

How to Measure, Install and Finish Wood Mouldings and Door Jambs



Wood Moulding & Millwork
Producers Association

Wood Mouldings

In both new construction and remodelling, wood mouldings serve the dual purpose of function and beauty. On a functional level, these plain or decorative pieces cover seams, protect edges and corners. Aesthetically, wood mouldings offer hundreds of options for simple or complex architectural details. When purchasing wood mouldings, ask for products manufactured by members of the Wood Moulding & Millwork Producers Association; it is your guarantee of moulding quality.



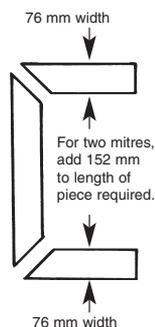
Measuring

TIPS ON BUYING MOULDINGS

Mouldings are available in lengths from 0.9 m to 6.1 m. When a log is milled into individual boards or further remanufactured into mouldings, some pieces will be perfectly clear for their entire length, others may have natural imperfections such as knots or variations in grain and colour (sapwood is lighter than heartwood). The grading rules for moulding and millwork allow for occasional minor characteristics that do not inhibit end use.

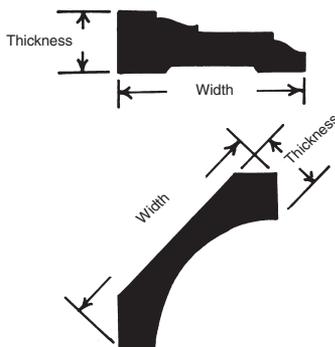
When calculating the materials list for your project, note the number of pieces required by length in each pattern selected. For each piece required, always round up to the next increment of the standard lengths available from your local stockist. Calculate carefully and determine where the shortest standard lengths can be used efficiently. Shorter lengths are often the best buy.

For correct measurement, the width of the moulding should be added to the length for each mitred joint. For example, if the moulding is 76 mm wide and requires two mitres, add 152 mm, then round up to the next standard stock length. It is always better to have a little bit more than you need than to find yourself a few millimetres short.



HOW TO MEASURE A MOULDING

When referring to moulding sizes, the thickness comes first. For instance, a casing pattern 17 mm thick by 57 mm wide is designated as "17 mm x 57 mm casing." If length is included, it is listed last: "17 mm x 57 mm x 2.4 m." The thickness of a moulding is determined by measuring from the top extremity to the bottom extremity of the piece. Widths are measured at the widest dimension.



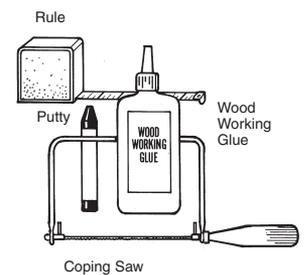
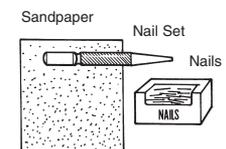
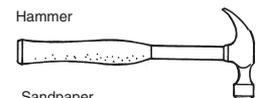
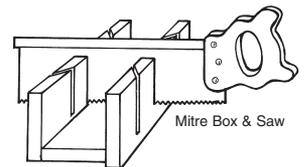
Mouldings are sold in specified or random lengths that may vary from 0.9 m to 6.0 m or from 1.8 m to 6.0 m. Examples of specified lengths are "2.1 m and/or 4.2 m" or "2.4 m and/or 4.9 m" or "all 2.4 m" or "sold on a lineal metres basis." Pieces, pairs and sets are sold by the unit.

End users and moulding specifiers differ in their preferences or requirements. Some will demand all 4.8 m lengths while others prefer the versatility and generally lower cost of random lengths purchased on a per lineal metre basis. Stockists may be able to save their customers money and improve their inventory by pointing out the economies of random lengths and shorts. For instance, it is estimated that over half of a home's interior trim requirements are for lengths under 2.4 metres. In applications where an opaque finish will be used, finger-jointed mouldings offer additional savings.

Installation

MOULDING TOOLS

For most moulding work, you will need a simple mitre box to aid in cutting accurate 90° and 45° angles. A small fine-toothed saw, a hammer, nail set and finishing nails are also necessary. A coping saw is sometimes needed in order to cope a joint for a tighter fit. Other tools include tape measure, glue, sandpaper and wood filler.



HOW TO MITRE A MOULDING

The mitred joint is a basic operation when working with mouldings. Most joints are mitred at a 45° angle.

First, set the mitre box at 45° (Fig. 1). Trim each of the two members at opposite angles. When fitted together they should form a tight, right angle (Fig. 2). For tight mitre joints, nail and glue at joint as shown. Make sure nails are countersunk below the surface.

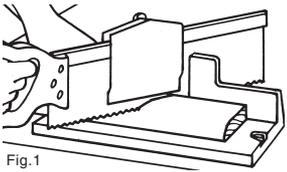


Fig. 1

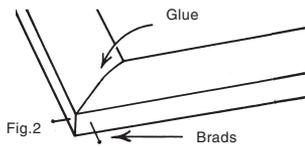


Fig. 2

An easy way to create a perfect corner without a mitre box is to tack the pieces together at right angles (Fig. 3), then cut with a saw and remove the scrap pieces. The two remaining pieces will fit together perfectly. This works only if the mouldings have a flat surface.

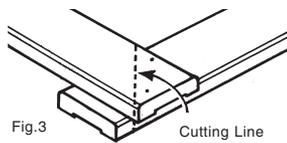


Fig. 3

Profiles of Flat-surface mouldings



HOW TO COPE A MOULDING

Using a mitre box, position the moulding as it will be installed upon the wall. Place it upright against the backplate (Fig. 4). pTrim at 45° angle. The resulting cut (Fig. 5) reveals the profile of the moulding. The profile preserves as your template. Hold the coping saw at a 90° angle to the face of the moulding and cut along the profile (Fig. 6). This results in a mirror-image duplication of the pattern (Fig. 7) which will fit directly over the pface of the adjoining moulding (Fig. 8).

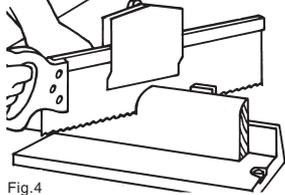


Fig. 4

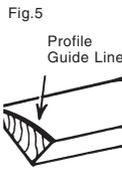


Fig. 5



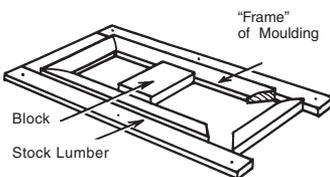
Fig. 6



Fig. 7



Fig. 8



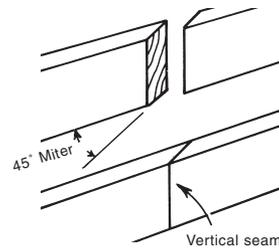
Making a Jig

Many projects require "picture framing" techniques to achieve necessary accuracy. A jig can help. It is simply a "mold" which allows you to make precise "frames" quickly. The inside dimensions of the jig equal the outside dimensions of the frame. The jig consists of stock pieces of lumber nailed to any flat surface. Blocks can be used where necessary to straighten mouldings against the sides of the jig.

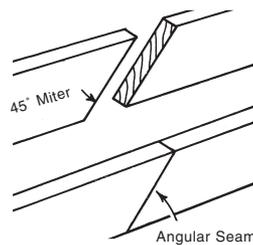
HOW TO SPLICE A MOULDING

Regardless of lengths purchased, some moulding installations will require splicing to make the most efficient use of material. This technique is easily mastered. Using a baseboard installation as an example, there are two ways to splice a wood moulding.

Orient the pieces on edge in the mitre box as they will be applied against the wall. Mitre the joining ends at 45° angles from front to back. One member will overlap the other in a scarf joint, creating a vertical seam in the finished installation.

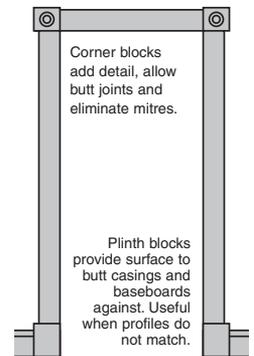


Orient the moulding flat on its back in the mitre box. Mitre the ends to be joined at identical 45° angles. When the cut ends are butted together, an angular seam will result.

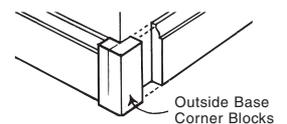
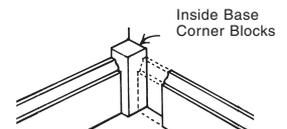
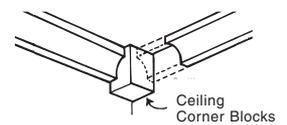


HOW TO ELIMINATE MITRES BY USING CORNER BLOCKS

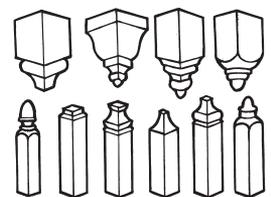
When installing casings around windows and doors, corner blocks and plinth blocks are often used to create a richer, more elegant appearance. The installation is easy because mitred and coped joints are eliminated and measuring is less tricky.



The corner or plinth blocks may be cut from scrap lumber or selected from the variety of decorative blocks now available from moulding and millwork manufacturers. Corner blocks are nailed into position and the casing or mouldings are simply butted against them. This detailing technique also works admirably for ceiling mouldings, chair rails and baseboards.



Samples of manufactured corner blocks.



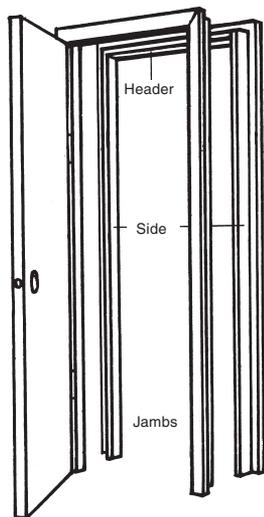
HOW TO INSTALL A PRE-HUNG DOOR

Pre-hung door units are usually manufactured with one of two basic jamb treatments: flat or split. The flat jamb with an applied stop must be purchased in a size that matches the wall thickness. Split or adjustable jambs allow for variations in wall thickness.

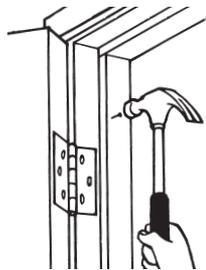


In some cases, particularly with split jambs, the casing is applied to both sides of the opening by the manufacturer of the pre-hung door unit. At other times, the casing is furnished separately for application after the jambs have been installed. Because of these variations, manufacturers often include printed instructions with their pre-hung door units.

Pre-hung Door Unit



Regardless of the type of jamb, the rough wall opening should be 51mm wider and 25.4 mm higher than the jamb's net opening size. This will allow the jamb to be placed in the opening with sufficient room for shimming to make the jamb plumb and straight. The hinged side of the jamb should be nailed first. Use a level to check for plumb before final nailing. Drive shingle wedges or shims behind the jamb to straighten its alignment in the opening, making certain it is plumb.



INSTALLING A PRE-HUNG DOOR

Repeat the same procedure for both the strike plate side of the jamb and the header. Check door for proper swing and clearance before countersinking nails. Finally, install casing if not already factory applied. All nails should be countersunk. Fill and sand nail holes before priming and finishing.

Finishing

CHOOSING A FINISH

The right colour and finish treatment for mouldings is a matter of personal preference. However, because there are hundreds of finishing products on the market today, it is quite natural to feel somewhat confused.

Knowing the end result you wish achieve and understanding some basic terminology for the variety of finishing products available, along with their advantages and disadvantages, will help you select the best finish for your needs.

Primers are an inexpensive, opaque undercoat applied to raw wood to improve adherence of a paint finish. They are used with oil-based enamels and latex paint for better adhesion of the top coat. Use an alkyd primer that does not raise grain, rather than latex primer. Latex primers raise the grain. For a smooth finish, primed surfaces should be lightly sanded before applying the final coating. Primers that include a sealer should be used on pine mouldings, prior to staining, to help obtain a uniform finish.

Sealer is a transparent liquid that seals the pores of wood and binds fibers together without altering the appearance of the wood. Stain, oil, varnish or paint can be used directly over sealers.

Filler (when used in connection with wood mouldings) is a general term for wood putty, wood patch, wood dough, plastic wood, vinyl spackling compound or putty stick. Fillers are used to cover imperfections and nail holes. Available in white, clear or matching wood tones. Some are applied before finishing, allowed to dry, and then sanded. Some are used as a final touchup, depending on what type of finish applied.

Paint covers the wood completely. It is available in many formulations and thousands of colours to suit any need. As a rule of thumb, allow one pint of paint per 30 running metres of moulding. Synthetic and latex finishes are easily applied and resist light abrasion. Refer to the following section on **Wood Moulding Finishes** for additional information.

Stains change the natural colour of wood. Oil- and water-based, non-grain raising, and pigmented wiping stains are available. Wiping stains allow for the greatest degree of colour control. Intensity is proportional to the time the stain is allowed to penetrate the wood before being wiped off. Some exterior siding stains are available in a range of pastel colours.

Refer to the following section on **Wood Moulding Finishes** for additional information.

Penetrating finishes sink into the wood leaving little or no material on the surface. Those containing resins provide surface protection yet reveal the wood's natural texture. Bleach can be used to lighten wood and remove grime. Liquid laundry bleach is the most common. It is very corrosive, wear gloves and protective clothing and rinse clean. Can be applied with cloth or brush. Because it raises the grain, sand smooth after it has dried completely.

Antiquing is a finishing technique. A second, semi-opaque colour is brushed on, then partially wiped off to reveal an underlying base colour.

Most manufacturers offer a variety of colour tones and information on how to apply their particular products. Before applying any finish, it is wise to make a test of the entire application process on wood scraps.



Wood Moulding Finishes

OPAQUE PAINT FINISHES

These finishes cover the wood completely. They may be used on new wood or previously finished wood. Available in glossy, semi-glossy (satin) or flat finishes, in a wide range of colours. Can be applied with brush or pad applicator. Work best if a prime coat is applied first. Enamels will yield rich colour in glossy, satin and flat finishes.

LATEX PAINT Easy to apply, odor free, quick drying, easy cleanup with soap and water. However, because it contains water, it raises wood grain. Latex enamel should be applied only if the surface has been first properly coated with an oil-base primer. Because of lower resistance to wear and moisture, latex paints are not recommended for door and window casings and baseboards, or for use in kitchens, baths or other busy areas.

ALKYD PAINT Durable, made from synthetic resins. Most common finishing paint. Nearly odorless. Quick drying. Resists normal abrasion.

OIL PAINT Extremely durable. Adheres well to bare wood or any previously finished surface. Slow drying, strong smelling.

CLEAR OR NATURAL FINISHES

These are colourless, transparent finishes that let the natural grain of the wood show through.

SHELLAC Shellac is an economical, easily applied, quick drying finish for general use. Easy to apply with brushes and leaves no brush strokes. Resists moisture, but discolours when damp. Has a limited shelf life of approximately 6 months.

LACQUER Lacquer intensifies wood grain but does not change its colour. Because of its rapid drying time (in minutes), is difficult to apply with a brush and often leaves obvious brush strokes. Is usually applied as a spray for a mirror-like finish. Good resistance to wear, but not to moisture.

VARNISH Clear, glossy, very tough finish. Varnishes intensify wood's grain pattern. Gives a warm glowing tone to wood, but can darken or yellow over time. Those that contain synthetic resins and UV blockers will provide a clear finish with less darkening.

OIL Gives a soft subtle sheen. Penetrates the pores of wood. Cannot chip or peel. Very slow to dry. Of the two basic types, linseed oil is less durable and has no resistance to moisture. Tung oil is both durable and moisture resistant.

WAX Used as a polish over other clear finishes for protection against dirt and wear. Turns yellow with age and must be removed and reapplied. Most often used on furniture rather than mouldings.

SEMITRANSSPARENT COLOUR FINISHES

Stains enhance the natural characteristics of wood grain. Can be used to change the colour or to re-colour natural wood. Tone may be altered by varying the length of the drying time and the number of coats applied. Seals and hardens, dries fast. Stains are easy to apply with a brush, pads, cloth or sponge.

PENETRATING STAIN Contains dye. Accents wood grain because different wood characteristics absorb the stain differently. Slow drying.

NON-PENETRATING STAIN Pigment based. More opaque than penetrating stains. Rests on wood's surface. Tends to obscure grain.

OIL STAIN Most common, durable, long lasting.

LATEX STAIN Water based. Easy to apply, but more sanding is required because water raises the grain. Penetrates more deeply than oil stain.

SELECTING YOUR TOOLS

Using the proper tools will aid more professional looking results and make any finishing job easier, faster. If you need to purchase brushes, buy the best you can afford for a quicker, neater job. Use synthetic bristle brushes (nylon or polyester) for latex or water-based paints and stains. Use natural bristle brushes for alkyd, oil-based paints and stains, and for varnish.

A sash brush cut at an angle is helpful in the tight spots. Pad applicators are flat rectangular foam pads that give the speed of a roller but the smooth finish of a brush. Pad edging tools give fast, neat edges without masking. Listed below are most of the tools and equipment you'll use. Needs will vary depending on the type of finish used.



Paints, Stains, Thinner, Bleaches
Brushes and Pad Applicators
Mixing Buckets
Sponge
Lint Free Rags
Drop Cloth
Nail Set, Hammer
Putty
Putty Knife
Sandpaper and Sanding Block
Masking Tape
Paint Shield
Ladder
Tack Cloth
Rubber Gloves

FINISHING NEW WOOD MOULDINGS

Before actually applying any finish, it's best to test the entire procedure from primer to top coat on a scrap piece of moulding. If satisfied, begin the actual job.

Test on a scrap piece



A finish may be applied either before or after the moulding is installed. The decision will depend on a number of things: the type of finish, whether nail holes are to be filled before painting or after staining, how accessible the mouldings are, how difficult masking will be, the surface of the background around the moulding, and so on. Given your particular situation, decide which approach will be the easiest to manage.

Generally it is more efficient to finish the moulding after it has been measured, cut to size, temporarily tacked in place to insure proper fit, and then taken down and placed horizontally. With the mouldings in a horizontal position, it is quick and easy to apply the finish, there's less opportunity for runs and drips, and sanding between coats is less trouble. Any rough areas should be sanded smooth. Always sand with the grain. Use a tack cloth to remove the dust caused by the sanding.

Place horizontally



Sand smooth

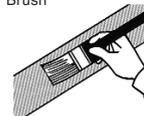


Dust with tack cloth



Depending on the final finish, a primer is usually the first coat applied. Proceed with the finishing coats according to directions on the finish manufacturer's label. In most cases, a brush is best for paint, shellac and varnish. A rag or sponge works best with stain.

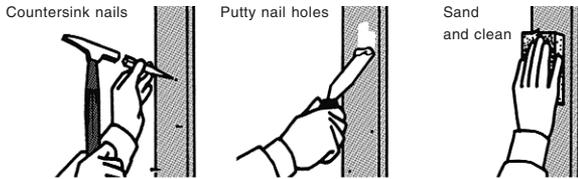
Brush



Lint-free Rag or Sponge



When mouldings are to be painted rather than stained, it's often easier to apply the primer and first coat of paint before installation. Once nailed in place and the nails are countersunk, with holes puttied and sanded, apply a final coat of paint. Whenever more than one coat of paint is used, sand lightly between coats and remove the dust with a tack cloth.

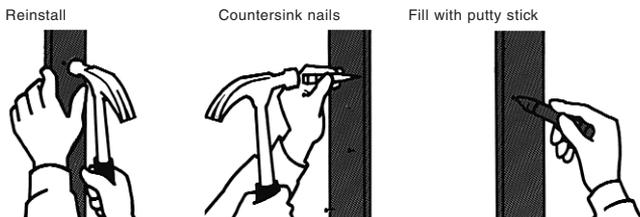


When applying a stain, the degree of colouration from the stain may be controlled by wiping off the excess before it dries. For a lighter shade, wipe off quickly. To darken the tone, apply additional coats, wiping off each coat until the desired effect is achieved. Sand and remove dust between coats.

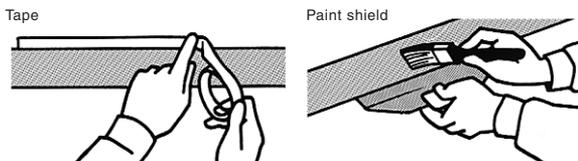


Stains should be applied liberally to ensure sufficient penetration into the wood. Also remember that some softwoods, such as pine, are very absorbent and will quickly take on a darker tone than hardwoods such as oak.

After the final coat of stain has dried, permanently install the moulding, countersink the nails and touch up the holes with a matching-colour putty stick. Finishing coats of varnish may be applied for added protection and lustre.



If the finish is to be applied after the moulding is in place, tape around the areas to be finished. Before the finish has dried completely, gently remove the tape. For some areas, a metal or plastic paint shield works well. Wipe clean after each position to prevent smudging.



For some types of moulding jobs, a paneling adhesive may be adequate to hold the pieces in place. This will eliminate the need to fill and sand nail holes.

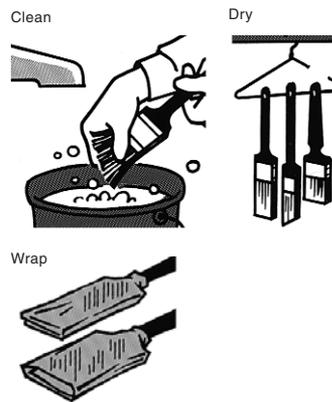
Paneling Adhesive



Our finishing tips are intended to be general and while applicable to most paints and stains, some brands may have unique characteristics. Always read the manufacturer's labels carefully.

CLEANUP

When the job is finished, clean brushes and tools immediately. Don't allow them to dry. Use warm soapy water to clean latex paints and stains from brushes and paint tools, then rinse with clean water. Use paint thinner (mineral spirits), turpentine or a commercial brush cleaner for oil-based stains and paints. Once the oil-based finish has been removed with solvent, give brushes and tools a final wash in soapy water, then rinse with clean water. To maintain the shape of a brush, hang by the handle to dry, then wrap in foil for storage.



Remember, no matter which type of finish you select, take time for preparation and use the proper tools. The end result will be a more beautiful home and the lasting satisfaction of a job well done.



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