

Questions and Answers week 3 (Firing)

Q:

A question about refiring. If you fired a pot and got poor results (due to bad position in the kiln or wrong firing schedule), can you improve things with a refire?

A:

Sometimes you can refire in an electric kiln to a bisque temp to bring out more of the orange color. I've tried this with mixed results. I recently read something about it with firing instructions, I'll see if I can find it. Also I've tried spraying shino on a glazed pot to refire, again, mixed results. I use a light spray, hit it with the hair dryer to dry, another light spray, dry, until its the thickness you want.

Student Comment:

I have tried LOTS of times with no luck:(. I end up throwing it away and wasting my time.

Q:

I am a complete beginner - doing pottery only last 8 weeks, not having a single pot fired beyond bisque (hopefully, in the next 1-2weeks I should have my first 20 pieces fired). I go to community studio that provides glazes. I have access to 3 Shino glazes, one of them being Malcom Davis. I tried to do everything I saw you doing, but I got no variation in glaze color and no soda coming out to the surface of the glazed pieces When I came back one week after I glazed. I work with stoneware and my pieces are all hand built and usually have quite a bit of texture on them. Am I doing something wrong or does the stoneware react differently than porcelain? How thick should the glaze be? Maybe I am putting it too thin - I have been spraying because I feel I have more control that way. The buckets of glazes in studio are too lumpy to put the piece into them. I sieve the glaze and then spray it on. When I told my instructor he said that I may still have some variation in color after cone 10 reduction firing, but I have my doubts after I saw how your pots looked a week after glazing.

Anyway, any word of wisdom you may have for me would be much appreciated.

A:

First, I would sieve the glaze. If you have a hydrometer, I have the thickness between 42 and 45. If the shino is too thin, you will not see much variation, especially on stoneware. You could try incorporating white slip onto parts of you pieces, you will get more color where shino is over the white slip. Try some test tiles with just your stoneware and also white slip over the stoneware, then test with different thicknesses of shino and also put a brushstroke of wax on the tests over the shino. You might want to make two or three sets of tests and put each set in a different part of the kiln since not all parts of a kiln will get the same amount of reduction. And I would love to see a photo of your tests if you do this. I find dipping the pieces gets a better result for me. If it is a shape that cannot be easily dipped and you spray it, make sure you get a thick enough glaze coating.

Student Comment:

Hello there. Wanted to pass ok my two cents. In a handout Malcolm Davis gave out, he talks about how he only dipped, never spraying. He also said he preferred this glaze on the thinner side so he could double dip. My guess is that there is three things happening. First, that glaze should not be lumpy. The amount of time the glaze sits after mixing effects the final result, just as the number of days after glazing and before firing. If you have a lumpy batch, it would be good to re-screen it and then let it settle a bit so the air bubbles settle. Second, the texture of your pieces create inconsistent texture and the effects our teacher describes are going to be much harder to set and understand. If you want to see the variation happening to start, a smoother piece will help. Lastly, waiting a week after glazing to check skips over many changes to the glaze on the work. Certain formations will come and go in that time and part of what we're learning is to watch and see how the sodium migrates to the surface

Q:

I'll be glazing both stoneware and porcelain. I think it might be helpful to keep the iPhone handy and capture any changes over the three days of test glazing and then the firing, so I'll organize myself to do that. Very hard to do that in a community studio when you only go in once a week. A variable you probably can't control is how the pots are fired and any slow cooling or down-firing that Connie recommends. There must be a reason we all have all those cones in the cone packs!

Connie Christensen, to what cone do you bisque? All of my ready work is bisqued to cone 06, but I will have a load ready to go at your recommended cone. Another variable to test.

A:

I bisque to cone 08, it absorbs more water than cone 06, and since the sodium is soluble, it absorbs more sodium into the pot. Be sure to bisque on the slow setting.

Q:

Hi Connie, two questions from this weeks videos. First, my studio uses kilnwash on our shelves and I noticed you leave yours bare. We don't apply an alumina hydrate solution to the bottom of our pots and I suspect that the kiln wash is serving the same purpose. Second, due to the legality of where I fire, no kilns can be unattended while firing, even if only with a pilot. Does candling overnight as you are doing serve a shino specific purpose or simply preheat the kiln slightly to make firing easier the next day? Thanks and looking forward to seeing the kiln unloaded! BTW, the large bowl that you left uncovered and placed mid way up on the right of the front shelf got the most incredible pattern. Really interested to see how much of that comes through.

Student Comment:

I'm interested in this response, too. Can you tell us your kiln temp when the pre-heat is complete? The pilots on my kiln are big, so I normally pre-heat for one hour and reach about 500F, more of a slow start than a pre-heat, but it has always worked. In my very first firing I did an overnight preheat and had reached 1200 degrees, so don't do that any more. Just a waste of gas and it was hard to reach cone ten because the bricks had absorbed so much heat they became less refractory. At the end of that firing the bricks on the kiln were too hot to touch. Now I fast fire, go into reduction after 1400 degrees and am done in 7 hours unless I down fire afterwards. The outside bricks are still cool. Curious to see this week's videos and what shinos require!

A:

Just kiln wash should be fine but if you have a problem with plucking, try the alumina hydrate on the bottom of your pots. By having the pilots on, the kiln is about 250 - 350 degrees (F) in the morning. It just helps preheat the kiln and get a faster start on the firing. You could just keep your burners on low for a little longer (an extra 1/2 - 1 hour or so) when you start the firing if you don't candle it overnight. We have a rule that if the burners are on, you can't leave the kiln unattended but do allow pilots on overnight. Also I like to candle overnight so the cone packs are completely dry so that there is no worry of them exploding.

Student Comment:

You can get around the rule requiring someone to be present, but still come into a firing with the kiln and ware pre-warmed, if you turn on the pilots as soon as you finish loading. I do that while I am clearing up from my loading process. When I am done lining things up for the firing, I close the damper and cover the burner ports. Even an hour of pilot pre-heat gets the kiln up to around 300-400F. And unless it's really cold outside, some of that residual heat is still there the next morning.

Q:

Does anyone else in the group fire with venturi burners, without fans? I have a home-built Minnesota Flat top, about 22 cubic feet, downdraft. It roars all of the time, louder the higher the gas pressure. Gas pressure is measured in pounds on my regulator, and I normally fire with ten pounds of pressure. I don't know how to interpret [Connie Christensen's](#) comment about not having a roaring flame or how to compare 3 water column inches to pounds of pressure. [Connie Christensen](#), do you have ideas in this area?

A:

It's been a long time since I fired a kiln with Venturi burners. The primary air is controlled by the disks on the back of the burner, the more open they are, the more the flame will be bushier and louder. You might experiment with that and close it down a little. Also, you may not need that much gas, look at the flame when setting it at its final turn up, if it looks more like a jet engine, maybe you don't need as much gas. Not knowing your kiln, these are just suggestions and you may already be using the proper amount of gas. When making changes, I'd just make one change at a time, maybe start with the primary air and close it a bit if the firings are not getting the reduction you want.

Student Comment:

Thanks, Connie. I never have a problem getting reduction with the air open, I just control reduction by using the damper and watching the oxyprobe. And watching the smoke seep out of the kiln! That's when I know I've gone way overboard and open the damper a bit. That usually happens when I put the kiln into reduction. Overkill, but I adjust quickly.

I haven't used the lower (just use 9, 10 and 11) cones to gauge the start of reduction, though, and think I've waited too long on my few previous tests for shinos.

I made a mistake when we built my kiln and put the two pyrometer probes and the oxyprobe on the side of the kiln in line with the flames. So of course it reads hot on the bottom. For my first test, I'll leave things as they are and see what the super kiln packs tell me about heat top to bottom. The pyrometer and oxyprobe can be moved to the back of the kiln for future firings.

If I'm getting a great variation as shown by the lower temp cones on my first Shino firing, then I'll try modifying the primary air and gas flow, but usually there is a steady rise throughout the firing with temps top and bottom evening out toward the end of the firing. If there is a great disparity, I slow the rise on the bottom by closing the damper a bit, and that seems to do it. If carbon trapping occurs at the lower temperature, that seems to be the time to assure even temps, and I'm looking forward to seeing what they reveal!

The way I fire now, there is about a half cone difference between the top and the bottom at the end of the firing, bottom being hotter. Reduction is remarkably even throughout the kiln. Occasionally a pot near the burner ports will have a slight bit of oxidation on that side, but if the kiln is packed with pots arranged to provide good air flow, there are consistent results throughout. This is mostly with celadons. They are like canaries in the coal mine.

Well, there will be a lot of experiments in my first firing in about two weeks. Can't wait to see the results of your firing next week.

A:

Sounds like you know your kiln well. I have an oxyprobe which helped a lot when first firing shinos. I share my kiln with other guild members and the probe has been whacked too many times and its expensive to fix so I stopped using it. I have fired shinos in this kiln so many times that I have a firing schedule that works for me now so I really don't need to use it. Please post photos of pots from your firing.