

Making Plaster Molding

Sometimes complex shapes and profiles are easier to make in plaster than in wood

by Frank C. Freyvogel



When my wife and I added on to our modest-size Cape, we installed three exterior doors, each of which had an elliptical transom. We both love the look of these transoms, but trimming out these exotic shapes can be difficult, even to an experienced contractor such as myself.

We needed more than 50 ft. of door trim, including the straight sections and ellipses. My first choice was to have the trim custom-fabricated, but the prices I was quoted were astronomical. Next, I considered making the trim myself. I've had some experience laminating wood for odd-shaped applications. But between the cost, the set up and the lengthy time involved, I decided against this alternative.

Looking for another solution, I realized that much of the interior-trim work I've seen over the years was done in plaster. But most of my plastering experience, beyond asking questions and

reading, has been limited to patching. Nevertheless, armed with reference books, limited experience and lots of motivation from wife and wallet, I decided to trim my transoms in plaster (photo above).

Making the molding template—The basic process of making plaster molding involves building up layers of plaster where trim is going and dragging a molding template across each layer until the shape of the trim is created. My first step was to fashion a molding template out of steel stiff enough not to need the wood backing that normally would give the metal the necessary rigidity (top photo, facing page). I used 14-ga. steel I had on hand, but I recommend thinner steel, perhaps an old taping knife, because heavier-gauge steel is more likely to transmit file marks to the plaster.

The key to using the molding template successfully is the leg that rides on the jamb (bottom photo, p. 79). This leg ensures proper positioning of the plaster molding and determines the size of the reveal. I started with a piece of steel a couple of inches larger in each direction than the molding I was matching. I positioned a scrap of this molding on the steel and scribed the shape so that a 1-in. by $\frac{3}{8}$ -in. leg was left with a $\frac{3}{16}$ -in. reveal. I cut the rough shape in the steel with a jigsaw, staying back a little from my scribed line. I used fine files and the grinding stone on a Dremel tool to shape the mold. When I was satisfied, I added a wood handle to make the tool easier to use and to protect the jamb from damage from the metal leg.

Prepping the walls—I cut back the drywall at the edge of the door jamb to provide a keyway



The molding template. The template was shaped to match the molding in the rest of the house. The author added a wooden handle covering the leg to make the tool easier to use and to protect the jamb from being scratched. The trim (left photo) is fashioned of plaster using the template (above).

for the plaster and to give the molding more body (bottom photo, right). I then primed the drywall and the jamb with two coats of primer to protect the paper face of the drywall from tearout due to the plaster's wetness. Next, I ran my molding template along the jamb and penciled in the outer edge of the new trim. The area inside my line was covered with a bonding agent that allows plaster to adhere chemically to a subsurface. The bonding agent also kept the plaster from drying too rapidly.

In retrospect I should have applied the bonding agent 3 in. or 4 in. beyond the outside boundary of the trim because there was a tendency for a small amount of excess plaster to build up beyond the trim and collect in irregularities in the wall. Unless this excess plaster is cleaned as you work, which you will have little time for, it eventually flakes off, creating future headaches.



A keyway locks the molding in place. The wallboard has been cut back from the doorjamb, creating a void that fills with plaster and keeps the molding securely anchored.



The first layer of plaster is put on. After the primer and bonding agent have been applied to the molding area, the author uses a tapping knife to apply a stiff mixture of plaster. The molding template then is dragged over this first layer of plaster, and the basic shape of the trim is created.

Although I skipped this next step, I strongly recommend the addition of expanded galvanized metal lath mechanically fastened to the jamb and to the wall to strengthen the trim.

The final step in preparation was protecting my work area with plastic, 4 mil or better (especially if you are working over hardwood floors—lime is caustic and will discolor hardwood).

Mix the lime putty ahead of time—In addition to my molding template, I needed other equipment, including a hawk (a small metal board on a handle used to hold the plaster while working it); a trowel; and a 6-in. tapping knife, all available from the local mason-supply yard. I also picked up a bag of hydrated finish lime, a bag of molding plaster (or gauging plaster) and a small quantity of commercial retarder.

I made the lime putty the day before I needed it. This allowed the lime to soak up the water

evenly and helped to eliminate lumps in the mix. I filled a 5-gal. pail about three-fourths full of clean water (14 qt. per 25 lb. of lime) and added the lime a little at a time. I stirred the mix occasionally as I added the lime, and I let it sit overnight. The next day, I stirred it again with a stick (a heavy-duty drill and paddle also would work well). The consistency of this lime putty should be almost the same as it is for drywall joint compound. A mix that is too wet can cause small holes to develop in the finished molding, while a mixture that contains too little water can produce small, hard lumps that shrink and leave little voids in the finished molding.

Mixing the plaster—When I was ready to begin my trim work, I mixed the retarder in a bucket of clean, potable water. The recommended ratio is 24 oz. of retarder to 4 gal. of water. The exact amount of retarder varies based on your ability,

the size of the job and the ambient temperature. Clean water is a must. Water that has been contaminated with lime or plaster scrapings from tools accelerates a batch of plaster beyond a usable setting time.

Next, I made a ring of lime putty on a plywood scrap about 30-in. square and filled the ring with my water/retarder mix (the ring of lime putty creates a kind of mixing bowl). Then I added the molding plaster, sifting in a little at a time. I was aiming for a 1:1 proportion of plaster to lime. I let the plaster sit until all the water was absorbed and until there were no dry spots. Next, I mixed the lime putty and plaster together until they were blended thoroughly. This initial mix of putty and plaster should be somewhat stiff so that it stays put on the wall.

Applying the plaster—Using a tapping knife, I applied the plaster to the area being trimmed

(photo facing page). This step is called blocking out. Next, with the handle of the molding template riding on the inside of the jamb, I ran the template over the area I just blocked, working up from the top of the plinth block. It is important to keep the molding template perpendicular to the wall at all times to make sure that the shape of the molding is consistent.

The blocking operation created the basic shape of the trim. Once the initial blocking was done, I immediately went back and filled in any voids with the same material and passed the template over the area again. I repeated this process until the rough shape of the mold had been transferred to the plaster or until the material had become too stiff to use. *Never add water to soften your mixture!* Always discard any used material, and take the time to clean the excess plaster from your tools.

The next step required a looser mix (more water/retarder) and a smaller batch of plaster. I smeared a handful of the mix over the trim (top photo, right). Then I ran the molding template over that area, forcing the plaster into the voids that were left by the earlier blocking-out process. I repeated this procedure until all of the imperfections had disappeared.

Instead of smearing this layer of plaster, another option would have been to hold a handful of the loose plaster mix against the molding template as it passed over the trim. This operation is known as stuffing the mold. An extra person would be helpful with this activity because it normally takes two hands to hold the molding template in the correct position. In any case, you shouldn't continue the shaping process if the initial layer of plaster has swollen, causing the molding template to bind and chatter. Remember that plaster expands as it sets.

When I reached the top center of the transom, I repeated the entire process beginning at the bottom of the other side and blending the two sides at the top (bottom photo, right). I always worked against gravity. Working down would have left the trim full of cracks and voids.

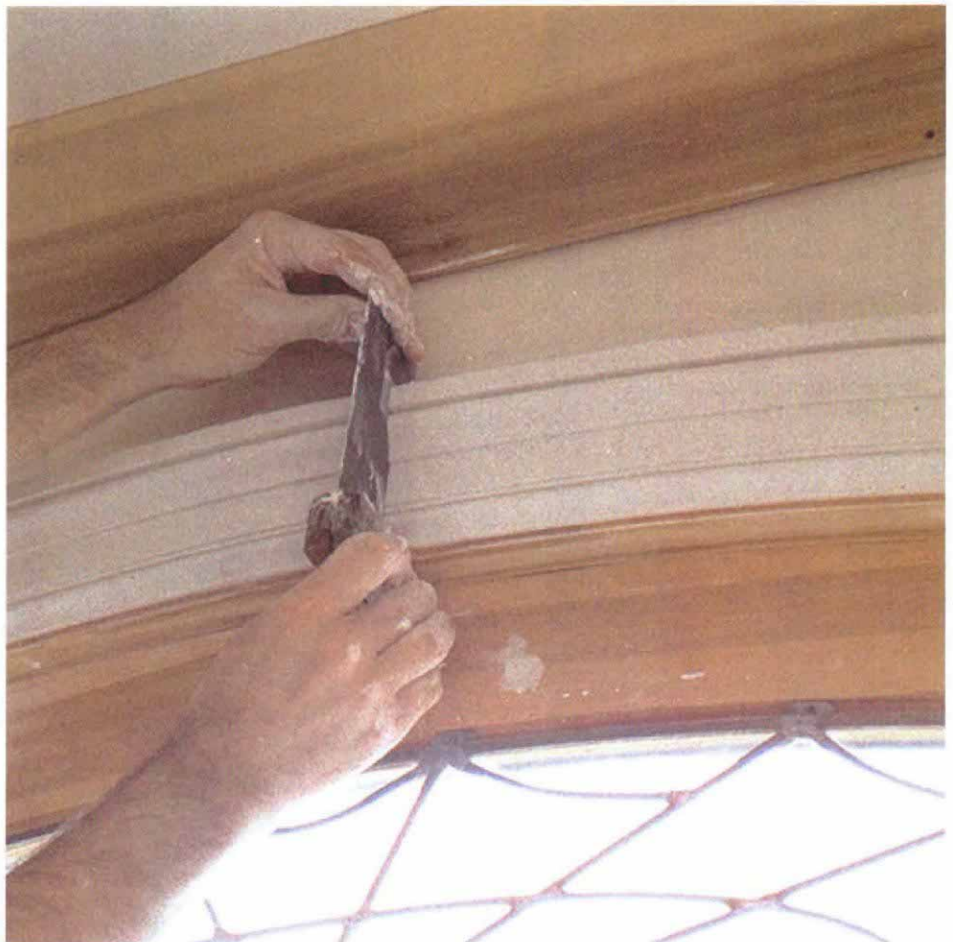
The final step was splashing water on the trim with a mason's brush and running my mold template over the trim one last time to remove any excess material or drips. Some plasterers use a handful of lime putty at this point and stuff the mold to fill in any minor blemishes and to give the trim a shine. If it looks good after the initial stuffing, however, I suggest leaving it alone. After the plaster dried, I did final refinements with dry-wall joint compound and sandpaper.

The entire process took me around four hours per door. This was probably twice the time it would have taken a professional, but it was certainly quicker than the time to fabricate and install wooden moldings, and at a fraction of the cost. In addition to the time advantage, this process gave me moldings that exactly match the curve of the door because the molding template rode on the actual door jamb. □

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A second layer is smeared on top. A loose mix is spread over the first layer of wet plaster. As the template is drawn over the molding, the loose plaster is forced into the voids left from the initial shaping to complete the profile of the trim.



Fine-tuning the trim. With the template leg riding on the jamb, the author makes the final pass, filling in the last of the voids as he blends the two sides together in the middle.