



Making and Installing Decorative Wainscoting



Overview:

Applying wainscot is very easy and straight forward. It can be applied directly over a sheet-rocked wall or over beaded plywood for a more dramatic effect. The key to a proper joint is to have a router bit with a profile that mirrors itself when it is inverted 180 degrees. For this reason we have a few profile options available: roman ogee, classical, traditional table edge and 45 degree chamfer. A round over and cove bit may also be used to create a rule style joint if you would like to use a two router bit option. For this project we will be focusing on a single bit option and using a 1/4" radius classical profile router bit (MLCS item #6491, #8792 or #17666) for our wainscot frame.

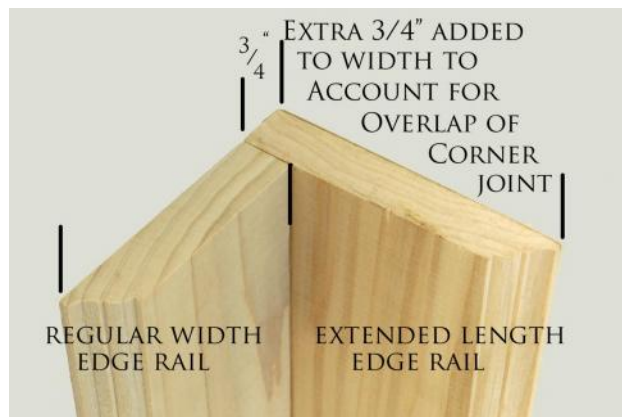


The construction will mimic that of cope and stick cabinet frame, only rotated 90 degrees making the stiles horizontal and the rails vertical. When routing the profiles, the top and bottom stiles will have just their inside faces routed. The edge rails will have the inside face routed in addition to a coping profile routed on the ends where they meet the

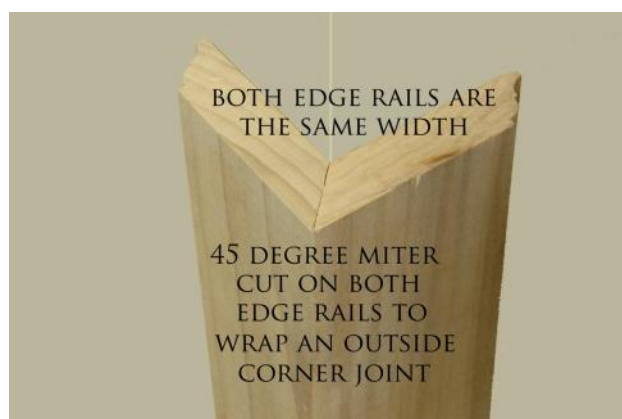
top and bottom stiles. The intermediate rails will have both long edges routed in addition to a coping profile routed on the ends where they meet the top and bottom stiles. All of the cuts on the long edges will be made with the good face down against your router table. The cope cuts on the edge and intermediate rails will be made with the good face upward facing you.

Planning your Layout:

When planning your layout, you should allow an extra 3/4" of width to one of the edge rails when you will have two walls of wainscoting meeting at an inside corner joint. This will allow a consistent reveal width when the two sections are butt-joined at the inside corner.



A 45 degree miter joint is typically used when you have two walls of wainscoting meeting at an outside corner joint. No additional width is required on either of the two edge rails, but a 45 degree miter joint will look cleaner by not leaving any end grain exposed on the joint. A 45 degree chamfer bit (MLCS item #7677 or #17681) or a table saw with the blade tilted to a 45 degree angle is recommended for this operation.





You will have to allow an extra 3/4" to the length of each top and bottom stile wherever they meet at an outside corner. A 45 degree miter will have to be cut on the ends that will meet to form the miter joint on any outside corner joints.

To determine the length of the top and bottom rails, measure the wall length and add or subtract any amounts needed to account for any of the joints you have in your layout as discussed above. To determine the length of your edge and intermediate rails, pick a height that you would like the top of the cap molding to sit at and make note of the height from your floor. Use the following formula to determine the finished stock length for all of your edge and intermediate rails:

Length of Rail = (Cap Molding height) – (thickness of the Cap Molding) – (width of the Bottom Stile) – (width of the Top Stile) + (double the cutting depth of the Router bit profile used).

The typical thickness of the Cap Molding is 3/4" and 1-1/2" wide, the width of the Bottom Stile is 5-1/4" and the Top Stile is 3-1/2". These dimensions may be modified to suit your requirements and are to be used only as a general guideline.

The number of intermediate rails needed depends on personal choice of spacing and the width between each rail may not always be consistent from wall to wall, as wall length will obviously vary.

Setting up the Router Bit:

A router bit with a 1/2" of vertical profile works best when using 3/4" thick stock. Adjust the router bit height so you end up with an equal 1/8" of spacing above and below the 1/2" of profile height. Using scrap stock of the same thickness, rout along one of the edges, creating a full profile cut. Cut a short piece off of the scrap, invert it 180 degrees and profiles should compliment each other with both top and bottom edges flush. If one piece is higher than the other the bit height will need to be readjusted by the height of half of the difference. Retest until you have the bit height properly adjusted.

With the good face up towards you, use a piece of scrap stock to push and support the narrow rail ends through the router bit. The scrap backer will also aid in preventing tear out as the stock exits the cutter blades. When all the ends of the edge and intermediate rails have been cut, the long cuts will be made next. No adjustments should need to be made to the router bit height; it should be centered in your stock thickness.

With the good face down against your router table, proceed to cut the inside long edges of your top / bottom stiles and edge rails. Both long edges will be routed on all of your intermediate stiles. It is a good idea to mark the edges to be cut to avoid accidentally cutting the second side of the edge rails.



If you have any outside corner joints in your layout, now is the time to prepare them. If you do not have any outside corner joints, proceed to the next step (Installing the Wainscot). When two edge rails meet at an outside wall joint a 45 degree miter needs to be made on the long outside edges of the two matching edge rails. A 45 degree chamfer router bit or table saw with the blade tilted to 45 degrees is how to accomplish this. In addition to the edge rails receiving the miter, the ends of the top and bottom stiles must also have the 45 degree cut made on them.

Installing the Wainscot:

Measure and cut your top and bottom stiles to their finished length. Start by placing the bottom stile in its position along your floor. Use a level to adjust it so it is perfectly level. If it is not level the rest of the installation will be out of square and the joints will have gaps in them. When you have the bottom stile level secure it in place with finish nails. Use finish nails that are long enough to set into your wall studs. Measure and mark the center points of your intermediate rail positions. Start with the edge rails and place them even with the ends of the bottom stile and allow the cope profile to interlock with the stick profile on the bottom stile. Use finish nails to secure it in place. Next place all of the intermediate stiles in place at even intervals. Secure them in place with finish nails if you are aligned with your wall studs. If your spacing does not permit using your wall studs, a construction adhesive is recommended to attach the to the wall. After all the rails have been secured in place, finish the frame by placing the top stile in place. Again allow the cope profile on the rail ends to interlock the profile on the top stile. Secure in place using finish nails set into your wall studs. You are now ready to make and install the cap molding.

Making and Installing the Cap Molding:

The cap molding is typically made from 1" x 2" stock. Larger stock may be used depending on your personal preference. You can use any edge profile router bit to meet your style needs. The Pedestal Molding router bit (MLCS item #7890) or Astragal router bit (MLCS item #5587, #7888 or #7889) produce an attractive edge treatment and make a decorative cap molding.

Adjust the router bit height to produce the desired edge treatment you are looking to achieve. Run one long edge of the stock to produce the cap molding.

Measure the length needed to cover the top edge of the top stile on your wainscoting. If you have an inside corner, the end will need an inside 45 degree miter cut across it to match up with the cap molding on the adjoining wall. If you have an outside corner, allow enough overhang to put an outside 45 degree miter on it. When you have



cut the cap moldings to their finished lengths, use finish nails to secure them into the top stile.

Use a nail set to counter sink all the finish nails and apply a stainable or paint grade wood filler over the depressions left from the finish nails. If you are painting the wainscot, apply a primer to all of the exposed surfaces to allow the paint to cover properly. If you are staining the wainscot and beaded plywood, apply a sanding sealer and finish sand to accept the wood stain.

As a final step, a quarter round molding may be added to the bottom of the wainscoting to cover any gaps between your floor and the bottom edge of the bottom stile.