

Firing

1 One of the practical differences between soda firing and conventional firing techniques is that the pieces must be separated from the kiln shelves with a high alumina material called wadding. I mix this material before each firing. The recipe that I use comes from the pottery skills course at Thomastown: two parts alumina, one part china clay, two parts molochite, two parts plain flour.



2 The wadding is mixed with just enough water to make a firm but pliable material. Each piece will need at least three pieces to support it through the firing. Any left over wadding is rolled into a thin slab then cut into disc shapes with a pastry cutter. These are dried and can be used in the next firing.



3 Sometimes I pack pieces upside down or on their side. This means that the soda vapour will touch them in different directions producing a variety of flashing marks. Here the small round pod form (left) is placed on three sea shells, which will prevent it from sticking to the shelf.



4 The back section of the kiln is nearly completed. I try to leave spaces for the sodium vapour to reach through all of the chamber. I use wadding to separate the shelves and props. All of the pieces have been given a covering of porcelain slip containing 2% copper carbonate. This is applied when the pots are dry. They are dried again before firing. At this point everything is an off-white colour.



5 Single firing porcelain can be tricky. The dry clay becomes very fragile and needs to be handled carefully. The pots should be picked up from underneath, never at the rim. Any accidental rough treatment at this stage can cause hairline cracks, which can remain unnoticed until after the firing.



6 Orton cones are my most reliable firing guide. I use cone 06 to signal the start of the reduction/oxidation sequence. When the cone starts to soften it indicates the beginning of the soda spraying. The pyrometer is most useful to control the slow temperature rise at the beginning of the firing. For the pots, this is the most dangerous stage. The propane input is too small to register on the pressure gauges, so I have to listen for the sound of the gas passing through the burner jets.



7 Once the kiln is full, the wicket is carefully bricked up, building in spraying ports between each layer of shelves. There are usually eight or nine of these. The cones also need to have their own spy hole. The door bricks are stored on shelves close to the kiln.



8 Every firing has a small bunch of flowers picked from whatever is growing at that time of year in my garden. This is my offering to the gods of fire.



9 The majority of my making processes are fairly relaxed, but the firing causes much more anxiety. It is monitored very carefully and needs my full attention for around 14 hours. I record the details of temperature rises, gas pressure, and so on, every 30 minutes. It has evolved over time and uses a cycle of oxidation and reduction in collaboration with the sodium to develop a range of colour and texture from copper.



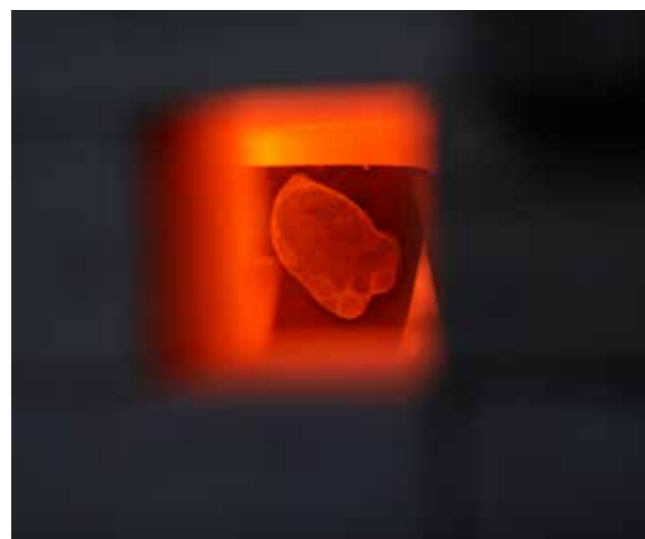
10 After a slow start, the firing proceeds in a conventional way until cone 06 bends. I then start a reduction/oxidation sequence. I use a combination of slide and passive dampers to change the atmosphere in the kiln. I gauge the changes in atmosphere by looking at the length of the flame that emerges from the spy holes.



11 When cone 06 starts to bend, I start to spray a mixture of 2kgs of Sodium Bicarbonate and water into the kiln. I do this in four stages, mixing 500grammes of soda with four litres of hot water each time, as this produces a solution that won't block the sprayer.



12 I have a stainless steel sprayer that allows me to spray the sodium mixture deep into the kiln. I spray for about ten seconds into each port, moving quickly from one to the next. The process including mixing takes about one hour.



13 At this point I am totally involved with the firing. Spraying directly onto some of the pieces, watching what happens as they darken and cool from the blast of soda and water. I see the liquid froth and bubble in the intense heat, leaving behind the marks and colours that I like.



14 When the soda cycle is finished, I turn down the burners, open the damper and allow the kiln to cool slowly for around two hours. A long time to wait, so I have a beer and reflect on what has happened during this particular firing.



15 Late the following day, when the temperature has dropped to 150°C, I take a quick look with a flashlight through the spy holes – this gives tantalizing glimpses, and flashes of texture and colour. Enough to tell me that it looks OK. But I don't get too excited at this stage!



16 The wicket is taken down and the bricks put in their place until next time. I'm happy with what I can see so far – the temperature looks to have been even throughout the kiln and the colours and surfaces have developed well. It's time to get the pots unpacked and start them on the next part of their journey to a gallery or new owner.

17 The finished piece I threw previously.

