
Firing COPPRclay™ for Enamelling

Excellent information and advice by Metal Clay Enamelling Guru [Pam East](#)

During the 7 months I spent beta-testing COPPRclay, I discovered that the standard recommended firing schedule, while fine for plain copper pieces, is not quite what's needed for enamels. The problem is that firing in carbon at 927C at full ramp for 3 hours leaves the pieces a bit too porous and also does not necessarily burn out all the binder material. This does not appear to cause any difficulties for pieces without enamels, but can result in a lot of bubbling and other problems for enamels. Ultimately, I found a two phase firing schedule was needed to ensure all the binders are out and the pieces are completely sintered.

Phase 1: Binder Burnout

- Fire on an open shelf or on fibre blanket if shaped pieces require support
- Ramp Speed 260C per hour
- Temp 293C
- Hold 15 minutes
- At the end of phase one, the pieces will be black and brittle. Handle with care

Phase 2: Sintering

- Bury pieces in activated coconut carbon
- Ramp Speed Full
- Temp 954C
- Hold 3.5 hours
- Cool in kiln

When the pieces come out of phase two, they should appear bright copper coloured. If they are dark or mottled, they may not be sintered well enough to accommodate enamelling. All pieces should be tumbled for several hours prior to enamelling. Smooth areas to be enamelled can also be further burnished with an agate burnisher.

I recommend a high fast firing at least for the first coat of enamel. Fire at 843C for 1.5 to 2 minutes. The copper should appear bright under the enamel. If it appears dark or reddish, then it has not been fired long enough. Subsequent coats may be fired as per normal enamel firing schedules.

Step away from the pickle! When it comes to enamelling on COPPRclay, pickle is not your friend. It soaks into the porosity of the piece and comes back to ruin the enamels on subsequent firings. To clean the metal between enamel firings, use PennyBrite, hotwater and a toothbrush. That works great and doesn't seem to cause any problems.