

Andy Ward - Arizona Oxidation Firing

Background

I have been working to accurately reproduce Salado polychromes (Roosevelt Red Wares) for several years, in the past year I probably conducted over 20 individual firings trying to get it right, sometimes firing one pot at a time so I could refine my technique when firing the next pot. During the course of this experimentation I trended towards using smaller and smaller sized fuels in an attempt to keep the duration of my firings short to hopefully keep my vegetal black from burning out in the oxidizing atmosphere. The key, I have found, to using small diameter fuel is to ensure that you use enough fuel, otherwise the fire doesn't get hot enough and the pots come out dark and smokey. I have had so much success with this firing regimen that I have begun using it for other than Salado polychromes, in fact using it for all my firings. The advantages are that this small fuel (the thickness of my thumb or smaller) is readily available almost everywhere and the firing is of a very short duration so I can fire my pottery and be done in a brief period of time, usually less than an hour and a half from starting the primary fire to having my pots loaded into my car and headed home.

The Stage

I was concerned that my fuel of choice, mesquite, was not available in Tijeras for the kiln conference but decided to go ahead and try using my regular firing routine with juniper. I initially wanted to fire a bunch of Salado polychrome at the conference and brought 4 Gila Polychrome pots to fire, but Roger Dorr talked to me about doing some experimental Salado firing on Sunday, so I opted to hold back my Gila Polychromes from the main firing on Saturday afternoon. Instead I opted to fire my 2 Tucson Polychrome mugs and looked for others who wanted an oxidizing firing who would join me. Eric Ludwig offered a red ware bowl and Ron Carlos contributed a brown plain ware jar, a woman whose name I don't know added a bisque fired egg shaped seed jar. I called it the Arizona fire because all the pots except the little bisque fired pot were made by potters and with clay from Arizona.

Primary fire

I started by burning down a bed of coals and preheating the pots around that fire. I should note that I don't use a pit like most of the others but fire right on top of the ground. I may have made my first mistake at this point, I sat my pots to preheat right on the ground as I usually do at home, but I noticed that everyone else was setting their pots on top of sandstone slabs. After the firing one of my mugs had 3 pops on the bottom that I think may be the result of moisture it acquired while sitting directly on the ground at this stage. The ground where I usually fire is extremely dry so this has not been an issue enough for me to have figured out the cause before now, also being mostly self taught I did not learn this trick from my teacher.

Kiln Setting

Once the coals were burned down I placed stones on top of the coals and arranged the pots upside down on the stones. Erik's red bowl was put down on the ground to achieve a smudged interior. I had some difficulty arranging the post satisfactorily because of the differences in the heights of different vessels, Erik's bowl sitting down in the coals was very low but wide while Ron's jar was very high. I rearranged them until I was satisfied. Once they were arranged I left them over the coals for a good period of time to heat up and drive off any remaining water.



Secondary Fire

While my primary fire was burning and the pots were preheating I was busy breaking juniper sticks of thumb size or smaller into pieces about the length of my forearm. By sizing and stacking my fuel ahead of time I can quickly put it in place when needed. One problem with using small diameter fuel is that it ignites and burns quickly, you don't want to be halfway done placing your fuel when it starts burning, so it helps to be able to put it in place quickly.

Once my pots had sat over the coals for approximately 10 minutes I began stacking the fuel over the pots by grabbing handfuls of sticks and placing them over the hot pots. The fuel did not readily ignite and burn as I am used to, I don't know if it had to do with the differences between mesquite and juniper, the fuel moisture being too high or some other factor, but I had to work at

getting it to burn. Once lit it still did not burn as energetically as I would have liked, I have found that a successful firing of this type requires a fire that burns intensely, this one did not for whatever reason.



First Results

Once the fire began burning down leaving the tops of the pots exposed it was obvious that they had all turned out dark. We tried piling coals over the tops of exposed, smoked pots but that had no effect. The pots did not get hot enough to burn off the carbon. Perhaps it was the wind that blew during the whole firing, blowing away my heat or perhaps it was the sluggish fire that seemed content to creep through my fuel. Once the pots were removed from the fire and examined I saw that one of my mugs had 3 pops on the bottom, this was the only noticeable breakage in this firing.

Second Firing (if at first you don't succeed, try, try again)

After the firing we went to eat but the results of my firing gnawed at me the whole time. Soon after dinner I determined to refire the pots that night (when you fall off a horse you are supposed to get right back on). I started building up a bed of coals right away. About this time Roger Dorr asked me if he could add his little corrugated pot that he had just made that morning in his

demonstration, to my fire so it was preheated at this time. I didn't work too hard to preheat the other pots since they were already fired once and wouldn't have any trapped moisture inside.

Once we had established a good bed of coals I arranged the pots in a similar order as the first firing, leaving Roger's corrugated pots to the outside since he wanted to reduce it later on in the firing. After the pots were arranged over the coals they were left to heat for a few minutes.

This time I used larger diameter fuel and more of it than I had in the initial firing, I was determined to overcome whatever factors had led to my cool, smokey firings earlier. The wind had subsided by this time and it had grown dark, a few of us had a nice time sitting around this fire talking while the pots fired. At one point the fire grew so intense that everyone had to move their chairs way back to keep from getting singed.

Second Results

Once the fire cooled down a little, Roger found his little corrugated pot (which was glowing orange) and buried it to reduce it. When the other pots had cooled some more I began fishing them out to see how they had done. The colors were mostly good this time, some had fire clouds in places, Ron's jar was fairly black on the bottom but that was because it was so much taller than the rest of the pots that it stood out of the fire, Eric's bowl was black in places too but when the firing was done it was almost completely buried in coals. Unfortunately several were broken, Ron Carlos's jar was cracked, Eric Ludwig's bowl was cracked so badly that it broke into several pieces when I tried to lift it out of the coals where it had been placed to smudge the interior. One of my mugs had a hairline crack, the other three vessels, Roger's little pot, the egg shaped vessel and my other mug, were unbroken.



It is rare that pots would crack after their first firing, so it is perplexing that we lost so many pots in the second firing that made it through the first just fine. My theory is that they got too hot, or perhaps too hot too fast. The pieces that cracked the worst were both made using clays from the Phoenix area, so perhaps they could not handle higher temperatures as well as others. I did not use any cover sherds, as is my usual practice, so that may also have played a role as the pots receive a lot of sudden, violent, radiant heat from the flames that cover sherds can mitigate.

