hanging the next full strip down the other side of the doorframe. Crease and trim off the waste as before

8 - Hanging wallpaper - Papering around windows

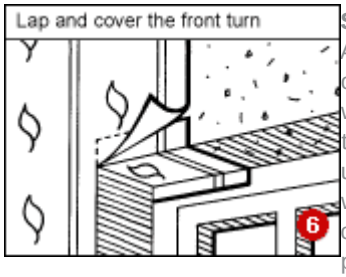
If your windows are more or less flush with the internal face of the wall, paper up to the window frames as if you were papering around a door.

When a window is set back into the wall, it leaves a narrow strip of wall all around, known as the 'reveal'. There is a specific technique for papering a reveal:

Step 1:
Hang the full strip of wallpaper adjacent to the window and make two horizontal cuts in the paper overlapping the reveal, one just above the top and another along the underside of the sill. Fold and brush the flap of paper onto the side of the reveal. Crease and trim off the waste at the window frame.

Step 2:
Brush the paper into place below the window, trimming to fit as required.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Step 3:
At the top, cut a small piece of wallpaper to match the width of the overlap above the reveal. Paste this to the underside of the reveal and wrap it around the front corner, tucking it under the paper pasted above. Trim off the waste next to the window frame.

Where one piece of thick paper overlaps another, cut through both layers with a sharp knife to make a matching butt joint. Remove the waste and press down the joint with a seam roller.

9 - Hanging wallpaper - Papering corners

Papering internal corners
Trying to wrap a wide strip of wallpaper around a corner invariably results in unsightly creases. The answer is to cut the strip of paper lengthwise, allowing 12mm (1/2in) only to turn the corner.

If the offcut is wide enough, paste it onto the adjacent wall, covering the overlap in the corner. Mark a plumbed guideline on the wall to make sure the offcut is vertical.

Papering external corners
When taking wallpaper around an external corner, cut the strip to width, leaving a 25mm (1in) overlap to wrap around the corner. Hang the offcut on the adjacent wall so that it overlaps the turned edge by about 12mm (1/2in).

10 - Hanging wallpaper - Papering behind radiators

Ideally, you should drain a radiator and take it off the wall so that you can paper behind it. If that is not possible, first turn off the heat and wait for the radiator to cool. Paste the strip of paper to the wall above the radiator. Then slit it from the bottom edge so that you can smooth it down on either side of the radiator's fixing brackets. Press the paper into place behind the radiator, using a narrow radiator paint roller.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

WATERPROOF YOUR ROOF

SKILL LEVEL

If you are scared of heights don't attempt to repair your roof. If, however, you are confident at working from ladders and lightweight scaffolding towers, then the jobs described here aren't difficult.

SAFETY FIRST

Ladders or scaffolding must be tied into the building and placed on firm ground. Get someone to support the bottom until you have tied the top. Use a ladder stay to give a good point of contact with the building. Warn everyone that you will be working on the roof, and erect barriers to keep people away. Anyone working below should have a hard hat.

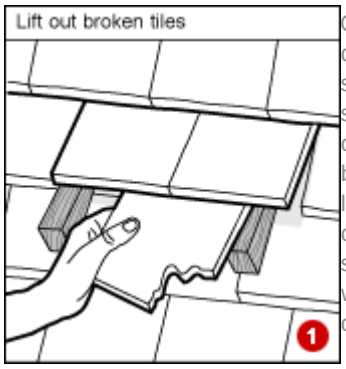
INTRODUCTION

Leaking roofs can damage the interior of your home. Fortunately there are lots of user-friendly products which will help to keep the weather out.

Repairing leaks in roofs is normally the easy part. Finding out exactly where the leak is can be more difficult. Water can travel along the underside of beams and creep between close-fitting layers of roofing material, so the damp patch won't always appear directly below the leak. Eliminate all the possible causes one by one, rather than jumping to conclusions.

2 - Detecting leaks

The most difficult place to detect leaks is on a flat roof. Often, the only answer is to completely coat the roof with a waterproofing solution.



On pitched roofs the job of detection should be easier since you can identify slipped slates and tiles from the outside. Remove and replace broken tiles by carefully lifting them clear of the nibs on which they rest. It can sometime help to insert wooden wedges under the overlapping tiles first (1).

Use a pair of binoculars to inspect your roof every year.

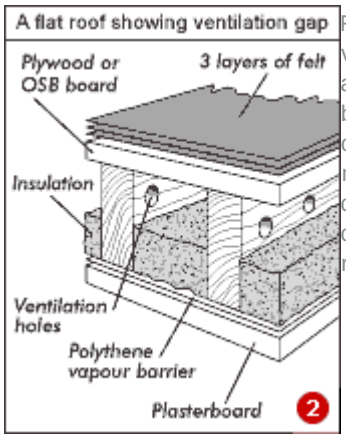
Leaks around chimney stacks are notoriously difficult to diagnose. The most obvious cause is rain coming in from the top, or leaking flashings letting rain in around the sides. However, this might not turn out to be the case. Often the cause of the damp is condensation within the flue. By the

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

time this is discovered, a great deal of time, effort and money might have been wasted sealing the flashing and capping the pots.

3 - Condensation

If moisture vapour from the house (which travels through ceilings) is trapped in an unventilated space it will cause dampness through condensation. This can happen in lofts, disused chimneys or above the ceilings in flat roofs.



Flat roofs must have enough ventilation to keep the space above the insulation and below the waterproof felt free of airborne moisture (2). If moisture builds up it will cause damp patches on the ceiling and blisters in the roofing felt.

Disused chimneys must be ventilated with an air inlet at the bottom and an outlet at the top. If this isn't done airborne moisture from the house will find its way into the chimney and condense on the colder inside. This results in damp and soot being drawn through the brickwork to form damp patches on the chimney breast.

A cold spot often found in the corner of bedrooms with sloping ceilings, is due to the loft insulation being pulled back to keep the loft ventilated. In some cases, there might be no insulation at all in the short sloping part of the ceiling, which means it is a natural place for condensation to form.

One cure for condensation is to remove airborne moisture through better ventilation using extractor fans or a dehumidifier.

4 - Flat felt roofing

Flat roofs should never be level. The water should run away quickly.

Puddles and low spots

If the water collects on one part of the roof it is likely to leak through. If you can't fill the low spots with trowelling-grade mastic, or build it up with two or three layers of felt, create

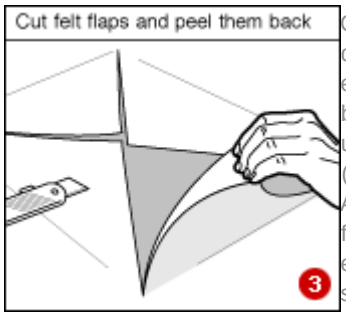
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

a small section of new roof over the old one. Use a sheet of polystyrene stuck to the existing felt with bitumen.

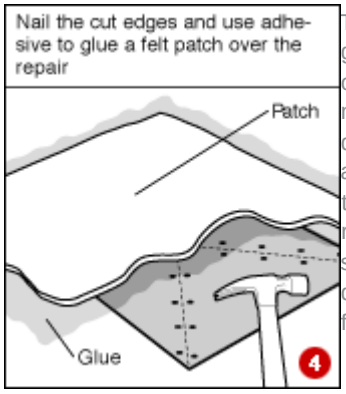
Cover the top of the felt with plywood and lay felt over the plywood. Make sure the felt is long enough to run down the sides and at least 150mm (6in) onto the roof. Stick the felt onto the existing roof with cold-lay adhesive or hot mastic to create a watertight seal.

Blisters

If you have small blisters on a flat roof that aren't leaking, your best option is to leave them alone and use a solar-reflective coating to keep the surface cool during the summer. If the felt has broken or looks like it might soon break, then it must be repaired.



Cut back the felt with four diagonal lines to create envelope flaps. Gently peel back the felt and expose the underlayer of roof decking (3).
Apply a generous coating of felt adhesive and lay the cut edges into the adhesive, squeezing out any excess.



Tack the flaps with galvanized felt nails, otherwise known as clout nails. When this layer has dried, apply more adhesive and stick a patch of felt over the top so it overlaps the repair by 150mm (6in) on all sides (4). To help it stick down, place some slabs on it for a few days.

5 - Repair tape

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Flashing and joins to vertical upstands can be covered by flashing repair tape. Be sure to apply enough pressure when pressing it in place in order to get rid of any trapped air underneath (5).

6 - Stopping heat damaging felt

Dark-coloured felt will attract a great deal of heat in the summer and if the flat roof has insulation underneath, the temperature can only escape upwards. To counteract this white stone chippings are often used to reflect the sun. The problem with chippings however, is that if anyone walks on the roof, the chippings can get pressed through the felt and can cause leaks. Another way of protecting the felt is to use solar-reflective paint which is made specifically for this purpose (6).

The paint can be applied by brush or roller in a single coat. Any flat roof regardless of whether it leaks or not, will have its life extended by the application of solar-reflective paint.

7 - Applying waterproofer

Waterproofers come as water-based emulsions for use in fine weather and solvent-based paints, which are suitable for use in the winter months, or when it looks like it's going to rain before the coating is dry.

Before applying waterproofer clear all traces of algae and moss off the roof using a fungicide and moss killer. It can take several days to kill off the roots.

Brush the roof with a stiff broom and apply the first coat of waterproofer. If you are applying a bitumen emulsion, it is best to dip the brush in water from time to time to improve the flow. When the first coat is dry, apply a second coat in the opposite direction.

8 - Laying new felt

If you are re-felting part of your home use a high-performance polyester felt. If you are felting a shed or garage you can use cheaper traditional felts. These don't

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

have such a good life expectancy.

The traditional way to felt a roof is with three layers laid on top of each other. Each layer must start from the lowest part of the roof so the laps are stepped in the right direction to shed the rain on to the next sheet. Over timber decks the first layer should be nailing preparation-layer felt specially made for this purpose.

Make sure that the joins in each layer are not directly above each other. They should be at least 150mm (6in) apart.

Stick the second layer of felt onto the first with a continuous layer of hot bitumen or cold-lay adhesive.

Where the roof meets a vertical wall, you will need to cut strips of felt to lay over the top of the horizontal layer and up the wall. You will then need a piece of felt or flashing to insert into a chiselled-out mortar joint in the brickwork. If you can't do this, use repair tape (Flashband) stuck over the top.

9 - Mastic sealants

Gun-applied mastic sealants can be used to stick down the edges of roofing felt and reseal flashings around chimneys. Make sure the surfaces to be stuck are clean and dry.

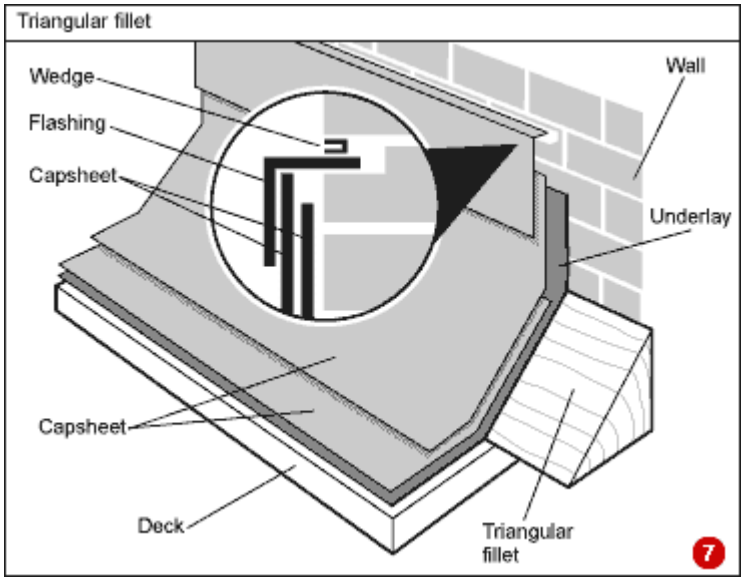
Wedge loose flashing by hammering small strips of lead into the brick courses.

Use flashing repair tape to cover splits and gaps.

10 - Applying self-adhesive roofing felt

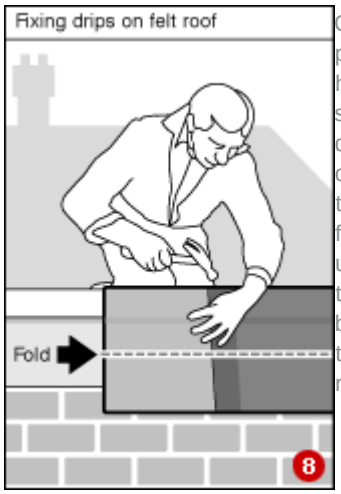
Apply a two-layer high-quality roofing felt with a self-adhesive backing. Once laid the heat from the sun helps to stick the felt down. Make sure the surface is clean and dry. The roof board should be run with a slope to shed the water. Use triangular wooden fillets at the edges next to walls so the felt doesn't have to run into an acute corner (7).

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



Apply the sealer/primer to the roof board with a brush or roller.

Once dry lay the first layer of felt onto the roof. Roll back to halfway and cut the backing paper so you can peel it off.



Gently tread the felt down as you pull off the paper. When the first half is stuck down, repeat for the second half, then stick down the drip edge pieces. These will run over the edge of the roof and into the gutter. They should be nailed face down and then folded upwards to form a double thickness drip over a wooden batten (8). If you aren't sure how this is done, look at a few flat roofs in your area.

When the drip edge is in place, the top layer of felt can be run down over the existing felt. Stagger the joins in the second layer so they are not in the same place as the joins in the first layer.

If you have lapped felt over the green mineral dressing, use mastic to fill the granular surface so the felt has an even bed to stick to.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

WIRING A JUNCTION BOX

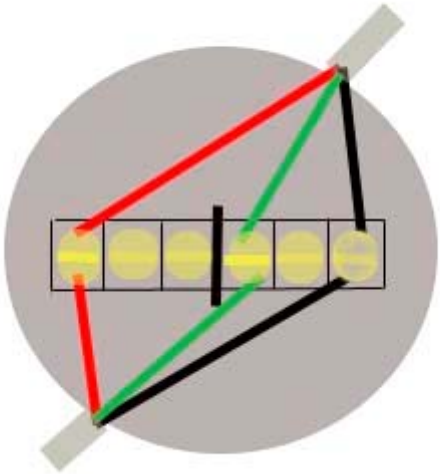
Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

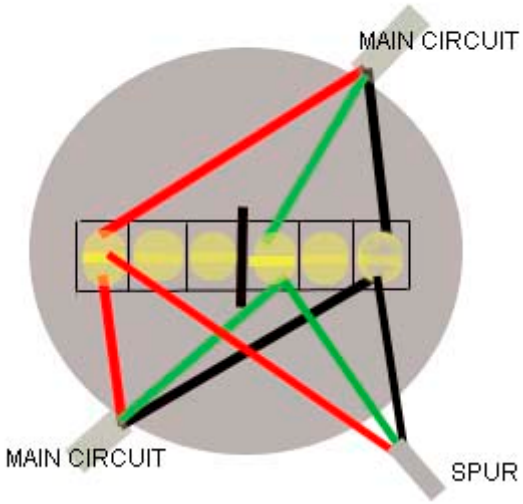
Junction boxes can be used to connect additional sockets to circuits, add lighting points, extend circuits, and in general they are a way of getting power from an existing source and taking it somewhere else. They can also be used for repairs.

Junction boxes are rated in amps to protect them, you and the circuit. Make sure you have the right box for the right job. A **ring main** or **radial circuit** will need a 30 amp junction box, **a lighting circuit** (although you can buy 5amp junction boxes) will need a 20amp junction box. Junction boxes come with either 3, 4, 5 or 6 terminals so work our which you will need to complete your project. To use junction boxes to add **lights and switches** please see our project.

Double checking that the power is off connect your junction box as shown below.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/



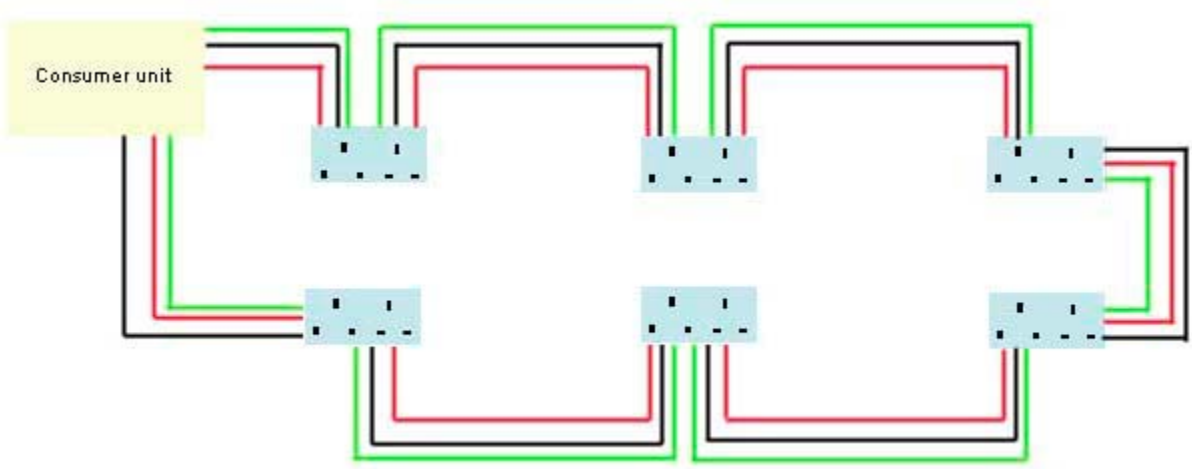


Junction boxes must be fixed solidly to a firm, suitable surface and must be accessible. This does not mean they have to be visible and can be fixed in floor or roof voids. Accessible means to a builder or electrician who can easily remove part of the floor or ceiling etc. Junction boxes may not be buried in plaster.

Please also check the rules very carefully for ring mains and radial circuits. You are limited in the length of cable you are allowed to use in both circuits and long spurs could make you exceed the limit. If this is the case you are asking the circuit to use much more energy than the circuit is designed for. More energy = more heat and cables can catch fire. Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

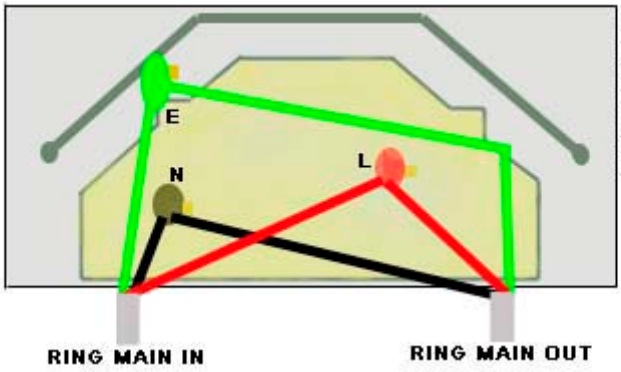
Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

WIRING A RING MAIN



A ring main is exactly what it says on the tin. It is a ring of wires, circling your home, carrying the mains electricity to sockets on the way. It gets the power from the **consumer unit** delivers it to the sockets. As both ends of the ring are connected to the same terminals at the consumer unit, the current runs in both directions imposing less of a load on the cables. Electricity loses power over long lengths of cable and trying to put too much power through a cable which is not designed for it, is dangerous, so a ring main delivers power from both ends to keep the load as light as possible.

The back of a socket on a ring main looks like this.



BACK OF DOUBLE SOCKET IN A RING MAIN. PLEASE NOTE THIS IS ALSO THE SAME IN A RADIAL CIRCUIT EXCEPT FOR THE LAST SOCKET

The other type of circuit used to power your home is a radial circuit. There are not so common and can easily be turned into a ring circuit. See our project on **radial circuits.**

There are still restrictions on how much power and for how long, a ring main may carry. This is reflected in the maximum distance a cable may be used for and the fuse rating it is given. All the equipment below is rated for a ring main.

A separate ring main is usually installed on every floor of the house to make sure things are kept safe and it is only when, for example, a **spur** (additional socket) is added on an upstairs ring main, to feed a socket or light on a downstairs circuit, that things can get tricky. Please read our project called **Part P Building Regulations.**

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

A ring main uses 2.5mm cable comprising of a live, neutral and earth. This is called two core & earth cable. The 2.5mm is the measurement of the cross sectional area of the cables.

The floor area a ring main serves is also governed. This is because the regulation people have some idea of how much power and lighting we can expect to use in such an area. The maximum area for a ring main is 100 square meters. An average house has a footprint of about 64-70 square meters so this allows for the continuation of the ring into a porch or garage etc. The ring main must be protected by a 30amp fuse if it is on a cartridge fuse board, or a 32amp MCB fuse.

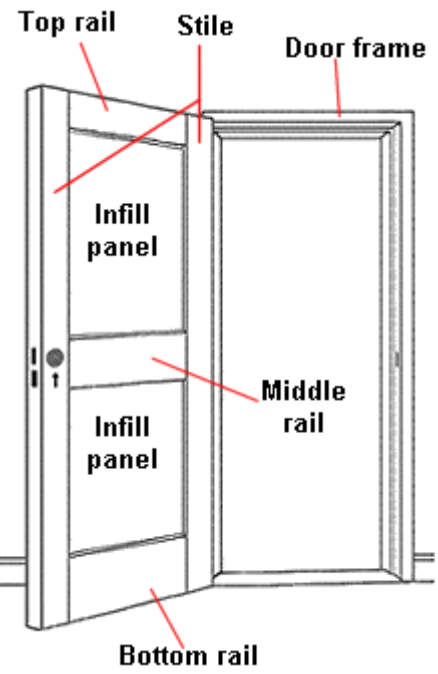
The cable itself can be up to 60 meters long if it is protected by a cartridge fuse and 50 meters long if protected by an **MCB**.

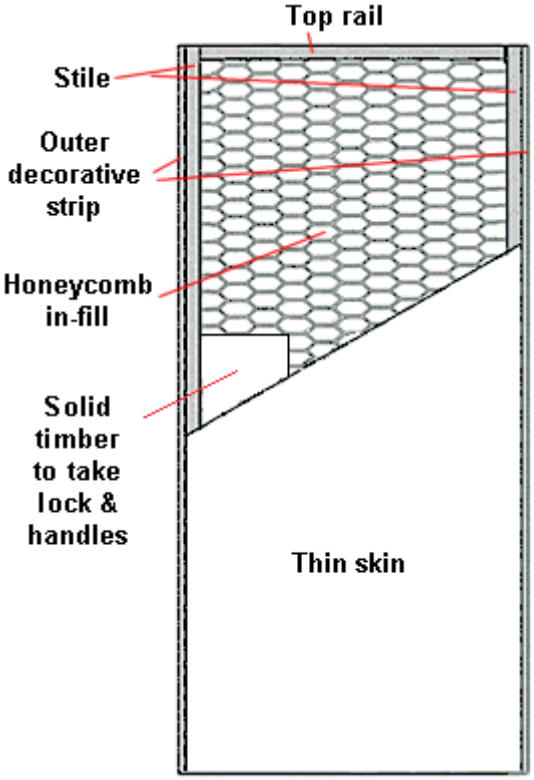
There is no limit to the number of sockets you can have on a ring main but there is a limit to the number of spurs you can have from those sockets or from the wiring between them. See our project on **adding an extra socket**. You can also **extend the ring main** if you need to.

Units or appliances which use a lot of power, like cookers and showers must be installed on their own circuits so please check the appliances you are considering using on your ring main. It is also a regulation that any socket which is capable of being used to supply power outside of the house is protected by an **RCD**. Most modern consumer units will provide this protection but again it is vital that you get a qualified electrician to check and approve any installation you may consider.

Please also check the rules very carefully for ring mains and radial circuits. You are limited in the length of cable you are allowed to use in both circuits and long spurs could make you exceed the limit. If this is the case you are asking the circuit to use much more energy than the circuit is designed for. More energy = more heat and cables can catch fire. Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/





Wooden Interior doors

standard sizes - panel doors - hollow doors - glazed doors imperial/ metric equivalents

Two basic features define internal doors:

- Height, width and thickness
- Method of construction

Doors standard come in a number of sizes:

- Width - 24, 28, 30, 32, 34, 36 inches (each designed to fit openings between 1/4 inch less to 5/8 inch greater)
- Height - 78, 80, 82 inch
- Thickness - 1 3/8, 1 3/4 and 2 inch
  For a replacement door, the correct thickness should be chosen to avoid the need to reposition the door stop strips.

Method of door construction:

Panel door

These are made from pieces of solid timber, the stiles and rails being fixed together either by mortise and tenor joints (with wedges) or by dowels. The number of panels may vary, but the general construction is similar with full height stiles on each side with top, middle and bottom rails.

The bottom rail is wider than the top rail, and the middle is normally below the mid point - so it is easy to tell which way is up.

With the solid timber stiles and rails, these doors can be trimmed fairly easily to fit an existing door frame They must not be excessively trimmed as there is a risk that the sides of the mortise may be exposed in the top/bottom rails or the wedges holding the joints in the stiles becoming weakened.

Hollow Doors

These are made using a hidden frame covered with a thin cladding on each face and, normally, solid timber strips down the two edges to give a decorative finish. The cladding may be ordinary hardboard, which can be painted after the door has been hung, or a decorative plywood that can be varnished to give a natural timber appearance.

A number of different types of 'in-fill' within the door are available to give the faces some strength and rigidity. The simplest form of in fill, is a cardboard honeycomb, other specialist in-fills are used to make the door fire resistant.

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/

Within the door, a solid timber area is provided for fixing the lock and handle; this solid timber is normally restricted to one side of the door and set at a suitable height for the lock/handle. So when hanging a door, it must be hung the correct way up and with the correct side to the hinge - failure to do this will mean that there will be nothing solid within the door where the lock/handles will need to be fitted.

Hollow doors cannot really be trimmed (either in height or width) to fit an undersized door frame; this generally means that these doors can only be hung in modern houses where 'standard' door frames are fitted.

Glazed Doors

Glazed doors are ideal where it is desirable to 'borrow' light into a dark area such as a passage.

These doors are made with solid timber surround and may be half glazed, full glazed or 2 half glazed.

The frame is normally made from solid timber in the same way as for panel doors with the inner edges of the stiles and rails machined to take the glazing. The stiles and upper/lower rails can be trimmed as for a panel door.

The important aspect is the type of glass used to glazed the door. UK regulations require that Safety glass is used in full glazed and lower glazed panels; it is always wise to use Safety glass for all glazing in a glazed door. Safety glass cannot be purchased off the shelf, it is in fact ordinary float glass which has been subjected to a special heat treatment - the glass must be cut to size before it is treated.

Imperial/metric door equivalents.

imperial (inches)	metric (mm)
78 x 24	1981 x 610
78 x 27	1981 x 686
78 x 30	1981 x 762
78 x 33	1981 x 838
80 x 32	2032 x 813
82 x 34	2083 x 863
84 x 36	2134 x 914

Click Here for more general construction tips:
http://17b264yc7d54vvd-2t772czmcb.hop.clickbank.net/