



Firing Instructions: Base Metals

Copper, Bronze & Brass

Ultimate Premium and Origami Metal Clays

AMC CLAYS ARE OWNED AND MADE IN AUSTRALIA

AMC's Base Metal and Origami Base Metals (Bronze, Copper & Brass) arrives to you in lump clay ready to use right out of the package – the exception to this is Ironbark & Pink Brass which arrive to you in powder form and will require mixing. AMC's Base Metal clays have a flexibility to them, but they can also be special ordered as a no-flex standard. They have extended working time and easy firing instructions.

SUITABILITY

Base Metals – Flexible and suitable for Sculpting, forming, shaping, cutting machines, craft punches, textures, moulds, etc.

Origami Base Metals – As the name implies, the origami clays are best suited for Origami/gentle folding. For folding, we recommend 1 card thick. They can also be used for sculpting, forming, shaping, syringing/extruding, craft punches, embossing folders, textures, moulds, and Cutting on Cutting Machines. I suggest 2-3 cards thick. Emboss/etch on the cutting machines is more challenging.

SAFETY FIRST

As with any product, some individuals may incur reactions to the product. If any form of skin rash or itchiness occurs, cease using immediately and wash your hands. If symptoms persist, contact a healthcare professional. P2 or N95 masks, gloves & safety glasses are recommended when work with powder – mixing, sanding or polishing. Wash hands after use, do not ingest, keep out of reach of children and pets. Take precautions to avoid burns when handling hot tools and equipment.

CLAY & SKILL LEVELS

To describe the level of difficulty for working with Aussie Metal Clays, it's essential to consider factors such as skill level, experience with metal clay, and the specific techniques involved. Here's a breakdown to describe the difficulty/skill level for each clay.

1. BEGINNER FRIENDLY

Clays: AMCs .999 Fine Silver Premium (Clay) (Kiln or Torch Fire)
AMCs .960 SS2 Silver (Clay) (Kiln Fire)

- Suitable for those new to metal clay or crafting in general.
- Basic techniques are easy to grasp.
- Minimal tools and equipment required.
- Projects may focus on simple shapes or surface textures.

2. INTERMEDIATE

Clays: AMCs .960 Argentium Silver (Powder) (Kiln Fire)
AMCs Desert Sun (Clay) (Kiln Fire)
AMCs Ruby Bronze (Clay) (Kiln Fire)
AMCs Gold Bronze (Clay) (Kiln Fire)
AMCs Copper (Clay) (Kiln Fire)
AMCs Silver Copper (Clay) (Kiln Fire)
AMCs Snow White Copper (Clay) (Kiln Fire)

- Assumes some familiarity with metal clay or related crafts.
- Requires a moderate level of skill and patience.



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- Involves more intricate designs or techniques, such as layering, carving, or stone setting.
- May necessitate a wider range of tools and materials.

3. ADVANCED

Clays: AMCs Ironbark (Powder) (Kiln Fire)
AMCs Antarctic Sand (Clay) (Kiln Fire)
AMCs Silver Bronze (Clay) (Kiln Fire)
AMCs Pink Brass (Powder) (Kiln Fire)
AMCs ORIGAMI .999 Fine Silver (Clay) (Kiln or Torch Fire)
AMCs ORIGAMI Desert Sun (Clay) (Kiln Fire)
AMCs ORIGAMI Ruby Bronze (Clay) (Kiln Fire)
AMCs ORIGAMI Gold Bronze (Clay) (Kiln Fire)
AMCs ORIGAMI Copper (Clay) (Kiln Fire)
AMCs ORIGAMI Silver Copper (Clay) (Kiln Fire)

- Designed for experienced metal clay artists or artisans.
- Demands a high level of precision and technical proficiency.
- Involves complex processes like hollow forms, advanced stone setting, or sculpting.
- Requires specialized tools and equipment, as well as attention to detail.

4. EXPERT

- Reserved for master metal clay artists or professionals.
- Challenges even the most skilled craftsmen.
- Pushes the boundaries of traditional metal clay techniques.
- Often involves experimentation and innovation in design and application.

RESOURCES *

- **Tutorials and workshops** are available on the Aussie Metal Clay website [CLASSES & TUTORIALS - Aussie Metal Clay](#)
- **One to One Tuitions** can be arranged via any of our Aussie Metal Clay Teachers [AMC Teachers & Classes - Aussie Metal Clay](#)
- Please also join our Aussie Metal Clay Support Group on Facebook [AMC Support Group ~ Facebook](#) to assist you in developing your skills and enabling you to tackle more challenging projects as you increase your skill level.

GETTING STARTED

AMC Base Metal & AMC Origami Base Metal clays will arrive in either lump or powder form in 50g packs (2 x 50g packs in the 100g). Upon opening your packet, be sure to massage your clay to ensure the moisture is evenly distributed after shipping. Any opened, unused clay, wrap tightly in plastic wrap and store in an airtight container to maintain hydration.

TEST STRIPS

AMC base metal clays are separated into 2 groups:

1. Can bend post firing: AMCs Desert Sun; AMCs Ruby Bronze; AMCs Gold Bronze; AMCs Copper & AMCs Silver Copper.

2. Don't Bend post firing: AMCs Ironbark; AMCs Antarctic Sand; AMCs Silver Bronze; AMCs Snow White



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Copper & AMCs Pink Brass.

Regardless of bendability post firing you will still need to make Test Strips for each type of clay, as each clay has a different sinter temperature. Make test strips approximately 0.3cm x 2cm and 3 cards thick to find the correct kiln temperature for your kiln, as all kilns are different.

TO CHECK FOR SINTER

- 1. Can bend** - bend the strip at the end with round nose pliers and if not completely sintered – shown by a crack in the bend, place back into the kiln and re-fire stage 2 at a raised temperature of 2-5 degrees. Repeat until you get a perfect Sinter. A perfect sinter will show a bend that has no cracks or breaks to it.
 - 2. Don't Bend** - Gently drop your piece on a tile or piece of glass. You will hear that same metallic sound that you get from a sintered piece of the other bendable bronzes and coppers. If you do not get the right sound the test strip is not completely sintered, place back into the kiln and re-fire stage 2 at a raised temperature of 2-5 degrees. Repeat until you get a perfect Sinter.
- ***NOTE:** The following clays: Ironbark, Antarctic Sand & Silver Bronze, Snow White Copper & Pink Brass should be a minimum of 5 cards thick to give a stability to your design and should be used for charms, pendants and small items only.

CREATING

Be sure to use Aussie Lube to **LIGHTLY** lubricate your work surface, roller as well as any textures or moulds you may be using (lubricate all items or surfaces that your clay will come in contact with, including tools). A little lubrication goes a long way. If you use too much, you have the possibly of compromising your clay.

REFINING

The most important piece of advice that AMC can give you regarding refining is to do as much finish work (sanding, smoothing, etc.), before firing. Your dried pieces will still be fairly flexible after drying, making your design less fragile causing less of a potential breakage. When sanding, be sure to support your piece, either with your hands/fingers or a rubber block, to avoid applying unnecessary stress/strain on your design. To smooth out your designs you can use **Kim'sClayStay™** by placing a small amount of **Kim'sClayStay™** on the tip of your finger and gently rub the surface of your design until it becomes smooth.

JOINING PIECES

Using **Kim'sClayStay™**, you can easily join pieces together. The pieces you are joining will need to be flush when connecting. If your design has any texture that creates raised areas in the part you want to join add a small amount of fresh clay to get a flush connection.

- 1. Joining Unfired to Unfired** – add your **Kim'sClayStay™** to both pieces you are joining, gently push your pieces together. Hold pieces together for a minute or so which gives Kim's ClayStay™ time to adhere.
- 2. Unfired to Fired & Fired to Fired** – TIP: leave the kiln patina on the fired design which will allow **Kim'sClayStay™** go gain a better grip to join to. You will then add a small bit of fresh clay and follow the same steps as unfired to unfired.

Please check out the Video where Kim shows you the process of how she joins items with **Kim'sClayStay™** - [ClayStay video](#)

REHYDRATING

Base Metals - One of the amazing things about metal clay is the ability to reuse all of unfired scraps and "sanding" dust. Break your dried clay in to small pieces or use a coffee grinder. For best results, use **Kim'sClaySpray™** to rehydrate. You can use distilled/demineralized water, however, you will eventually deplete your clay of its binders and your clay will not perform the way it should.

Origami Base Metals – Due to the sensitivity of the ORIGAMI Clays you will lose a little bit of the flexibility on



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each rehydration. Break your dried clay in to small pieces or use a coffee grinder. Use **Kim's ClaySpray™** sparingly to rehydrate back to a clay consistency.

Note: If your clay seems too wet, let it sit out for a bit and then massage clay. If your clay seems dry or cracks while rolling or working with, add a spritz of **Kim's ClaySpray™** to moisten.

DRYING

Base Metals: - Once your design has been completed in its "wet" stage, it's time for drying. AMC recommends placing your design in a dehydrator at a maximum temperature of 70c/158f. Although you can use a mug warmer/hot plate, we do not recommend this method. If you have no other choice than to use a mug warmer or hot plate, do not place design directly on the surface. Place your design/s, either on a wire rack or a small ceramic tile placed on top of the warmer and flip your design every so often to avoid warping. Do the Mirror Test to ensure your design is completely dry prior to firing and fire once mirror test completed.

Origami Base Metals: - To obtain the maximum flexibility from your Origami clay, you cannot completely dry the clay. Allow your clay to become "skin dry" by air drying. "Skin dry" means you are drying the outside of the clay while leaving the inside supple. Once skin dry, pick up your clay and gently wake it up by lightly rolling both sides and slowly sliding through your fingers. You will notice more flexibility as you proceed with this process. Complete your folding/design. Once you are completely happy with your design AMC recommends placing your design in a dehydrator at a maximum temperature of 70c/158f. Although you can use a mug warmer/hot plate, we do not recommend this method. If you have no other choice than to use a mug warmer or hot plate, do not place design directly on the surface. Place your design, either on a wire rack or a small ceramic tile, placed on top of the warmer and rotate your design every so often to avoid warping.

MIRROR TEST TO ENSURE YOUR DESIGNS ARE MOISTURE-FREE BEFORE FIRING

While your design is still warm be sure to do the Mirror Test. Place your design on a mirror, if condensation appears, it is not dry. Re-dry & retest until you are satisfied that your design is moisture-free. We recommend firing your design immediately after your successful mirror test.

Important note: Clay will reabsorb moisture from the atmosphere, so if your design has been sitting in the atmosphere for any time it is extremely important to warm your design in a dehydrator and redo the Mirror test to ensure the design is moisture free then fire upon completion of a successful Mirror Test

FIRING

All AMC Base Metal Clays require a **2-stage firing** in Aussie Premium Activated Coconut Carbon specifically formulated for Aussie Metal Clay. Stage 1 is to burn out the binders to allow proper sintering at stage 2. As all kilns are different, please refer to the test strip section of these instructions.

KILN FIRING

Reminder: Be sure to do the Mirror dry test – warm your design and place on a mirror. If condensation appears, it is not dry. Last but not least, it is important to note that your clay designs, even when dried, can still accumulate moisture from the air. We recommend firing your design immediately after your successful Mirror dry test.

BURN OFF: STAGE 1

Place your design on a wire rack and fire at ramp speed 4 (830C/1526F) to reach 450C/842F. Hold for 30 minutes, up to 3 cards thick. Longer if thicker and/or larger pieces (4 cards – 40 minutes, 5 cards 50 minutes, etc.). Once burn off is complete, let your design to cool to below 200C/392F, or completely cooled before moving on to Sinter/stage 2.



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SINTERING: STAGE 2

Once your design is cool enough to handle after phase 1 (below 200C/392F), gently (Note: after burn off, your design is extremely fragile). Transfer your design on to a minimum of 25mm or 1 inch of activated coconut carbon, into a kiln safe vessel (such as a stainless steel firing container). Cover with an additional 32mm or 1 1/4 inch of activated coconut carbon from the highest point in your design. You can fire with or without a lid. Fire at ramp speed 4 (830C/1526F) or full ramp (995C/1823F) to reach firing temperature based on the chart below. These are only suggested temperatures and will be determined by how your kiln fires your test strip.

SUGGESTED FIRING TEMPERATURE RANGES for firing in Aussie Premium Activated Coconut Carbon

BRONZES

Desert Sun	900C/1652F to 940C/1724F	2+Hours
Ruby	810C/1490F to 850C/1562F	2+Hours
Gold Bronze	775C/1427F to 830C/1526F	2+Hours
Ironbark	775C/1427F to 820C/1508F	2+Hours
Antarctic Sand	773C/1423F to 818C/1504F	2+Hours
Silver Bronze	770C/1418F to 815C/1499F	2+Hours

COPPERS

Copper	970C/1778F to 990C/1814F	2+Hours
Silver Copper	970C/1778F to 990C/1814F	2+Hours
Snow White	970C/1778F to 990C/1814F	2+Hours

BRASS

Pink Brass	970C/1778F to 990C/1814F	2+Hours
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**Rule of thumb – once you have your perfect sinter temperature, add approximately 5 to 10 minutes per 1 additional card thickness (depending on the size and density).

FINISHING AND POLISHING

Tumblers – A Magnetic tumbler will clean & burnish your design. Rotary tumbler will burnish your design. You can clean your design, straight out of the kiln with a brass brush, soap and water. You can also put your design straight in to a magnetic or rotary tumbler. To bring your design up to a mirror finish, you can use the same process and then use a rotary tool with radial discs and then polishing wheels. [Magnetic Tumbler Video](#)

HALLMARKING

All countries have different rules for hallmarking your designs. Be sure to look into what your specifications are for your country.

Have More Questions? Please contact us.

Aussie Metal Clay Australia - <https://www.aussiemetalclay.com/home/>

Please join our Facebook Groups – Join our Q/A's on the AMC Facebook groups ~ AMC Support <https://www.facebook.com/AussieMetalClays>

Read our FAQ's on the website – <https://www.aussiemetalclay.com/frequentlyasked-questions/>

YouTube - <https://www.youtube.com/@AussieMetalClays>

Instagram – <https://www.instagram.com/aussiemetalclay/>



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