Information for First-time Users of Best Mix Mold Mix

Best Mix Mold Mix is a compound with a consistency similar to cement so, in handling and disposal, treat it as if it were cement. Use facemasks, latex or rubber gloves and closed frame safety glasses when handling since excessive exposure to the dry power form of Best Mix Mold Mix can cause respiratory discomfort, dry skin and eye irritation. Clean up with water but do not to dispose of the waste through household drains!

For best results, store and use Best Mix in heated spaces, especially during the mixing, pouring and curing periods. The ideal working temperature is 70 degrees F.

The Best Mix Mold Mix may settle and compact during shipping. We highly recommend that you loosen and redistribute the contents of the shipping box by pouring all of the mix into a second, larger airtight container such as a 5 gallon plastic bucket with a lid. Then, before each use, stir the Best Mix Mold Mix; an even distribution of particle size will ensure the best mold possible.

Working with Master Molds

To cast fused glass slumping molds from Best Mix, you first must have a master mold. We use the term master mold to refer to the pattern or scale model that you plan to use for slumping your fused glass. Basically, it's the shape that you want to replicate in your glass. Master molds used with Best Mix have to be watertight and waterproof. The process of hardening Best Mix Mold Mix is a chemical reaction that requires the presence of water. This process takes 12 to 24 hours to achieve maximum strength, depending on the size of the mold. If the proper amount of water is maintained during the hardening and curing process, you will have a strong mold; if you lose water because of a leaky master mold, you may have a crumbly mold.

The best choice for nonporous master molds is plastic or glass, however, any material that can be waterproofed can be used. Wood shapes, for example, can be coated and sealed with lacquer, polyurethane or varnish. Whatever shape you use is then placed on a nonporous surface, with a dam or rim around the outside edge to contain the Best Mix. The edges of the shape must be sealed with hot glue or polymer (oil-based) clay so the water doesn't seep underneath.

Remember, the surface finish of the master mold will be exactly duplicated in the newly cast slumping mold – what you see and feel now will be imprinted in your future slumped glass. Make sure your master mold surface has the smoothness or texture you want in your finished glass piece.

Estimating Volume of Best Mix Needed

An accurate amount of mix should be determined prior to the mixing stage – you don't want to come up short once pouring starts. Use dry, clean sand to fill the mold to the proper level, then pour out the sand and measure the weight or volume. The measured amount of sand is a good estimate of the amount of mold powder to use.

Using Mold Release

The use of a mold release is essential to the parting of the master mold and the cast mold. We have found that vegetable oil spray (non-soluble in water), and particularly olive oil spray, makes an excellent mold release. A light coat of the spray is recommended -- and make sure that the coating does not puddle in low spots – then use a clean paper towel to spread an even shine of oil on all surfaces before pouring. There are waxes, dry silicone sprays and many other agents that are used professionally. We recommend that you test several release products on simple projects before taking on that really big challenge.

Mixing to the Proper Consistency
We use currently use two techniques for mixing Best Mix. We call them the Pouring Method and the Layering Method.

The pouring method mixes Best Mix to a consistency similar to cement. When you pick up a hand full of Best Mix it might drip through your fingers a little and if you shake your hand it will definitely begin oozing through your fingers.

The layering method uses a much thicker form of Best Mix Mold Mix. We use this method when the master mold is a shape that would make for a very large, awkward or heavy slumping mold with the creation of a dam around it. When using this method, the consistency of the Best Mix should be such that it forms a ball that does not come apart when you pick up a handful of it. If you shake it in your hand, it will very slowly try to flatten.

Whichever method you use, we recommend using water temperature for your comfort. In warmer climates cool water is just fine as is warmer water in colder climates. Just remember, the warmer the water at the time of mixing, the faster the setup. If you use hot water, the mix might harden faster than you can get it poured!

Mixing for the Pouring Method
For pouring method, measure Best Mix Mold Mix and clean tap water by either weight or volume using these approximate ratios:

By Weight: 4 units Best Mix to one unit water
By Volume: 3 units Best Mix to one unit water

After initially wetting the powder, continue to add the measured amount of water and stir to a consistency of thick concrete. The recommended ratios for Best Mix Mold Mix and water are not absolute, so add the water slowly. If the mixture seems too wet, add a little more dry mix. The mixture should be just wet enough to move through the mold when vibrated or patted.

Mixing for the Layering Method
After initially wetting, continue to add small amounts of water and stir. Best Mix Mold Mix needs to be dry enough to be able to toss a ball of it in the air and not have it come apart. The recommended ratios for Best Mix Mold Mix and water are not absolute, so add the water slowly. If the mixture seems too wet, add a little more dry mix. The mixture should be just wet enough to move when patted with your hand.

The Mixing Process for Both Pouring and Layering Methods
Whichever consistency of Best Mix Mold Mix you need, thoroughly mix for five minutes. Don't skimp time on this step. Yes, it will look mixed after a minute – but for complete hydration of the powder, it takes active agitation for at least five minutes. Don't cut the time short.

After pouring, you have about 20 minutes of working time to finish the process before letting the mold setup.

Trapped air bubbles need to be moved off the slumping surface of the mold so it is smooth. Shaking or tapping the master mold lightly on a countertop or floor will help move the bubbles off the slumping surface (no need to be concerned about how the back of the mold, the non-slumping surface, looks, which is where many of the bubbles will end up). No more than 2 minutes of vibration should be necessary; also stop agitation if the mix starts to harden. This process levels the mix and produces the finished surface on the bottom of the slumping mold; there is no need to use a trowel.

Shaking the mold isn't recommended when using the layering method, since the mix will slide down the sides of the casting. Instead, press out the bubbles as you pat the surface while layering the mix.

Before the mix hardens is the time to make vent holes -- creating them now will be much easier than trying to drilling them in later. Finishing nails work good. (For those unfamiliar with the term venting – during slumping air may be trapped and sealed between the glass and the mold resulting in an incomplete slump or the formation of large bubbles in the glass. Providing small *air vents* at the lowest parts of the mold eliminates the problem.)

Next, place the poured mold on a *level* surface and cover with plastic. The mold must be kept covered to retain all moisture for the entire setup time of 12 to 24 hours (depending on thickness).

Removing the plastic cover and pull the casting apart from the master. If the casting doesn't release with light tapping and pulling, try heating the casting on top of a warm kiln. Set the Best Mix side of the casting onto the lid of a 600 to 800 degree heated kiln. The heat expands the water in the mold ever so slightly, which helps to part the master and the casting. Be patient. With proper mold preparation and enough applied heat, the finished mold should come out of the master mold. The master and casting should not be left for several days. This seems to make parting more difficult.

Your finished mold needs to be fired to full fusing temperature. We do this to ensure complete drying and burning out all organic materials. Good ventilation is needed here. Allowing the mold to dry out on it's own for a day will reduce the amount of moisture being released into your kiln.

Mold Curing Schedule			
Degrees/Hr	To	Hold	
40	225	2 Hrs	Drives out moisture
55	400	1 Hr	Ensures a dry casting
75	1400	1 Min	Final heating and burnout
Off		None	Cooling

Notes

Best Mix Mold Mix produces molds primarily for fused glass slumping. Slumping molds that we have cast and tested to date show no sign of failure after hundreds of firings of up to 1280 degrees F. (At this time, there is no known limit to the number of repeat firings.) Also, we have discovered that the use of kiln wash may not be needed when slumping with molds made with Best Mix Mold Mix. In 100 percent of all test firings, using both Uroboros and Bullseye fusing glass, glass has not stuck to the molds when fired at slumping temperatures up to 1280 degrees. We occasionally have seen small specks of the mold surface pull away, but never a complete failure to release. We regularly use a fine layer of *dry* kiln wash on the surface of the mold to make sure the glass does not stick. However, when we have a deep mold where the glass has to slide down the slumping surface, we do a normal wet kiln wash and a dry powder. This decreases the possibility that the glass will catch during the slide.

Since we have no control over how Best Mix Mold Mix is used, we cannot make any guarantee as to your success with this product and will not be responsible for any losses connected in *any way* with the product's use. We will gladly help troubleshoot any mishaps or answer any of your questions via e-mail or phone.

We are dedicated to the success of Best Mix Mold Mix and that can be accomplished only by your success in making the best molds possible from it. Feedback is welcomed and encouraged – we want to know about your experiences using Best Mix Mold Mix.

We will share our experiences and working techniques using Best Mix Mold Mix as we find time to document our results. We encourage our customers to also share their experiences and thoughts.

Best Mix Mold Mix Instructions for Use

Determine the volume of mix you will need to fill your mold.
Measure Best Mix Mold Mix and water into separate containers.
By Weight: Approximately 4 units powder to one unit water.
By Volume: Approximately 3 units powder to one unit water.
Prepare master mold by cleaning it and using mold release.

Add water depending on the type of mold you are making:

Pouring method:
Add water slowly to mix until the consistency of loose cement.

Layering method:
Add water slowly to mix until it can be tossed gently in the air and not fall apart.

Mix for five minutes.
Fill master mold until all surfaces are covered.
Shake or tap mold to remove air bubbles off the surface of the master.
Fill master the rest of the way full and shake or tap lightly again.
Place a nail in shallow area(s) of mold for a vent hole.
Cover mold with plastic.
Let sit for 12 to 24 hours, depending on size of mold.
Separate master and casting.
Clean up casting with putty knife.
Cure in kiln using the recommended heating schedule.
Powder finished mold with kiln wash or apply wet kiln wash.
Slump.

Best Mix Mold Mix
Developed by Fusers,
for Kilnformers Worldwide