

Selecting Appropriate Tools for Mixing Slips and Glazes

Mixing by Hand

Mixing slips and glazes without a powered mixer is labor intensive, and you have better things to do with your time. That said, oversized whisks available from restaurant-suppliers work very well for keeping glazes in suspension, and are ideal if you are glazing plates, platters or serving bowls in a low, wide container where a drill impeller mixer would distribute the glaze across you and your studio. A large whisk will scrape the bottom and agitate the mixture in a way that no other hand mixing device can match, bringing all the materials back into suspension.

For glazes in five-gallon buckets, it is a good idea to initially mix with a drill impeller mixer, but in a group studio where multiple people are competing for use of that device, wood dowels or any convenient, clean wood sticks function very well to regularly stir the glaze and keep it in suspension. Another popular manual mixing tool for either of these applications is a sturdy toilet brush.

Drill Impeller Mixers

Drill impeller mixers or mixing wands that fit in a standard electric drill have become the ubiquitous mixer for glazes, slips, and mortars in most ceramics studios. There is nothing better for the job, but there is also a fairly wide range of mixer attachments available. Over the past 50 years I have tried just about every kind available. My favorite by a wide margin is the Jiffy Mixer Model ES, available on amazon. It does everything you need to do except for digging into hard sediment on the bottom of a bucket. For that, there is no better unit than a Hanson plunge mixer, also available on amazon. The primary difference in function is that the Hanson has abrasion nubs on the bottom, and therefore works better for digging into hard sediment. The Hanson plunge mixer is also more suitable for mixing mortars and thick slurries. The downside is that you are taking a risk by using the Hanson in buckets that have an irregular surface on the bottom, because those abrasion nubs can make short work of the plastic, and your glaze or slip might end up flowing across the studio floor. I use the Hanson to mix old glazes that have been sitting for a long time, and I am just very careful when I get near the bottom. When mixing kiln patching mortars, homemade insulating castable, sealing mix for bricked-up kiln doors, or small batches of concrete, the Hanson is the best drill-impeller mixer for the job.

For general studio glaze mixing, I prefer the Jiffy mixer. The double ring design eliminates any abrasion of sides and bottom of the mixing container, and yet it does an excellent job of blending glazes. I find that the model ES Jiffy mixer with the 3/8" shaft creates exactly the right amount of turbulence in a five-gallon bucket of glaze. With a variable-speed drill, it is a simple matter to mix or blend any amount of glaze without splattering it all over yourself and your surroundings. For slightly smaller amounts of slip or glaze, the ES-2 with the 1/4" shaft is appropriate, but for very small batches the immersion blenders mentioned below far more efficient, and then you don't have to be looking for your electric drill or changing attachments.

Your friendly neighborhood home-improvement center carries a variety of drill impeller mixers, but good luck finding them along those cavernous alleyways. Some years ago at a popular chain establishment I asked about impeller mixer attachments to fit in an electric drill, and the friendly,

knowledgeable clerk summarily responded “No, we don’t have anything like that.” When I explained further to ensure that he understood my need, he got testy and said “Look buddy, I know my store, and we don’t have anything like that.” I went on a mission. In the drywall section I found giant impeller mixers for 5-gallon buckets of drywall mud. At the end of an aisle in the tool section I found three sizes of flashy chromed impeller mixers. In the paint section I found the same, plus a small size with plastic impeller for use in one-gallon paint cans. In the tile section I found ones for mixing tile cement. During this quest I selected one of every size and type, and put them in a shopping cart. After exhausting all the possibilities, I delivered the cart to the clerk who had been so helpful and said “Here, I’ll let you put all of these drill impeller mixer attachments back where they came from.” He gave me a red-faced glare, but thankfully was lost for words.

Of those varieties, the chromed steel ones are the most common. They have a single ring around the bottom circumference and thus will not abrade plastic buckets, but I find them far too aggressive. If you hit full throttle on a good variable-speed drill, you will splatter glaze everywhere. Over time they rust, and while far cheaper than the stainless steel Jiffy Mixer, they are a poor substitute.

Electric Drills for Use with Impeller Mixers

This is an important matter to consider. Except for the most expensive high-speed units, cordless drills are usually inadequate for use with impeller mixers, because they do not develop adequate speed for effective mixing. A standard plug-in 3/8”-capacity VSR (variable-speed reversible) drill has a much higher top speed. Do not get a 1/2”-capacity drill for mixing slips and glazes, because it is slow and inefficient for this application and has far more torque than needed. You can pick up a 3/8” VSR drill from Makita, Ryobi, or Dewalt for around \$60. It will power your Jiffy Mixer for the rest of your life, and you’ll always have it for other applications when you forget to charge the batteries on your cordless drill.

Countertop Mixers and Blenders

In my own experience, countertop mixers like the old Sunbeam Mixmaster simply are not useful in the clay studio. They are slow and cumbersome, and the tasks they perform are better accomplished with a drill impeller mixer or an immersion blender. The same is true of traditional countertop blenders. Larger blenders like the commercial Vita-Mix or Waring units are great for making pulp for paper clay, but for other mixing tasks I find that the cleanup involved renders traditional blenders impractical in comparison to immersion blenders.

Immersion Blenders

Variably called stick blenders, hand blenders, plunge blenders, or immersion blenders, these kitchen power tools have a motor at one end and an immersible mixing wand at the other. Unless you spend a great deal of money (\$300+) for a large commercial model, immersion blenders are too small for blending glazes or slips in quantity, but are ideal for glaze tests or small amounts of slip, underglaze, or slurry. To see a good range of home-quality immersion blenders, enter “hand blender” in the search box at amazon. Bear in mind that unless you are going to purchase a very high-quality unit like a Viking, Bamix, or commercial Waring unit for \$100 or more, then you shouldn’t spend more than \$35, because the intermediate-priced ones will be little or no better than the cheap ones. We use these a lot at the Appalachian Center for Craft, and for the past few years have had good luck with the “Cuisinart CSB-75BC Smart Stick” hand blender, available for \$34 on amazon.