



CLAYMAN

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PRODUCT INFORMATION

PREPARING & STORING GLAZES

If you have bought a glaze in powder form or plan to mix your own glazes you will need to prepare them prior to use. You will need a sieve (80's for stoneware and 120's for earthenware), a large brush (lawn brush), two wooden slats, and two plastic containers. Before starting make sure all of your utensils are clean.

1. Partly fill one of the containers with water (a third of the container is reasonable but the exact amount will depend on the amount of glaze you are preparing. Trial and error is the best way of discovering the correct amount). Put the glaze powder into the water and mix. (N.B. Always wear a suitable mask when preparing glaze.)
2. Place the sieve over the second container using the slats as support. It is important to ensure it is stable. Pour the glaze mixture into the sieve until it is half full. Use the lawn brush to push the glaze slowly through the sieve, using a circular movement. Squeegee all of the material left in the first container into the sieve using a rubber kidney. Repeat the brushing process until all the glaze has passed through the sieve. Some material residue may be left in the sieve. If this is found dispose of it with care.
3. The product you now have is referred to as glaze slop and could be used immediately, although we recommend leaving the slop overnight before use.
4. When left the glaze slop will settle out. You will find a slurry of glaze material at the bottom of your container and clear water at the top. At this stage carefully pour off some of the clear water (try pouring off half as a starting point). Stir the glaze, ensuring all the slurry is dispersed in the water. A problem facing all beginners is what thickness the glaze should be. Glaze makers can make recommendations, but the final choice is with the potter and what results they want to achieve. A standard is that transparent glaze will always be thinner than opaque glazes and generally the analogy to single cream for consistency is used. The best way to find



the desired thickness that suits you and also as a means of comparing different consistencies is to carry out trials. Make up test tiles with one hole near to one of the sides to enable it to be tied to the glaze tub for quick visual reference. If you use more than one clay make tiles in all the clays that may be used with the glaze. Glaze and mark the tiles. The results of firing these should provide you with very useful information. When you have tested and found your best consistency it is a good idea to weigh a known quantity of the glaze slop and record the result. This is often known or referred to as the pint weight. All future mixes of the glaze are then corrected to this pint weight by adding or removing water. Another way of measuring consistency is by using a hydrometer.

5. Always store mixed glazes in containers with tight fitting lids. This helps prevent contamination and water evaporating off the surface. As mentioned previously when using a glaze that has stood for a time always ensure all slurry is dispersed in the standing water. Occasionally it is good practice to re-sieve the glaze to ensure the glaze is always at its best.
6. It can be found that some glazes form a "pan", hard lump at the bottom of the container when stored. This is a particular characteristic of glazes containing high proportions of frit. This hard lump is often difficult to break up and disperse with the water, but it is essential this is done before the glaze is used. When the correct glaze consistency is achieved, a suspending agent can be added (proprietary suspending agent, bentonite or calcium chloride are all available for this use). Suspender should be added with caution. Refer to our special note on adding suspending agents.

REFERENCE NOTES

The amount of water required to mix any glaze will vary from glaze to glaze depending on the clay content (Ball Clay, China Clay etc) of the glaze. The porosity of your bisque fired clay, the time taken in dipping into the glaze, and the maturing temperature of the glaze are all factors that need considering.

A glaze intended for spraying should always be of a thinner consistency than that used for dipping. Trying to spray a glaze with a specific gravity that is correct for dipping will nearly always result in the spray gun blocking.



The firing cycle used, the type and size of kiln used, the clay body and the thickness of the applied glaze are all factors that can or will affect the final result. It is always advisable to test variations prior to production runs of any ware.

We tend to talk in temperature when referring to ceramics, but the results that emerge from the kiln are the result of heat work. Heat work is a reference to the effect of heat over a period of time. This effect is best measured by the use of pyrometric cones, although most potters will acquire a kiln with a temperature controller. As a general rule if a firing runs for about eight hours, a controller set to 1000°C will equate to cone 06. At earthenware temperatures setting your controller to 1100°C will cause cone 03 to bend well and cone 02 will have started to go. At stoneware the difference is at its greatest. Cone 8 is considered to be the 1260° cone, but the kiln controller should be set to 1235-1240°C to produce comparable heat work. The best practice is to use cones in the firing so that the temperature set on the kiln controller can be compared to the cones at the end of the firing.

THE USE OF GLAZE SUSPENDING AGENTS

Adding a glaze suspender to the glaze mix will not stop the materials dropping out of suspension on standing, but does prevent that slurry forming such a hard pan. The question is how much should be added. The answer is not simple as all glazes depending on their make up are different. Glazes made from lead frits may need approximately 10ml per 5 litres whereas glazes made with Alkaline Frit (normally raku glazes) suffer the problem more severely and will need much more. One can put too much suspender into a mix, therefore resolving the problem is very much a "suck it and see" method.

Firstly all glaze sediments, irrespective of the glaze, must be dispersed with the water. Once this has been achieved add glaze suspender sparingly. We suggest 10ml to 4-5 litres of glaze slop. If a hard sediment is formed again on standing add 5ml more suspender after dispersing all sediment again. Follow this procedure until the sediment that occurs on standing is soft and easily dispersed. Once you have achieved the correct balance of suspender to liquid glaze record the quantities for future reference.

Some suggested starting proportions of suspending agents are up to 2% bentonite mixed into dry glaze materials before adding water, or 0.1% Calcium Chloride dissolved in hot water and carefully added to the slop glaze. Too much Calcium Chloride will cause the liquid glaze to over flocculate and turn to jelly, so caution must be exercised when adding it. The effect will gradually wear off over time. Some glazes do not respond well to being stored in slop form - raku glazes, particularly those made using Alkaline Frit and those containing large quantities of colemanite or



calcium borate. These should always be freshly prepared.