Castalot

GLASS MOLD MATERIAL

INSTRUCTIONS

A fast setting, refirable mold material for glass slumping, fusing or kiln casting applications. Carvable (wet or dry)

Use an OSHA approved particle mask or respirator when handling this product

Mixing Instructions: (You may want to do a small mold first to get a feel for its working properties)
2 **2 parts mold material** (Scooped loosely in the container) to **1 part water by volume**
More water may be added to increase working time. Allow more time to set.
Don't exceed 60% water content
Mix thoroughly for approximately 90 seconds, and pour immediately. Agitate vigorously to remove bubbles.
Working time: 5 -6 minutes. For larger pours use a jiffy mixer and an electric drill (more torque and you don't have to worry about batteries running out. For small molds use a wire whisk or electric bar drink mixer. **Do not mix by hand! Wash tools immediately after mixing**

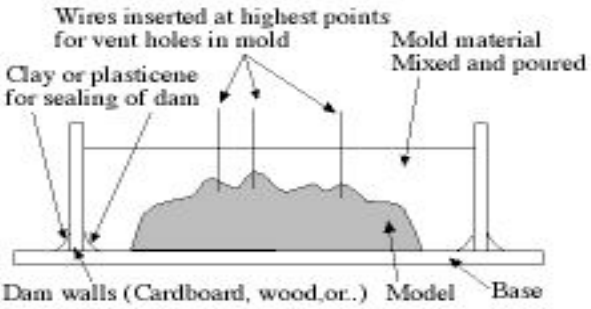
This is a dense material and we recommend using thin wire to create vent holes-See Diagrams
Pour over prepared model (clay, plasticene or rubber) as soon as material is thoroughly mixed. It should have the consistency of a milk shake. Agitate vigorously to eliminate bubbles.
Remove from model as soon as material completely sets up. (approximately 30-40 min)

For best results it is important to pre-fire the mold to 50º over the desired fusing, casting, or slumping temperature. This will fire out the impurities making a longer lasting mold. You may force fire the damp mold during the curing process. Example:
For a 6" x 9" x 1.5"D mold: Initial phase: 30 min to190º hold for 2 Hrs, (This will force out the steam) then ramp @ 275º hr to desired temperature and allow to cool naturally. For larger molds, add more time to the initial heating phase and go slower to the top end of the cure. **This is an approximate schedule**. Yours may vary depending on mold and model type and kiln configuration. Once the mold has been pre-fired, you may increase the ramp up time on consecutive firings, depending on mold size and glass configuration.

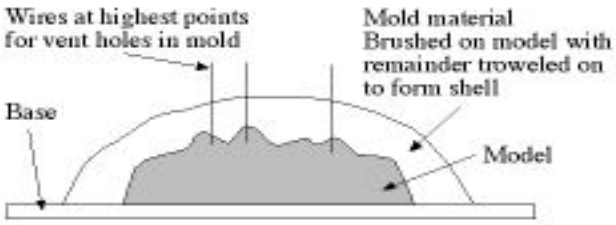
A thin coating of kiln wash is preferable for castings and will also help extend the life of the mold. I like to airbrush it on for smoothness. You may substitute denatured alcohol for water (add 10% water) in the kiln wash to dry faster and prolong the life of the molds

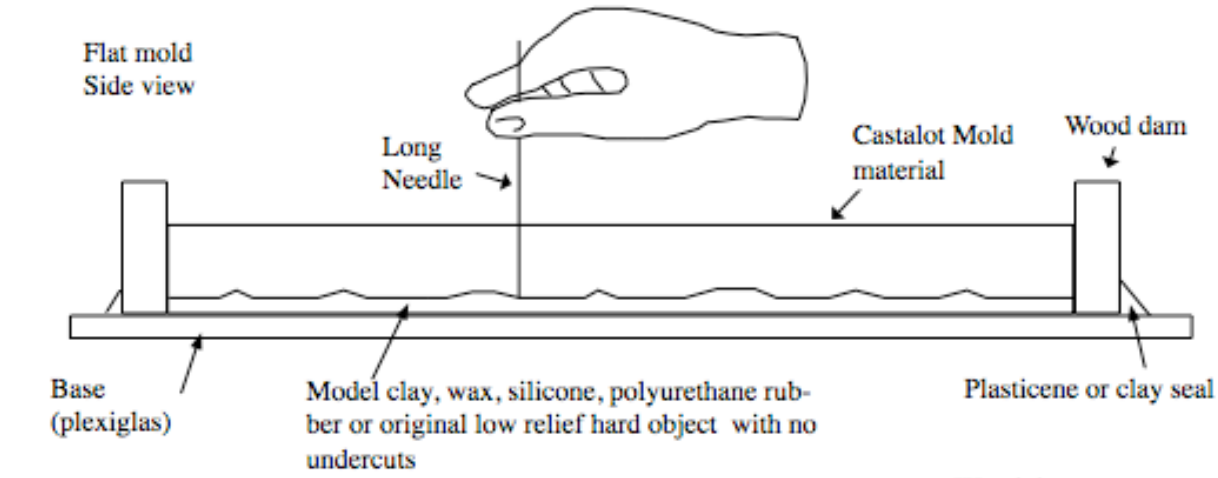
Typical applications and use of mold set ups for creating glass molds are illustrated below:

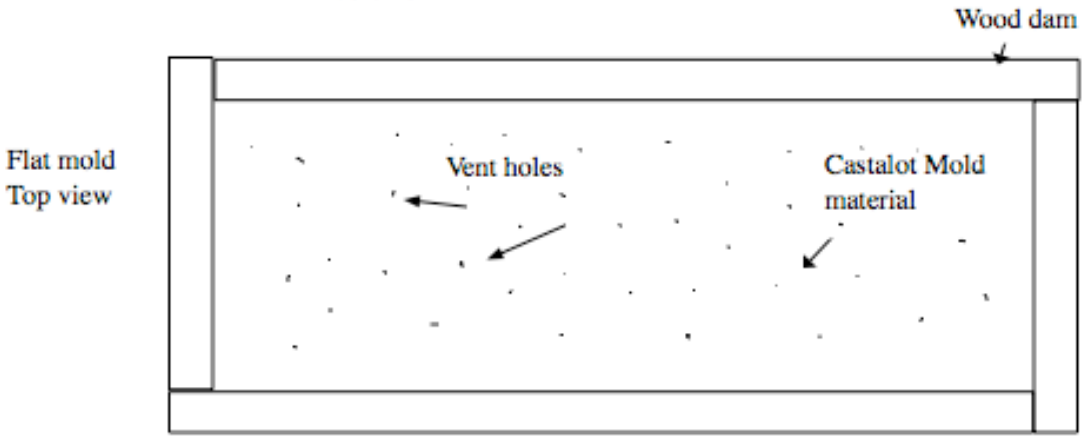
Traditional Box method



Shell Mold method







When creating a larger flat mold with Castalot it is helpful to create some vent holes in the mold to aid in the firing process. The vent holes allow the mold to 'breathe' during the firng process and prevents air from being trapped between the mold surface and the glass which may cause bubbles. Always set up using a well supported level surface.

After setting up the dams around the model and sealing the edges, mix and pour the Castalot over the model, agitate to allow bubbles to rise to the surface. Agitate until bubbles no longer appear. Just as the material starts to set or 'kick', (around 5-7 minutes or so) take a long needle and insert holes through the mold material touching the surface of the model. I usually start in the middle and work to the outer edges. If you have to force the needle-don't!, the material may already be set. The holes will appear to close up (as the material is still moving slightly) but the material is displaced enough by the needle to create a 'channel' for air to escape. After setting (around 45 minutes to an hour), demold -you will not see the vent holes on the face of the mold but they are there. Carefully move the mold to the kiln and place on a well supported kiln shelf and start the prefire program. Once completed use apply a thin coat of kiln wash (use an airbrush to apply as brushing it on leaves thicker areas and brush strokes). I will also substitute denatured alcohol for most of the water when I mix the kiln wash up for a couple of reasons-1. it dries very quickly and 2. Introducing water to the face of the mold at any point starts the degradation process and shortens the life of the mold.

I also use this method to create vent holes when I do direct carving onto slabs. That way wherever I carve I am fairly certain to engage vent holes.

Prefiring Note for large flat molds-Go slow and make sure all water is removed at 190 F. Once the top end of the schedule is achieved (50 degrees above glass forming temp), ramp down to 1100 F and hold for an hour or so-this extra step will prevent any warping. I also use this extra step when the glass is on the mold on the way down as well for the same reason.

Schedules will vary depending on mold size, relief elements, model complexity and kiln type.

Questions-email: sunsetgrove1@comcast.net