



[Important check list for firing]

***For complete safety information and full instructions, read the original instruction sheet inside your Art Clay Bronze package.**

Art Clay Bronze consists of 90% of alloy powder (90% Copper and 10% Tin), and the remaining 10% is organic binder and water. It requires more specific and consistent temperature control for firing compared to Art Clay Silver Clay.



Art Clay Bronze needs to be fired

✓ In an oxygen-reducing atmosphere in an electric kiln.

Make sure to fire in a reducing atmosphere, with pieces buried in 2cm of activated carbon in a stainless steel firing pan. When possible, the pan should be on posts, and not directly on the kiln floor. Remove carbon ash and replace with fresh carbon for each firing. Enough oxygen exists to burn off the binder even while your piece is in carbon with the lid on the pan. It is recommended to use a lid on as it will contribute to a more beautiful finished color after firing.

✓ In an adequate temperature

The firing schedule for Art Clay Bronze is 820°C for 2 hours (in carbon). However, remember each kiln is different (such as size of firing chamber, muffle vs. brick chamber walls, number of elements, front vs. top-loading, etc), as well as the environments around the kiln (temperatures, humidity, altitude, etc). The digitally indicated temperature is not exactly same in every spot in the entire kiln chamber, so it is possible that different places in the chamber reach different temperatures. The most important thing is to **place the firing box farthest from the kiln door** because the temperature in the firing chamber near the kiln door can be much lower than the programmed temperature.

✓ Always do a TEST FIRE first

Before making your unique projects, make a few small pieces (3cm x 1cm x 1mm) to test fire as a means of finding exactly how your kiln handles the bronze firing. Spread the pieces around in the firing pan and place the pan away from the kiln door. If your test pieces break, the firing schedule needs to be adjusted. If pieces break before bending 90°, increase the hold temperature by 10°C (up to max. 860°C).

[Basic firing steps]



1. PREPARATION

If you fire a ring, place a circle of firing blanket along the inside band of the ring. This will avoid marks caused by carbon when the clay shrinks during firing.



2. PREPARATION

Spread more than 1 cm of activated carbon on the bottom of a firing pan.



3. PREPARATION

Place the piece on top of the carbon layer (if you fire multiple pieces together, always have at least 2cm carbon between pieces). Bury the pieces completely under 2cm carbon.



4. **RAMP UP**

Place the box farthest from the kiln door, and ramp up from room temperature to 820°C, taking at least 20 minutes to do so.

5. **HOLD**

Hold the kiln at 820°C for 2 hours.

6. **COOL DOWN**

Allow the bronze pieces to cool to room temperature before removing from the carbon.

7. **FINISH**

After firing, the piece appears matte brown. A beautiful bronze color is revealed after polishing.



Beautiful GOLD like color

Art Clay Bronze has been developed after testing many different metal formulas to ensure the best golden color.



Extremely high strength as alloy

Bronze is an alloy formed with mixture of copper and tin, therefore it gives extremely high strength in both surface contact and bending pressure. Bending strength* of fired Art Clay Bronze is approx. 3 times harder than Art Clay Silver, and surface strength is approx. 2 times harder than Art Clay Silver 950.

*Bending strength is evaluated by force level in bending fired strip to 90 degrees. Higher force level means metal is harder to bend. This does not necessarily mean that Art Clay Bronze has high viscosity or density for reshaping.

FAQ for Art Clay Bronze

Q.) Can I use a 2-stage firing schedule for Art Clay Bronze?

A.) You can use Art Clay Bronze in 2-stage firing as an option especially if you prefer to burn off binders of a thick piece, such as over 15mm thickness. Please note that it will give more strength, but also more shrinkage after firing.

<Phase 1> Open shelf firing

Place dried pieces on a fiber board, and put them in a kiln. Fire from room temperature to 450°C, then remove immediately. Let pieces cool down to room temperature. Spread at least 1 cm of activated carbon on the bottom of a firing pan. Place pieces on the carbon layer, then cover with at least 2cm more carbon. Place the pan into a kiln.

<Phase 2> Carbon firing

Ramp from room temperature to 820°C, holding 2 hours. Pieces must cool to room temperature in the carbon.

Q.) How can I repair broken pieces after drying or firing?

A.) Add a small amount of water to Art Clay Bronze to make a thick paste to fill or mend the broken part. Make sure to use carbon firing after repairing.

Q.) Can I fire together with synthetic stones?

A.) Stones compatible with Art Clay Silver should be fine with the firing schedule of Art Clay Bronze. Test-firing stones is recommended. Compared to the open-shelf firing of Art Clay Copper, carbon firing Art Clay Bronze has a minimal chance of oxidation, therefore discoloration of synthetic stones with bronze rarely occurs.

Q.) Can I fire Art Clay Bronze together with silver findings (such as screw eye, bail back, or bezel)?

A.) Avoid attaching silver findings directly and firing with Art Clay Bronze as it will cause discoloration or alloy. (Oxidation, carbonization of bronze, or alloy between metals.)

Q.) Can I fire several pieces of Art Clay Bronze together in the same firing pan?

A.) You can fire several pieces at once as long as all pieces are buried completely in carbon. Allow 2cm carbon between pieces. Pieces touching within the carbon may result in underfiring.

Q.) Should I use a lid when firing Art Clay Bronze?

A.) Enough oxygen exists to burn off the binder even your piece is in carbon with a lid on the pan. It is recommended to have a lid on as it will contribute to a more beautiful finished color after firing.

Q.) Can I pickle fired Art Clay Bronze to remove oxidation? Does Art Clay Bronze discolor over time?

A.) Yes, you can pickle fired Art Clay Bronze to remove oxidation. Carbon firing will create only a very thin oxide layer on Art Clay Bronze, and you can brush/polish it off to remove it quite easily. Yes, Art Clay Bronze will discolor by oxidation as time goes by just like copper. Patina will be created on the surface exposed to high moisture or sweat. Polishing or pickling will remove oxidation or patina.

Q. How does Art Clay Bronze compare with Art Clay Silver in terms of drying time, strength, or flexibility when dry?

A.) There is no big difference in drying time compared to any other Art Clay series. The strength and flexibility of Art Clay Bronze after drying is also almost the same as with other Art Clay series.

Q.) For those with metal allergies, is there any problem with wearing and/or working with the clay?

A.) In some rare cases, there may be a possibility of reaction due to the metal. If you have allergy to copper or tin, check with your Doctor if you can work with rubber gloves or should not work with it.

Q.) Is it possible to mix Art Clay Bronze with other Art Clay series?

A.) When combined with other ACS series products, the clay characteristics will change. Drying and firing conditions will also vary. Therefore, it is not recommended to mix clay types as there is possibility of damage during firing.

Q.) What is the best way to store leftover Art Clay Bronze?

A.) If Art Clay Bronze contacts in high humidity, oxidation will occur. Do not add moisture to any storage case. It is recommended that you keep Art Clay Bronze tightly wrapped with plastic wrap in an airtight container.



Q.) Can I put Art Clay Bronze in a syringe to use?

A.) Yes, you can use it as you would with regular Art Clay Silver. In that case, please use AIDA's recommended empty syringe (Original item # : A-0031). Art Clay Bronze easily oxidizes in especially wet conditions. Make only as much syringe clay as you need, simply by adding water evenly to the bronze clay to a consistency good for syringe extruding.

Q.) What shrinkage should I consider for making rings with Art Clay Bronze?

A.) The metal portion of Art Clay Bronze is 90% Copper and 10% Tin, and the organic portion is binder and water. It shrinks a little more than the regular Art Clay Silver series. For making rings, please check the shrinkage guide shown. Shrinkage after firing: Approx. 10-13%

*Note: Chart indicate Japanese sizing.

Ring size shrinkage		
		
When the band is 3mm in thickness, make the ring 3 to 4 sizes larger than desired.	When the band is flat (1.5mm in thickness and 10mm wide), make the ring 4 to 5 sizes larger than desired.	When the band is greater in thickness and width than the rings mentioned at left, make the ring 5 to 6 sizes larger than desired.