



# Colorful sagger firing

## Objectives

- Make a sagger firing chamber to fit your kiln
- Polish underglaze before firing
- Sagger fire a load of ware

By Michael Harbridge

**S**agger firing is an unusual firing process in which you create a separate chamber or container to go inside your kiln. The chamber is lined with materials like sawdust and straw, then sprinkled with copper carbonate, iron oxide, and table salt. The shapes you're firing are wrapped with

small amounts of steel wool and/or copper scrubby wire, then stacked inside the chamber along with the other filler materials — if you allow some of the chemicals to contact the ceramic shapes, they will add color in the firing, and can also leave a little texture. Then the chamber is loaded into the kiln and fired. Unlike raku, you don't take items out of the kiln while they're still hot, but the results are still one-of-a-kind.

Since you are burning materials and some chemicals inside the kiln, it's best to do sagger firing outdoors or with a well-ventilated kiln. Also, the salt used inside the chamber can have an effect on kiln elements — be sure to check with the manufacturer regarding warranty issues if your kiln is still covered. Some artists complete complete dozens of sagger firings without noticing any negative results, and some say firing a traditional low or high-fire greenware load between sagger firings helps.



## Materials

Raku clay by Continental Clay  
Kiln shelf  
Kiln fiber blanket  
Underglaze colors of choice  
Polishing cloth  
Clay shapes

## Miscellaneous

5 gallon bucket  
5 gallon or larger trash bag  
Straw, dry grass, or similar materials  
Orange Peels or similar organic materials  
Hardwood sawdust  
Copper scrubby  
Steel wool  
Copper carbonate  
Iron oxide  
Table salt  
Two project boards from Continental Clay  
Aluminum foil

## Building the Sagger Chamber

**Step 1:** Constructing a firing chamber can be done in a number of ways. I've found using a five-gallon plastic bucket as a form is a simple way. It can also be thrown, coil built, or slab built. A raku clay body holds up best. If using the plastic bucket method, line the bucket with a plastic trash bag to prevent the clay from sticking.

**Step 2:** Roll out slabs of clay or flatten chunks of clay to press inside the plastic-lined bucket. Cover the entire interior and work the clay together wherever you have joints.

**Step 3:** Place a project board over the top of the bucket and flip the board and bucket over. Carefully slide the bucket off of the plastic-covered clay shape, and then pull the plastic bag away. Place another project board over the top of the clay shape (which will actually be the bottom of the chamber) and turn the chamber upright. Allow sufficient drying time before firing to cone 04.

You can also create a lid for the chamber with a clay slab, but there's an easier way to close the chamber for firing, as you'll see.

## Preparing the Ware

You can produce the shapes with just about any method, using any low-fire clay body, including earthenware and raku. Smooth surfaces do work best with sagger firing.

**Step 1:** Create your shape(s). Smooth any imperfections and allow them to dry completely.

**Step 2:** Apply three coats of underglaze color. Once the last coat has lost the shiny wet look, but before it's



completely dry, polish the glaze with a cloth. Rub the cloth in a circular motion until you see a sheen. Don't press too hard, since the greenware is still fragile. This will give the shapes a nice smooth surface, as well as nice sheen and color.

**Step 3:** Fire the shapes as you would a normal greenware load, except that shapes created with low-fire casting slip or moist clay should only be fired to cone 07. Shapes made with raku clay can be fired to cone 04. Allow to cool.

## Load the Sagger Chamber

**Step 1:** Place a couple inches of sawdust in the bottom of the chamber. Any area of the clay shapes embedded in sawdust will generally fire out black, so don't go too deep. Place the chamber inside the kiln.

**Step 2:** Wrap some steel wool or copper scrubby wire around the shapes as desired. You can also put some organic materials on a sheet of aluminum foil and wrap that around a shape, as well.

**Step 3:** Position your shapes in the sawdust. Place items randomly, as shown in the pictures. Some will be on their sides, and they can touch one another.

**Step 4:** Find a spot in the sawdust where you can place a teaspoon of table salt and a teaspoon of copper carbonate so it will not touch the shapes.

**Step 5:** Place straw and other natural materials inside and around the shapes. You don't want to smother them. Allow plenty of space around the shapes for best results.

**Step 6:** Place a sheet of fiber blanket over the top of the chamber and place a kiln shelf on top of that. This will give a nice tight seal for best results.





## Sagger Firing

Leave the peephole plugs out on the kiln and prop the lid open for the first thousand degrees. It's not uncommon to see smoke coming from inside the kiln as the natural materials burn off. If your kiln has a vent system, plug the peepholes, close the lid, and start the kiln. Program the kiln to fire to cone 07 in the same manner you would fire a greenware load. Allow the kiln to cool, remove the chamber, and remove the ware. Clean up the shapes to remove any ash. Some artists also apply a wax polish for additional shine.

These items are only for decorative use — they will not hold water and should not be used for holding food.

## Advanced Methods

Experiment by adding different dry materials and chemicals to see new reactions in sagger firing.

**About the Artist:** Michael Harbridge has been teaching fired-arts workshops for more than 35 years and is the educational arts manager for Royal & Langnickel Brush and the creator of clay puzzling. He can be contacted by mail at P.O. Box 108, Iola, WI 54945, by phone at (715) 281-6450, or by e-mail at [info@claypuzzling.com](mailto:info@claypuzzling.com). Visit his website at [www.claypuzzling.com](http://www.claypuzzling.com).

## Sources

Clay Puzzling: [www.claypuzzling.com](http://www.claypuzzling.com)  
 Continental Clay: [www.continentalclay.com](http://www.continentalclay.com)  
 Mayco: [www.maycocolors.com](http://www.maycocolors.com)  
 Royal Brush: [www.royalbrush.com](http://www.royalbrush.com)

