

A Remodeler's Approach to Replicating Plaster Moldings

Foam backer and a few jigs are the keys to reproducing this traditional cornice detail

BY JOSEPH JAMES

In the time leading up to the mid-1900s, plaster was a much more common building material than it is today. Walls and ceilings were often finished with plaster; many homes had plaster moldings. Cornices, at the junction of walls and ceilings, were typically plaster.

For over a year now, I've been involved in the restoration of a historic building in Yankton, S.D., that will soon become the Mead Cultural Education Center. Inside the building, there are miles of plaster cornice to replicate and repair.

Retired master plasterer Roger Huntley and my predecessor Gregg Homstad developed the first iteration of this technique for making plaster moldings. I refined the process as the work went on. There are a few significant differences between the way these moldings were originally made and how we chose to tackle the work. Tradition-

ally, plaster moldings were made in place. We make ours on a bench. Originally they were made of plaster all the way through. Ours have a foam backer. They used to take many layers of plaster to complete. Ours are done in just two coats.

Having now completed the cornice restoration on this job, we can confidently say that our system works well and that anyone with basic carpentry skills could do this work. And because the building had a few different cornice profiles to replicate and repair, we know that this approach is easily adaptable, too. □

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Photos by Brian Pontolilo.



MAKE TWO KNIVES

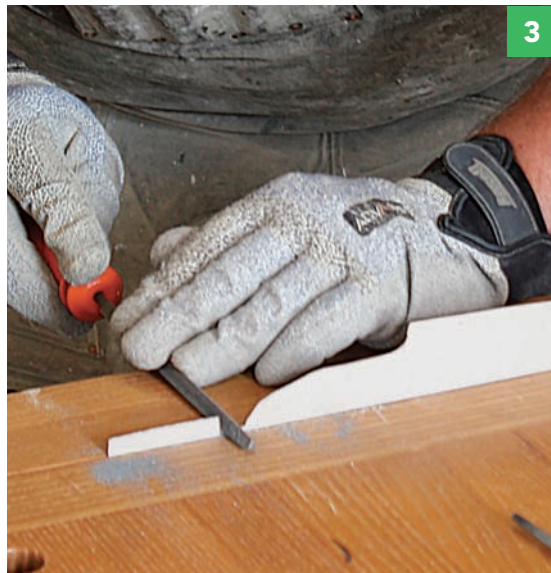
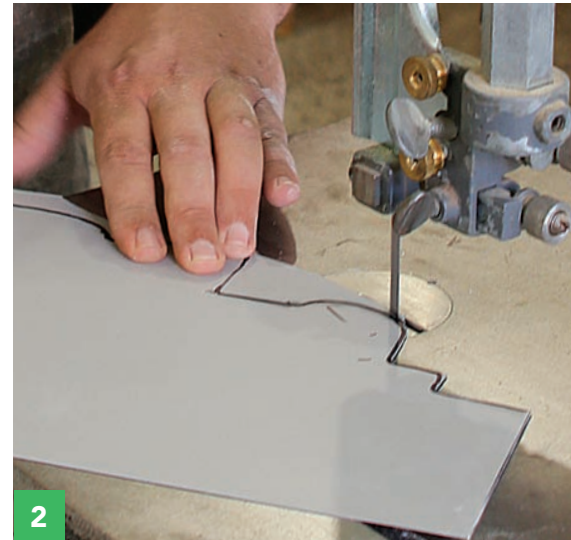
To make the shaping knives, you need to cut into the existing molding to trace the profile. You can use an angle grinder or a rotary hammer to remove most of the plaster, but it usually still requires some finessing with a chisel to square up the cut. The knives, which are ultimately fastened to a plywood slide, represent the inverse shape of the molding, and you'll need two of them—one for the base coat and one for the finish coat of plaster. The profiles cut into the blades should be as smooth as possible. The better you make the blades, the less touch-up you will need to do.

1 Use metal flashing for the blades. Transfer the molding profile onto a piece of heavy-gauge metal flashing with a marker.

2 A bandsaw does the trick. Rough-cut the profile on a bandsaw. Stay on the outside of the line, leaving enough material to fine-tune the knife later. There's no need for a special metal-cutting bandsaw blade, but you won't be using it to cut wood after this, so a \$12 hardware-store blade is ideal.

3 File to fine-tune. With the knife held in a vice, smooth the profile to the cutline. Check the profile against the molding as you sneak up on the line. This template is the master and will be used for the final coat of plaster.

4 Make a second knife. With a fat-tipped marker, trace the profile of the first knife onto another piece of metal. Rough-cut and fine-tune this knife outside the marker line, creating a second knife that is about 1/8 in. larger than the first. This will make a smaller molding profile for the base coat of plaster.



MAKE THE MOLDINGS

The jig we use for making these moldings is a simple L-shaped table—representing the intersection of wall and ceiling—with a guide that holds the shaping knives. Apply vinyl tape to the table to act as a release agent for the cured plaster. The moldings require two coats—the base-coat plaster and the finish coat. Let the base coat dry overnight, but no longer. If it cures too much, the base coat will draw too much moisture too quickly from the finish coat, which will not cure well.



Mesh for strength. At the bottom of the molding—where it is not thick enough for foam backing—run a length of fiberglass mesh tape to give the plaster something to bond with.



A lightweight backer. Most of the mass of the molding is built-up polystyrene. Use your knives to determine dimensions of the foam, leaving at least $\frac{1}{4}$ in. for two coats of plaster. Glue strips together with foam adhesive. You can make the moldings in 8-ft. lengths, a common dimension for sheets of rigid foam.





A little at a time. For each coat, apply enough plaster to cover a few feet of molding at a time, but not so much that it oozes out above or below the guide. Work your way down the length of the molding. Pull the guide fairly quickly to leave a smooth surface behind. If the plaster is pulling and not lying flat and smooth, adjust its consistency.



Smooth imperfections with hand tools. After applying the finish coat and while it is still wet, you can use a variety of tools (flat and L-shaped trowels and a wet sponge) to smooth the plaster. Touch up the cured finish coat with more plaster, filling any lasting imperfection or air pockets. Let the plaster fully cure for one to two days before installing the molding.

Two formulas for plaster

These formulas are great starting points, but it may take some trial and error until you get a good idea of the consistency that works best for each coat.



Base-coat plaster

1/4 bag Structo-Lite Basecoat Plaster (50 lb. bag)

A little less than a gallon of water

About 1/2 cup concrete bonding additive

Mix to the consistency of mashed potatoes.

Finish plaster

4 quarts Kal-Kote Smooth Finish Plaster

2 quarts water

A splash of concrete bonding additive

Mix to a pudding-like consistency.

INSTALL THE CORNICE

After dry-fitting the pieces, use the base-coat plaster, a simple shelf, and rips of 1/4-in. plywood to install and temporarily support the moldings. Give the plaster about 24 hours to set up before removing the support. Then you can use more veneer plaster to fill gaps at the wall and ceiling and between moldings. Before painting, apply a hiding primer like Conco Step One High Build Latex Primer/Surfacer. The heavy body of this type of primer helps to hide the joint lines and imperfections.



Use a cutting jig. You don't need exceptionally clean cuts, but it's still important for the butt joints to be square and the miters to be 45°. Use a pull saw and cope inside corners.



Score and back-butter. Make a lattice of grooves along the back and top of the molding with a foam-cutting hot knife to give the plaster something to grab. Coat the back and top of the molding with base-coat plaster, pressing it into the grooves.





Butter the butt joints. Use a trowel to spread base-coat plaster onto molding edges when joining pieces for a long run.

Finishing details



It's helpful to make a few sanding tools, like the long sanding block shown in the top photo, cut to fit the particular molding profile. The dentil molding seen in the bottom photo (made from a thin strip of wood and PVC blocks) was added last.