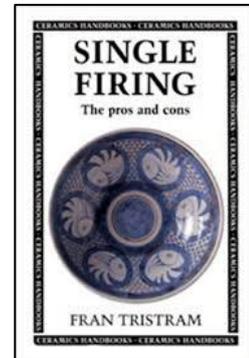


Once-firing from a student's perspective

Crazily, I made the decision last September to once-fire all my final year degree work to reduce my carbon footprint, without fully appreciating the challenges involved. Whilst not appropriate or suitable for everyone, I've since learned several practical tips which I can pass on here to those who might not have considered it before.

I've had a limited exposure to once-firing and I'm sure others will have additional suggestions, so if anyone would like to share their once-firing experiences in the next Newsletter, that would be great too! I've used Fran Tristram's Ceramic Handbook on Single Firing (first published in 1996) as a reference, as well as many online articles and been further inspired by Dame Lucie Rie (1902-1995), having read her biography 'Modernist Potter' by Emmanuel Cooper.



There are many terms associated with single or once-firing, so for the purposes of this newsletter, I'm using the term once-firing and my definition means firing glazed greenware to its finished state in one process. My current work (small-medium functional pieces) is raw glazed, misses out the bisque stage and is fired straight to stoneware in an electric kiln. The clay I use is the 'Really Good Stoneware' from Clayman Supplies. These are some of the things I've found:

Tip 1 – Drying process

I leave my work to dry out slowly and naturally until it no longer feels cold and changes to a lighter grey colour. I've found it is best to apply glaze to the work in this state as opposed to when it's leatherhard. I then leave the glaze to dry for at least 24 hours before firing.

Tip 2 – Clay thickness

The thinner the clay, the harder it is to glaze as there is less clay to take up any moisture from the glaze, and the softer and more fragile it becomes to handle. Therefore, I've found slightly thicker walls give more security when glazing and transporting work around the studio.

Tip 3 – Types of glaze

I've experimented using both dipping and brush-on glazes. Dipping glaze contains a higher water content, so reintroduces more water to the dried body, which can re-soften the clay, making it difficult to retain its shape. I've also found dipping glaze can flake off the clay body when dry and is therefore harder to handle the form into the kiln. Commercial brush-on glazes are designed to adhere to dried clay, and I predominantly use these. Interestingly, Lucie Rie's glaze notebooks (as reported in Ceramic Review by Emmanuel Cooper in 1994) contain instructions to make brush-on glaze stick by adding gum arabic to the recipe – the aim is to get the best glaze 'fit' to the clay. There are plenty of brush-on glaze recipes online, but I've not tried making any – yet!

I currently use PotteryCrafts Brush-on Stoneware range, specifically New Oatmeal and Sea Green, and have found they don't 'move' in the kiln, so can be confident they won't damage the kiln shelves by running. They give a matt sheen surface, which I like – obviously it all depends on the finish and look you want to achieve. I haven't had any issues with bubbling or crawling with these two glazes mentioned, although I have tried a Duncan True Matt brush-on glaze which caused bubbling so it's

just a case of trial and error. I haven't tried colouring my clay as a substitute for glazing, but this is obviously another way to go.

Tip 4 – Application of glaze

Wax any areas you don't want to glaze FIRST! When I've forgotten to do this and had to clean excess glaze off with a sponge, I've ended up wiping off the clay too and altering the form.

I've found the more complicated the form, the harder it is to use either dipping or brush-on glazes. Dipping is difficult as you can't use tongs. If there isn't a big enough foot ring to hold onto while dipping, then I have also found finger-marks (which are then dabbed over) still show up after firing. This is probably due to grease on one's fingers and although I've tried finger nets, I've found these difficult to keep on! I've had several failures with dipping whole forms, only to have them break or collapse during dipping.

I've tested using a dipping glaze on the inside of a form only, by pouring it in using a jug. I first masked the outside rim with tape to prevent any drips when pouring back out again, to avoid having to wash the glaze off. I waited for the inside of the form to dry out before applying a brush-on glaze on the outside, which worked well. I've also left the inside of a form unglazed as firing to stoneware makes it non-porous, depending on the clay that's used.

I apply my brush-on glazes with a range of paintbrushes, depending on the size of the area to be covered. However, I can't reach some areas inside my forms with a paintbrush, so have created my own flexible sponge brushes using natural sponges, wire cable and frog tape. I apply two generous coats of glaze and plan which areas to glaze first and how to work my way around the form. This is because when applying two coats it becomes difficult to see which areas you've already glazed twice.



Tip 5 – Firing times

I've found general advice suggests slow ramping. My work using stoneware clay is successful in our University kiln, although the firing schedule for a stoneware firing in our electric kiln to 1250 degrees Celsius (deg) is quite quick, about 7.5 hours: 150 deg per hour to 600 deg, then 200 deg per hour to 1250 deg with no soak. I make sure everything is 100% dry before firing, however, if using clay with a high shrinkage rate, I understand this might cause cracking if ramped as quickly as this. Note! Digitalfire suggests if raw glazing, work is best fired to stoneware as earthenware glazes can become a barrier too quickly for carbon and other gases to escape and breakages can occur.

Tip 6 – Control

If you have control over your own studio, glazes and firings, you can hopefully avoid any accidents in moving work around the studio and loading and unloading kilns. There is a higher risk of damaging work as it remains in its raw state for longer before firing.

Summary comments!

The techniques of once firing have made me think more carefully about my designs and the way I practice, has made me take more time and care handling my work, but I've enjoyed the challenges of raw glazing. I think there is definitely more chance of damaging work when raw glazing complicated pieces, but I'm getting more used to the technique so now avoiding some of the pitfalls. I also like this technique as it means I use less energy and would love to know any tips anyone else

has got to share as I am still very much a novice and continue to learn from each firing! If you want to check out my Instagram feed you can see some of my results (you don't need an account to view): <https://www.instagram.com/mandyenglishceramics/>.