

PLASTER MIXING FORMULA

• from *Answers to Potter's Questions*, page 114, edited by Barbara Tipton

Figure the size of the mold you want to make in cubic inches (width x length x height), then divide the resultant number by 80. The answer will show the amount of water needed in quarts. To 1 quart of water, add 2 pounds, 12 ounces of plaster.

example:

a wedging table 24" wide x 12" long x 2" deep	=	576 cubic inches
divided by 80	=	7.2 quarts of water
quarts of water times 2.75 (2 pounds, 12 ounces)	=	19.8 pounds of plaster (19 pounds, 12.8 ounces)

PLASTER MIXING TIPS

- Wear a dust mask
- Prepare your mold & work area
- Add FRESH plaster to fresh, clean, room-temp (~70°F) water by sprinkling/sifting over the water surface evenly but efficiently. Hotter water = Faster setting plaster
- Allow plaster to soak for 1-2 minutes maximum (small batches require less soaking time than large batches)
- Mix by hand or stir stick in figure-8 motion without incorporating air. Mixing time affects absorption rates: more mixing time = tighter, less-absorptive results
- Tap mixing container on hard surface to release trapped air. Pour plaster into the deepest area of the mold so the slurry flows evenly across the mold surface.
- Once mold has been poured, tap tabletop with a rubber mallet to vibrate mold and release any air bubbles
- Plaster will heat up because of a chemical reaction. Once cool again, remove cottles/mold forms and allow to dry thoroughly.
- Work on a level surface

Island Style plaster mixing method

from www.plastermaster.com by Dan Kijak (info edited for space)

Estimate how much water it will take to fill your molds. You actually only need 2/3 of that amount but mold makers always mix a little extra. The manufacturer suggested ratio for USG No 1 Pottery Plaster is 100# plaster to 70# water. The Island style method will come close to that ratio but you won't have to actually measure.

Put the amount of water you've estimated into a bucket. **Never put the plaster into the bucket first and then dump water on top! Always put the water in the bucket first, then add plaster to the water.** Good plaster should feel smooth and free of hard lumps. Add plaster to the water by the handful - sift the plaster through your fingers into the water - this process prevents large clumps of plaster from falling into the water. Work quickly and spread the plaster all around the surface evenly. Plaster should fall like gentle rain on the water surface, then sink out of sight.

Do not mix the wet plaster or disturb it in any way while sifting it in or this system of measurement will not work. Keep sprinkling plaster into the undisturbed water. Eventually you will notice little islands of plaster forming above the water surface. When the islands stay at that level and get damp but do not sink below the water, you have the proper amount of plaster in the water.

Now let your islands set for 2 minutes. This allows water to penetrate the molecules of plaster. This slaking prepares the plaster for the mixing process.

When you are sifting your plaster into the water, you will notice that it will begin to settle just below the surface. If you wait a minute, you will see clear water above the plaster. That amount of clear water is your gauge. You can leave 1/4" to 1" of clear water over the plaster to make a weak plaster mix, or you can bring the plaster exactly up to the surface level for a thicker mix and harder casting. For a super hard mix, pile up the plaster in high islands and let them become thoroughly damp before mixing. A super hard mix would be better for carving.

You can use your hand or you can use an electric drill with a mixer attachment. Do not incorporate air into the mix regardless of mixing method. When you use your hand to mix, you can feel every lump and judge the smoothness of the mix. Batches over 2 gallons are not practical to mix with your hand. A mixer blade attached to a 3/8" or 1/2" electric drill will be needed for larger batches. Very small batches can be mixed with a spatula. (Up to about 2 pints.)

Mixing by hand: place your hand flat down in the bottom of the bucket, spread your fingers wide, and shake your hand back and forth to agitate the plaster on the bottom. Every once in awhile, use your hand to move some plaster from other areas to the bottom and continue shaking your hand back and forth. Do not take your hand out of the bucket during the entire mixing process. That would introduce air into the mix. You will notice that the plaster creams after a certain point. It takes on a definite change in texture. See if you can detect when it makes the change. It will have more body, feel smoother and creamier. You must mix beyond this stage for the plaster to set properly. Keep mixing for 3 minutes. Mixing longer than 3 minutes will produce a harder, stronger casting but be careful not to mix so long that your plaster sets up in the bucket. The more the plaster you used in the original plaster-water blend, the faster your plaster will set.