

Your Guide to

BRONZclay™

Welcome to BRONZclay™!

BRONZclay™ is easily sculpted, molded, carved and formed, and becomes solid bronze when fired. Your imagination and just a few simple tools will allow you to create solid bronze pieces—jewelry to sculptures and everything in between!

Working with BRONZclay™

BRONZclay™ is just that: a clay. Like clay, it's highly workable but it also dries quickly. You'll notice the clay stiffening and cracking when it begins to dry. Some tips to keep in mind:

- Keep BRONZclay™ refrigerated until you're ready to use it and in between sessions.
- Rub a dab of olive oil on your hands before you begin working with the clay.
- While working the clay, refresh it periodically with a small amount of water using a spray bottle or brush.
- Wrap pieces that you are not currently working on in plastic and place to the side.
- Avoid using tools that absorb water.
- When not in use, keep the clay tightly wrapped in plastic and place the wrapped piece in a sealed plastic bag for added protection. Store all unopened packages (as well as opened packages) of BRONZclay™ in a refrigerator when not in use.

Making Slip

Slip will quickly become one of your favorite tools for working with BRONZclay™, and it's easy to make. Simply mix tiny pieces of clay (filings, small dried or wet pieces, etc.) with water (we recommend distilled water for a longer shelf-life) until you reach a yogurt consistency. Keep your slip stored in a sealed container. Note: Slip will last for about one week, so make only enough for your immediate need.

Drying the Clay

Once you've finished your piece, you will need to dry the clay before firing it. Gently place the piece on a warming surface such as a coffee mug warmer; an inexpensive vegetable dehydrator works well, too. Once dry, you'll notice the clay is leather hard, making it very easy to add finishing touches such as filing, drilling, sanding and carving. Once BRONZclay is fired, it's much more difficult to finish, so take advantage of this pre-fired stage to do as much of your detailed finishing work as possible.

Firing

To reduce oxidation, the piece(s) must be surrounded by activated carbon (Rio #703-204 or 703-205) during firing. Firing BRONZclay™ is a two-step process that uses low heat to vaporize the binder, then high heat to sinter the alloy.

- 1) Spread 1" of activated carbon granules on the bottom of a stainless steel firing container (Rio order #703-202).
- 2) Place the piece on top of the layer; if firing two or more pieces, leave at least 1/2" between pieces, more if the pieces are large.
- 3) Pour more activated carbon granules on top of the pieces until the container is filled 1" from the top, making sure there is a 1/2" layer of granules on top of the pieces. Again, if you are firing many pieces in layers, make sure there is at least 1/2" of space between the vertical layers as well.

Note: Do not fire more than 100 grams of clay at once; overloading may cause poor sintering.

- 4) Put the stainless steel lid on the firing container and place it in the kiln on stilts to allow good heat circulation.

Note: Most kilns are cooler in the front near the door, so the front of your firing container will be cooler than the other sides. Compensate for this by placing the pieces closer to the sides and back of the firing container. If you have a top-loading kiln, there's no need to adjust.

Firing Thin Pieces: For pieces that are 6 cards (3mm) thick or less, fire according to the following program:

Ramp at 500°F/hour to 1550°F, and hold for 2 hours. Total firing time (including warm-up) will be between 4 and 5 hours.

Firing Thick Pieces: For pieces that are thicker than 6 cards (3mm), fire according to the following program (this firing schedule will also work for thin pieces):

Ramp at 250°F/hour to 1550°F, and hold for 3 hours. Total firing time (including warm-up) will be about 9 hours.

Finishing

Once fired, the BRONZclay™ piece is a solid piece of metal. As with other metals, it can be sawn, drilled, sanded, patinaed or soldered using traditional jewelry tools and materials. For a brown to black patina we recommend using MIDAS® Brass, Bronze & Copper Oxidizer (#331-043); for a green patina, try MIDAS® Green Patina (#335-120). Keep in mind that many finishing techniques will be easier to perform at the dried, pre-fired stage.

Safety

The binder in BRONZclay™ is non-toxic, and no toxic fumes will be present during firing. Though rare, it is possible for some individuals to experience some sensitivity to BRONZclay™.

We recommend wearing a dust mask while working with the activated carbon. Please see an MSDS for BRONZclay online at riogrande.com.



BRONZclay™ bracelet
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