



COOL TOOLS

Instructions for Using Clay-Bond™

Clay-Bond™ is a silver-containing product used for joining bronze, copper, and brass articles, whether they have been formed from metal clay or stamped sheet. Clay-Bond™ is a powder that is mixed with water into a paste and then applied to the surfaces to be joined. After firing it forms a strong metallic joint suitable for all jewelry-related applications.

Advantages of Clay-Bond™ over solder paste include:

- Firing is done in activated carbon, so an open flame is not involved.
- It contains a binder that dries and then holds the two parts.



Toolbox

Clay-Bond™	Flat paint brush with short, stiff bristles	Water (distilled water is not necessary)	Small glass, plastic, or ceramic dish for mixing
Abrasive paper or Scotchbrite pad	Firing tin with activated carbon	Tongs (to handle the firing tin when hot)	Polishing supplies (to provide final finish)

Steps for Using Clay-Bond™ to Join Two Flat Surfaces

Ensure that the two surfaces to be joined are flat and mate well at the region to be joined.

1. Clean the mating surfaces by abrasion so that bright metal shows.
2. Mix a small amount of Clay-Bond™ with water on a glass, plastic or porcelain surface with a brush that has short stiff bristles. (Save the unused paste – it can be remixed with water and used again.)
3. Apply one coat to each surface. This first coat should be thick enough to be opaque - not real thin, but not globbed on either.
4. Dry the articles for 30 minutes in warm air, such as with a hair dryer on in a dehydrator set at about 140F.
5. Apply a second coat to each surface. This layer should be a bit thicker than the first layer. Apply this coating quickly enough that the first layer does not soften and come off. If it does, reapply both coats.
6. Press the pieces together while the second layer is still moist. Press firmly but do not press too hard or too much paste will be squeezed out of the joint.
7. Remove all visible slip from around the edges of the joint with a clean, dry brush with short stiff bristles, or with a toothpick. This step is necessary so Clay-Bond is not visible around the edges of the joint after firing.
8. Dry the joined pieces in warm air as in step #4.
9. To ensure complete drying, dry the pieces on a coffee warmer for 30 minutes. Insufficient drying will result in a weak joint!



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- 10.** Carefully (to avoid inadvertently separating the pieces) place the joined pieces in the firing container. The container should be about one-half full of activated carbon before the pieces are inserted, then filled to the top with activated carbon after the pieces are inserted, then covered with the lid.
- 11.** Fire the joined articles at 662F for 15 minutes. Begin timing when the kiln has reached 554F. (Important: see paragraph below on Effect of Kiln Type.)
- 12.** Remove the firing container from the kiln and allow it to cool.
- 13.** Remove the pieces and then apply desired finish.

Steps for Using Clay-Bond™ to Join Exposed Joints Such as in Jump Rings

The steps are the same as above, except:

- 1.** Small joints such as on jump rings require only 15 minutes of drying in hot air after each coat. Use two coats to ensure good coverage.
- 2.** Fire at 842F for 10 minutes in the firing tin.

Pre-Fired Joint Strength

Clay-Bond™ contains water-soluble binder unlike in conventional solder pastes. This binder allows two pieces to be cemented together before firing, but the pre-fired joint is not strong. Therefore, the joined pieces should be handled carefully before firing so they do not come apart. If they come apart, they should be rejoined with wet paste and thoroughly dried as described above before they are fired.

Post-Fired Joint Strength

This product will provide joint strength sufficient for all jewelry applications after proper firing. The strength is comparable to that obtained from silver solder.

Effect of Kiln Type

Different kiln models will cause Clay-Bond™ to fire differently. Therefore, the firing temperature and time in Step 11 will work for some kilns but not for others. In particular, kilns with the heating elements completely enclosed in the walls may require extending the firing time and/or temperature. Also, large pieces of jewelry will require longer firing times to reach the desired temperature inside the firing container. For these reasons it is highly recommended that experiments be done with test pieces to determine the optimum firing time and temperature for your particular kiln.

Safety Precautions

Clay-Bond™ contains fine silver powder and a chemical fluxing agent that can irritate the eyes. Take precautions to avoid getting it into the eyes. Wash your hands after use, and do not touch your eyes while handling Clay-Bond™. If it does get into the eyes, flush them thoroughly with water for at least 15 minutes and contact a physician for further treatment. Although Clay-Bond™ is not highly toxic, avoid ingesting it. If ingested, drink a glass of milk and contact a physician immediately. Work safely!