

Materials List

Kiln & Tongs:
by ClayPuzzling.com
Paragon Home Artist Kiln
Raku Tongs
Digital Pyrometer
Raku Gloves



Raku Bisque: by ClayPuzzling.com
Variety of Shapes Available

Colors: by Mayco or Duncan
Cover Coats or 3-Coat Underglazes

Banding Wheel:
by ClayPuzzling.com
BW25H High Banding Wheel

Brushes & Tools: by Royal & Langnickel Brush
R2845-6 Aqualon Glaze Fan
R2845-8 Aqualon Glaze Fan
L6065-3/8 Nocturna Dagger

Miscellaneous:
Horse Hair
Floor Wax

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Horsehair firing techniques have been around for ages. It's difficult to trace back to where and when it began, but many believe it was a Native American method. Others will argue it was a mistake someone stumbled upon. Perhaps it was discovered as a variation of Raku when hair fell against a hot piece and the artist saw the cool pattern it formed? Maybe a horse wagged its tail a little too close to hot items as the artist removed them from the kiln? Regardless of how or when it began, it's an intriguing technique which has evolved into many variations over the centuries.

The most common horsehair method is done over a white background. What may appear to be a matte glaze is often a blend of products to create a Terra Sigillata coating. Generally, it's a mixture of clay, water and sodium silicate. This solution is applied to the outside of clay or greenware shapes and then polished or burnished. Polishing or burnishing can be accomplished in several different ways. Some artists use the backside of a spoon, metal rod or stones where others use polishing cloths or chamois. Occasionally, baby oil or similar products are used in conjunction with the polishing process.

Once the greenware or clay item is covered with Terra

Sigillata and polished, it's loaded into the kiln and fired. The items are removed from the kiln using tongs while they are still hot, and horse hair is held up along the sides and burns on the surface. Once cooled and the ash is brushed away, carbon deposits remain on the ceramic surface. Wax is usually applied to protect the somewhat porous surface from moisture or contaminants from handling.

Please understand many variations of horsehair firing exist and every artist has tips and tricks that work for them. So don't be alarmed if this method differs from others you've read about. Take bits and pieces and develop your own style and look. The actual process of making true Terra Sigillata is complicated and takes time I wanted to combine more colors and banding techniques into my horsehair firing. So this is my simplified, low-fire technique.

Creation Process

Begin with low-fire earthenware clay shapes. These can be cast with regular casting slip, they can be built by hand or clay puzzled using almost any low-fire clay body. Smooth any imperfections or seams on the ware. If the items selected do not require interior glaze, you can do the entire technique in one firing. If you plan to glaze any part, it's best to fire the item to cone 06 first. Yes, that's 06, not 04. Do a little cooler firing so the ware can withstand the shock of being removed from the kiln when it's hot. Also note, horsehair items are mainly for decorative purposes and are not food safe. Because the items are removed from the kiln while still hot, there's a chance crazing (small cracks in the glaze) could occur, so they may not hold water.

Create an imitation Terra Sigillata coating. I used underglaze colors (the three coat kind like Cover Coats by Duncan, Velvets by Amaco or UG colors by Mayco) and mixed two ounces of color with one ounce of water. Add a teaspoon of sodium silicate for every three ounces of mixture. Mix well. Use a very soft fan glaze brush (like the Royal Aqualon R2845 Ultimate Glaze Fan) to apply four to five coats of Terra Sigillata over the surface. Try blending colors wet into wet with the use of a banding wheel to get a gradual fade from one color to another. The color is thinned with water to make the application process

easier and smoother. If the color is too thick, it can have ridges and bumps. This mixture will go on ultra smooth! Add any finer lines of color with the use of one-coat underglazes.



Allow the shape to dry until the shiny look is gone, but is not completely dry. At this point the polishing begins. I prefer to use a chamois (available from Royal Brush) by rubbing it in a small, circular motion repeatedly over the surface. You'll begin to see a sheen and polished look. Don't rub too hard that you remove the color. If the color is too damp, you'll get scratch marks. Allow more drying time if you notice this happening.



Once polished, the objects are ready for firing. Place them in the kiln, right on the shelf. Terra Sigillata does not require stiling. Electric or gas kilns can be used. Just make sure the kiln is within a short distance of an exterior door so the burning of the hair can be done outdoors. Trust me; you don't want the burnt hair smell in your home! Fire to cone 06 (slightly cooler than you normally fire greenware) and allow to cool to between 800 and 900 degrees before removing from the kiln with the use of metal tongs (normally used for Raku methods) and place



the object on a flame-resistant surface. Immediately touch the horse hair to the ceramic surface and watch it curl up and burn. Work quickly, as items that get too cool will not burn the hair. The hair needs to be completed within a couple of minutes. Allow the items to cool.



When the shapes have cooled, use a small duster brush to remove the hair ash. It should come off with ease and you do not need to scrub the surface. What remains (and is permanent) is a carbon deposit where the hair came into contact with the surface. Apply a couple coats of floor wax to the surface for additional protection.

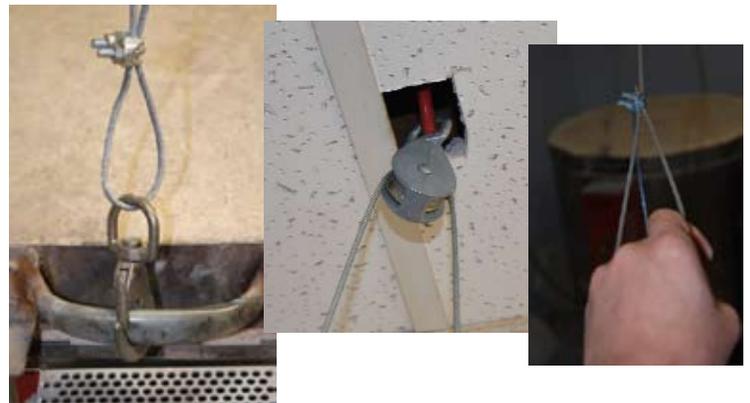
About the kiln

As mentioned, a gas or electric kiln can be used for this procedure. The reason you'll often see artists using gas kilns is because they are portable and used outdoors, where many larger electric kilns can be difficult to transport and may require special wiring. I like to use electric kilns with digital controllers because I can see when the temperature is right and the items are ready to pull. I do use a large kiln in my basement and it requires I carry the items with tongs about 50 feet to get outside. I also use a small electric kiln (Paragon Home Artist) with a 12-inch interior out on my patio because it can be plugged into

a regular outlet. Many kiln manufacturers have small electric kilns which plug into standard outlets and have digital controllers.

If you don't have a digital kiln, don't worry. It can be done with a manual kiln. A digital pyrometer is needed to give the actual temperature and those can be purchased for under \$80. Digital pyrometers are easy to use and can be placed through a peephole plug hole.

What about larger kilns? Is it safe to be opening the kiln when it's hot? With larger kilns it may require opening a lid where your arm or face is directly over the opening of the kiln, exposing you to heat. Create a pulley system by purchasing metal cable and a pulley at a hardware store. Hook the cable through the kiln lid handle and run that through a pulley attached to the ceiling above the kiln. Have the cable long enough so a second person can pull to open the lid while the other person reaches in with the tongs.



About the hair

Will any kind of hair work? Even though most hair will burn, the thicker the hair, the better. Hair from the family dog probably won't leave many markings. Hair from a horse's tail or mane is thick. Check with local horse owners to see if they would give or sell the loose hair collected when brushing. It does not take a lot of hair to do a vase. Some artists also use feathers and hair from other creatures, but horsehair has always given me the best results.

What not to do

Things can go wrong. What can happen if the items are removed from the kiln when they are too hot? First of all, the risk of cracking is increased. The hair also catches fire, flames up and will often leave larger black areas on the ceramic surface.

Safety

Don't forget the pieces are hot when removing from the kiln. Be sure to wear protective clothing, pull long hair back, don't wear loose clothing and don't do it in bare feet or while wearing flip-flops. Keep flammable materials away and don't allow small children or pets in the area. Also have a fire extinguisher handy, just

in case. Disconnect power to the kiln before reaching in with metal tongs. If the firing is done indoors, move rugs or other flammable items from the path. Pull back any curtains or draperies which could blow into hot items if a breeze blows. Always wear protective gloves when opening a hot kiln.

Much of this sounds like common sense, but always stop and think and walk through the process to see if you're forgetting or missing anything before moving hot items. The technique is fun, but you also need to be safe!

For additional information regarding this technique, contact the artist at:

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