

Five Star Metal Clay Instructions

SHAPING

Form an object by molding, rolling and sculpting the clay. You can assemble several parts separately by moistening the objects or adding moist clay between them. To make flat objects, place a ball of clay on a flat non-stick surface. Use a clay roller to roll the clay to a desired thickness by placing guides along the side. Use a release agent such as Liberation Spray or olive oil on all surfaces which come in contact with the clay to prevent sticking. The clay can be cut with a cookie cutter, blade or awl. If the clay sticks to your fingers it is a sign of excessive water. Just allow to dry a bit and continue to work it. Conversely, if it cracks while working it is too dry. Just add a drop of water and condition. While working with Five Star Metal Clay, keep excess clay wrapped tightly in plastic to avoid drying.

DRYING

Once the object is formed, place it on a non-stick surface. Slow drying is strongly recommended to reduce the risk of warping and cracks. Heat is to be used sparingly. To check the dryness, heat the piece and place on a mirror. If condensation appears, continue drying. Sanding the edges and refining areas should be completed in the dry state. The piece is very fragile at this stage and should be handled with care.

FIRING

Torch Firing

Copper, Red Bronze and Bronze can be fired with a torch. Torch firing is not recommended for pieces larger than 1" diameter or 4mm thick. Place object on a steel mesh. Using a large nozzle torch, light the piece on fire to burn off the binders in the dried clay. Start by aiming the flame at the edge of the piece. The piece will catch on fire and a line will begin to form where the edge of the burning is occurring. Continue to follow the line of the burning with the tip of your flame until it has reached the opposite edge of your piece. This action allows for a complete burning of the entire piece. Once the burn off is completed, bring the piece up to temperature by observing the color. The proper color to achieve is a bright orange. Hold the bright orange color for 5 to 10 minutes. Quench in water immediately. Oxide will form and pop off while the piece is under water. To remove further oxide use pickle solution. Pink color on bronze can be lightened by using super pickle solution.

Kiln Firing

Phase 1 - Burn off phase

Place your object on a steel mesh. Ramp full to 1000°F/537°C. Hold for 5 minutes. Let cool. The piece should be dark gray in color after the burn off is complete. The piece is very fragile at this stage and should be handled with care.

Phase 2 - Fast Firing Option

Place the piece in a stainless steel firing box with Chromatic Carbon or activated coconut carbon. The piece should be surrounded by at least 1" of carbon all around. Layering is acceptable as long as the 1" of space between the pieces is observed. Do not use a lid. Ramp full to the following temperatures:

Copper 1700 °F / 926 °C
Red Bronze 1600 °F / 871 °C

Bronze 1500 °F / 815 °C

Light Bronze 1400 °F / 760 °C

White Bronze 1300 °F / 704 °C

Hold these temperatures for 30 minutes.

Quenching is recommended for this method to reduce oxidation.

Phase 2 - Standard Firing Option

Place the piece in a stainless steel firing box with Chromatic Carbon or activated coconut carbon. The piece should be surrounded by at least 1" of carbon all around. Layering is acceptable as long as the 1" of space between the pieces is observed. Use a lid on the box.

Ramp full to the following temperatures:

Copper 1700 °F / 926 °C

Red Bronze 1600 °F / 871 °C

Bronze 1500 °F / 815 °C

Light Bronze 1400 °F / 760 °C

White Bronze 1300 °F / 704 °C

Hold these temperatures for 1 hour.

Allow to cool.

The shrinkage rate is approximately 12-15% on all metals.

POLISHING

Once firing is complete, the surface may oxidize during cooling. Use a pickle solution to remove excessive oxide. The surface of the piece will have a matte finish. Use a wire brush, sandpaper or sanding sponges, rotary tools or other polishing equipment until the desired finish is achieved.

SAFETY

The binder in Five Star Metal Clay 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 Five Star Metal Clay. We recommend wearing a dust mask while working with any powdered substances.

Use of kilns and torches should be done with caution. Kilns should be positioned on a stable surface, away from combustible materials, with a foot of open space on all sides. Torches should only be used in designated areas with suitable fire retardant surfaces. When working around heat, wear appropriate clothing and avoid clothes made with synthetic fabrics. Eye protection should be worn at all times while working with heat.

Clay Revolution

www.clayrevolution.com

info@clayrevolution.com

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