Technical Update

Aura 22

This Technical Update is provided by the PMC Guild to supplement the instruction sheet currently packaged with Aura 22, a patented product manufactured by Mitsubishi Materials Corporation of Japan.

New Method for Fusing Aura 22 to PMC

Current research shows excellent results when using the process associated with the ancient Korean technique known as keum-boo. The following pages provide a summary of this technique as it applies to PMC. For more detailed information and more photos, see *Keum-Boo on Silver,* by Celie Fago (www.celiefago.com).

Preparation of PMC Objects

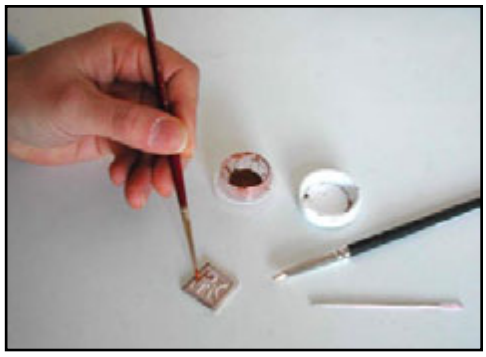
Aura 22 works equally well on all versions of original PMC. In all cases, fire the material first, using any of the recommended firing schedules. Best results are found when the Aura 22 layer is applied on the untreated PMC surface. The slightly matte surface provides a tooth for the paint to adhere. By contrast, working on a burnished surface allows the paint to slide and pull a bit, making crisp details a little more challenging.

Heat-Cleaning

If the work has been tumbled, patinaed, or if it has been several weeks since it was fired (or if you are for any reason concerned that the surface of the object might be contaminated), put the work in a kiln and heat it for a few minutes. This process does not need to be specific—if you are doing any sort of PMC firing, add these pieces to the kiln. If you are firing just for this purpose, simply put the work in a kiln and bring it up to over 1000˚F (540˚C). You can also heat-clean with a torch: heat to dull red and allow the work to air cool.

Applying the Aura 22

Original instructions made a point of applying several layers of Aura 22, allowing each layer to dry completely between coats. This advice is not wrong, and there is no problem with allowing a day between applications, but we find that because heat comes up through the PMC object during the keum-boo process, this drying phase is less critical.



Apply the gold liquid with a good paintbrush, a rubber-tipped color shaper, a large needle, or a toothpick, depending on the line quality you are seeking. The thicker the gold, the richer the color. Two layers are typical, and we recommend two thin layers rather than a single, thicker one.

Tools

This process uses a small electric hotplate to bring the silver and gold up to fusing temperature. Hotplates are sold at hardware, discount, and grocery stores. The one in the photo has two burners, but a single burner unit will be fine. Cost should be under $20. If you cannot find one locally, you can shop online, for instance, at www.target.com.

Some hotplates (like the one shown), have a smooth burner and are ready to use as is. Others have a grill that makes it difficult to position the work. To compensate for this, set a piece of copper or brass over the burner.

Though not required, you might also want to have a woodstove thermometer, like the one shown here. These relatively inexpensive devices will provide a quick visual reference of the heat.

Other tools are a pair of gloves (to protect your hands from the heat), a steel or glass burnisher, a couple of toothpicks, and a holding stick (popsicle sticks and chopsticks work well).

The Process

Put the work onto the hotplate and turn it up to High. Within a few minutes, the work will start to smoke—this is the Aura 22 binder being driven off. No ventilation is necessary for this harmless, almost odorless vapor. To test the heat of the PMC object, touch a toothpick to it. When the wood chars, the metal is hot enough that the fusing process has begun. IMPORTANT! At this point, secure the object with one hand as you lightly press (burnish) the Aura 22 down against the silver. The goal of this step is to press out microscopic gaps that exist between the silver base and the gold layer. When the two pure metals are in perfect contact, bonding is instant.

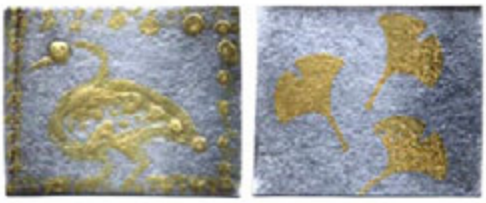
Generally, start with a light stroke, then rotate the piece and follow with firmer pressure using strokes that run in a different direction from the first. You will notice that the burnisher leaves marks; these will be removed by polishing after the layers are bonded.

If the color is weak, or if you have changed your idea for the piece and want to cover a larger area, you can paint on additional gold and repeat the process. It is also possible to combine traditional keum-boo and Aura 22 on a single piece.

Finishing

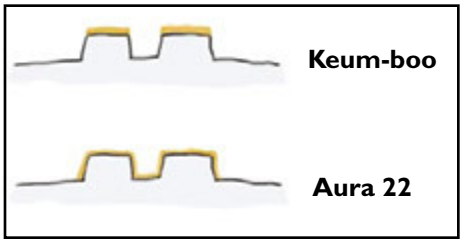
When the gold has been fused to the PMC object, allow the work to cool, then polish it by tumbling, hand burnishing, or scratchbrushing with a soft brass brush and water. To increase the contrast between the silver and gold, use liver of sulfur or Silver Black to darken the silver.

Comparing Aura 22 to Keum-boo



In the end result, these two techniques are almost identical, so it's worth asking why you want to know both. Keum-boo, seen on the right panel here, starts with shapes cut from gold sheet. This means it is ideal for forms that have crisp edges or a geometric shape. Commercial cutting tools can be used on the gold foil, which opens up a wide range of possibilities. Aura 22, on the other hand, is preferred for cases where it would be difficult to cut small pieces, illustrated in the sample on the left above. Imagine a gold signature, and you can see why a brushable media will be easier to use.

Another difference is that Aura 22 works better on high relief objects. The gold foil of keum-boo is delicate, and it will tear if it is pressed into a groove. Because it goes on as a liquid, Aura 22 flows into such crevices. In cases like this, where burnishing is difficult, raise the hotplate temperature to 900˚F (480˚C) and allow the work to sit at this heat for a half hour.



Notes

Thanks for all the people who have contributed their creative ideas to using Aura 22, including Celie Fago, Abby Johnston, Chris Darway, Jeanette Landenwitch, and the many contributors to the Yahoo newsgroup.

Are we done? I don't think so! Every week, new challenges appear, each one a fresh opportunity for creative problem solving. Please send your personal discoveries to tech@PMCguild.com, and thanks in advance for sharing.