

Working with BRONZclay™ and COPPRclay™

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The following instructions are for BRONZclay™ and COPPRclay™. Firing schedules given MIGHT work with Hadar's clay, but after testing both brands, I have found that firing schedules have been shown to, not necessarily, work for both brands. There is still a lot of experimenting being done to find the best firing schedules, but the following firing schedules are the ones I have found to work the best for me. Kilns do differ between brands and styles, and all kilns may not be completely accurate in temperatures. Therefore, you may find it necessary to "tweak" some of the settings for your kiln.

These schedules will give you a starting point, and unless your kiln is way off, should work well.

Being alloys, both copper and bronze clay will oxidize quickly when combined with heat and oxygen. This means they will turn BLACK. Therefore, these clays need to be fired in an oxygen-free environment. A sturdy stainless steel container with activated carbon added will work well to highly reduce the presence of oxygen.

One inch of carbon should be in the bottom of the stainless steel container, pieces should be placed at least 1" apart and away from edge of container, then one inch of carbon should be placed on top. Stainless steel lid should be placed on the container to reduce soot into the kiln, but isn't required. Carbon can be used over and over. As it burns away, more carbon can be added, but one bag will last a very long time.

Container should be placed in the kiln on stilts to allow heat to get underneath container. Do NOT place container on a shelf.

When working with bronze clay alone, this is a simple firing schedule:

Ramp at 250 to 1550F and hold for 3 hrs. (pieces thicker than 1/8" should be fired longer.)

When working with copper clay alone, pieces can be fired at this schedule:

Ramp full speed to 1650F and hold for 3 hrs. (pieces thicker than 1/8" should be fired longer.)

When firing the two clays together (either in a single piece or just firing copper pieces and bronze pieces in the same load) a different schedule needs to be used. If it makes your life simpler, this schedule can be used all the time, even if the load is just one metal. The reason for another schedule is because bronze will not sinter (fully fire) with the copper schedule or vice versa.

SINTER: sintering is the process of firing a metal clay at the proper temperature and time to allow all the binders to burn away and the metal particles to fuse together.

This schedule is in two phases:

Phase 1: Fire in open kiln on shelf (elevated on stilts to allow heat underneath)
Ramp at 500 to 560F and hold for 30 min.

When complete, open door and allow pieces to cool enough to comfortably remove and place in stainless steel container w/activated carbon.

This allows the binders to burn away.

Phase 2: Pieces should be covered in activated carbon (as noted above) inside stainless steel container. Container should be placed on stilts (no shelf involved) to allow heat underneath.

Ramp1 at full speed to 665F, hold for 1 hr.

Ramp2 at full speed to 1500F, hold for 3 hrs. (longer if pieces are thick)

When complete, door can be opened and everything allowed to cool to Comfortably remove pieces.