

## Pouring Molds: A Guide



### Pouring One-Piece Molds with Slip

Place the mold on a clean, dry, flat surface and fill each section you wish to case with slip. Allow the slip to dry. Once the shiny wet look is gone, and the clay starts to shrink and pull away from the edges of the mold, the pieces are ready to be removed. Placing a board or piece of drywall over the top of the mold and flipping them over is the simplest way to remove items. Note: Some one-piece molds may not be cast solid. An example is something with depth. Dump excess clay on items thicker than a quarter of an inch.

### Pouring Two-Piece Molds with Slip

Two-piece molds must be banded properly and securely. Begin filling the mold with slip and do not stop until you reach the very top of the pour hole. Try to allow the slip to hit the sides of the pour hole or go directly to the bottom of the piece if possible. This will help avoid forming what is known as "hard spots" or "hot spots" on the piece. These spots are formed when slip continues to the same spot. Whenever possible, try to have that spot be in an area that will not really matter, since colors will not adhere to dry quickly and those spots. (These spots can also leave a yellowish discoloring on the bisque or show through transparent or translucent glazes.)

Keep an eye on the level of slip in the mold as the clay begins to set. As the mold begins to absorb the moisture from the clay, the level of slip will drop, requiring you to add more slip. Allowing the slip level to fall below the beginning of the piece in the mold could result in a thin portion on the finished ware.

There is no set time to allow the slip to set in the mold. Many factors will determine this, including the thickness of the slip, how wet the mold is, humidity level and air circulation. After you cast several items, you will get a feeling for the timing. Larger items will often require a thicker casting, while small ornaments will be cast thin. It is best to tip the mold slightly and cut out a small section in the pour hole to see how thick the item is. The size of your piece will help determine the thickness.

Once you reach the appropriate thickness you are seeking, the mold is ready to drain. Start by slowly tipping the mold, allowing the excess slip to collect in a clean container. You can make your own drain table by using wooden dowels and a plastic container. Be careful not to drain the molds too fast. If you hear gurgling sound, pull back on the mold and allow the slip to flow out slower. Draining too fast can create suction on the mold and can cause the object to pull away from the sides and collapse. Let the mold drain until no visible signs of slip draining are apparent.

You may find that some molds with small pour holes will not drain very well. Try inserting a small plastic straw inside the pour hole as far as it will go. Gently blow into the straw to help assist the

movement of slip. Shaking a mold may get the slip flowing, but you also run the risk of causing the item to collapse.

Once the draining has stopped, turn the mold back over in the upright position and allow it to dry. Remove any drips of clay from the outside of the mold with your fettling knife when the shiny, wet look has disappeared from those areas. The mold will now have to sit for a period of time while it absorbs more of the moisture from the clay; this will help to create stability in the object. Removing the item from the mold now would most likely result in the piece collapsing.

How long should you allow a cast mold to set before removing ware? There is no magical set time. Different molds and variables in conditions can affect the amount of time required. Some molds may set a little quicker, while others may take a little longer. Watch for the clay to start pulling away from the edge of the mold. This is generally a sign to remove the spare clay from the pour hole with your fettling knife and open one side of the mold. Use caution when removing the spare clay so you do not go in too far and damage the piece.

Turn the mold on its side, remove the bands and gently lift one side of the mold. Look inside as you lift to be sure the piece is not sticking to the side. If it is, continuing to lift could cause the item to rip in half. Try tapping the side of the mold with your hand or a rubber mallet. This will often cause the item to release. Another option is to shoot a little air with a compressor between the piece and the mold. If the item will not release at this point, leave it in the mold a little longer.

Once you have one side of the mold removed, gently press against the bottom and sides of the piece to see how soft it is. If the piece feels firm enough, gently lift it out of the mold. If possible, stand the mold on one side and tip the object into your hand. Soft pieces should be left in the mold half until firm enough to stand on their own. Keep an eye on these items, because leaving pieces in the mold too long could cause them to crack since objects shrink as they dry.

Always have a box filled with soft shredded paper and covered with soft fabric handy. Occasionally, you may find an item you originally thought was firm enough to stand on its own is not. DO not try placing it back in half of the mold. Place it on its side on top of the fabric in the box of shredded paper. The fabric will protect the soft greenware from any sharp edges on the paper that could mar your ware.

Immediately following the removal of a piece, clean out the mold with a soft brush or compressed air. Remove any slip or chunks of clay from between the interior halves of the mold with your fingers or a soft cloth. Place the mold halves together and band tightly. Be careful not to allow any particles or debris to fall inside the mold. Set the mold aside for the next pouring or store for future use.

Cut away any of the spare clay on the bottom of the object before setting it on a clean, dry surface. Scraps of drywall or layers of newspaper are great surfaces for drying. They absorb moisture and allow the ware to shrink without sticking as it dries. Laminated surfaces, Formica

or plastic are not the best, because moisture can become trapped and pieces can stick resulting in cracks or uneven drying.

Cut out holes for lights, windows, wiring or other openings at this time. Allow the piece to set a little longer if it is too soft and difficult to cut out. On the other hand, do not let it completely dry before attempting cut-outs. A sharp scalpel or knife can be used for much of the cutting. Check with suppliers for special tools made for cutting out holes and other shapes.

### **Multiple Piece Molds**

Some items may have multiple parts to create the final object. Here we have a figurine with a couple of parts that need to be attached. Cast and removed all pieces as outlined above. Attached these items with slip soon after they come out of the mold and are still wet. Place holes between pieces where air and moisture could become trapped. Apply slip along edges and press the parts together. Use a brush with water to smooth out any drips of extra slip. Some items may require a little work to fill in any gaps or add detail where lost. Making the piece look good now will save work later in the cleaning process.

Any time you add pieces to one another, make sure all parts are equally wet. Do not allow some parts to dry out and try to attach it to one that is wet. The wet piece will shrink more than the dry item, and it is likely the parts will crack at the joint and fall off.

What about lids and covers on pieces? Always place lids and covers on the ware as soon as possible. IF you do not, the objects may warp and the lids will not fit later. Set these on loose so the lids can be removed (unless you want them permanently attached with slip).

### **Slump and Hump Molds**

1. Using a wire, slice off an appropriate amount of clay from a block of moist clay. Use the palms of your hands to slightly flatten the clay onto a piece of canvas.
2. Begin rolling the clay using a large rolling pin. Press firmly and roll the entire length of clay. Roll twice and turn the clay over. Repeat until the clay is rolled to desired thickness (1/4"-3/8") and size. Compare clay dimensions to plaster form to assure proper coverage.
3. Create any optional impressions, textures, or patterns you wish on the clay side that will be facing the plaster surface of the mold.
4. Lift clay from canvas and place onto plaster form. Use a sandbag to pounce the clay into/onto the plaster form. Pounce until smooth. Note: on occasion you need to create folds in your clay to get them to conform to rounded shapes. Additional pressing with a sandbag may be required to smooth the surface.
5. Use a wooden fettling knife to cut the excess clay. Remove the excess clay and set aside or in a plastic bag to prevent from drying out.
6. Use a moist sponge to smooth and clean the edges or other imperfections in the clay surface.

7. Create any texture, patterns, impressions or ad sprig designs to the clay surface exposed. Note: you can also add a coil or "feet" to the bottoms of hump items. Simply roll out balls of clay or a coil, score both sides (scratch lines with a sharp tool), dab on a little slip and press the parts together. Make sure the piece is level by turning the clay (with the mold inside) over and pressing firmly on a flat surface.
8. When the object is leather hard, remove it from the mold and clean the edges with a cleaning tool. Allow to dry completely before firing.

### **Press or Sprig Molds**

Press or sprig molds are commonly used as adornments on other clay items. Keep in mind that these objects should be added to ware wet onto wet or dry onto dry. Never try sticking a wet sprig onto a dry object. Since clay shrinks when it dries, the sprig item would pull away and fall off. Press and sprig molds are also ideal for ornaments or other small objects.

1. Place a piece of flattened clay over the design in the press/sprig mold. Use the bag of sand to pounce the clay into form.
2. Lift the clay from the form and use a cleaning tool to cut the shapes from the clay. Use a moistened sponge to lightly clean edges of your objects.
3. Advance to this step if you are adding items to other ware. After arranging the objects on your item, use a cleaning tool to lightly score (scratch lines) the area where the objects will attach. Use a cleaning tool to lightly score the back of the objects. Apply a small amount of slip to the back of the item. Depress the sprig onto the scored area of the piece.
4. Create any additional adornments with clay and attach the same way as your sprig items.
5. Gently clean the entire object, removing any imperfections with a sponge and cleaning tool where necessary. Note: add a small ball of clay to the backside of sprig objects and fire to create clay stamps for making impressions in wet clay.