

SAWDUST FIRING

Fire to about 900 F (1116° to 1341°F)

NOTES:

- Burnish or not
- Sprinkle stuff, salts around piece while loading kiln
- Can apply slips or salt before bisque
- Kiln built of bricks, bottom too with sheet metal lid
- Light on top, when started all over – cover and let smolder. (if under 24 hours, too fast)
- 4" sawdust on bottom
- Place pieces on sawdust – (bottoms will be very black) could sit on side or on a brick
- Surround with sawdust and 4" on top
- If stacking, place chicken wire between layers to prevent rough settling.
- Smaller sawdust produces blacker surfaces

OXIDE WASH

Place to begin trials-mix with 1 pint of water

½ t copper carb	lt green, turquoise
¼ t copper oxide	dark green, blacks
¼ t chrome oxide	leaf green, opaque
1/8 – ¼ t cobalt carb	lt blue, transparent
1/8 or less cobalt oxide	dark blue, blacks
½ - 1 t red iron oxide	tan, brick red, brown
¼ - ½ t black iron oxide	opaque tan, brick red, brown
1/8 – ½ t manganese dio	brown toward purple

Try yellow ochre in a thick wash

Sawdust Firing – (from Lowfire, other ways to work in clay)

Sawdust firing heats and hardens clay using a simple kiln. This firing technique is somewhat less harsh on clay objects than pit firing. Temperature buildup is more gradual and the normal cooling period takes longer than most pit fires. Because of this, extended forms, such as wide, shallow bowls, narrow-necked vases, and forms with appendages, can be fired with greater likelihood of survival. Hand built or wheel thrown pieces may be fired with this method if they have thin, even walls. Almost any kind of open clay body can be used to make objects for sawdust firing.

A good sawdust firing brings about natural reduction on unglazed ware. Burnished or unburnished slip, and carved or incised decorations adapt well to this type of firing. Because of the direct contact of the sawdust on both the interior and exterior of the ware, the use of glaze is not recommended.

After the objects have been made, they should be allowed to dry completely before they are placed in the kiln. Warming or sun-baking them just prior to stacking will help ensure that most of the atmospheric moisture has been driven out.

Some clay workers prefer to bisque fire their ware before putting it in a sawdust fire.

This is not necessary , with the exception of pieces that are very large or in which a great deal of time has been invested in decoration.

Most clays will turn black in a sawdust fire because of carbonization. However, previously bisqued ware will be more durable and can also offer different color effects. If red or buff clays are bisqued, they will not become completely black.

Colored slips applied to leather hard objects which are then bisqued before firing tend to retain more color. When used in this manner, copper carbonate offers a wide range of color, including pinks and reds.

**It is also possible to sawdust fire glazed ware that has been previously fired to stoneware temperatures. This can bring about interesting carbon clouding and crackle effects.

SAWDUST - There are divergent opinions on which type of saw- dust is best for firing. Some people feel that superior effects can be brought about by using only exotic woods, while others are more concerned about the size of sawdust particles. Experiment with different types of wood and note the variations for further use. Sawdust that is very fine will burn too quickly and could possibly explode into flame when ignited. Coarse, rough-cut .sawdust leaves too many air spaces for adequate reduction. The most consistent results can usually be obtained from a mixture of 70 percent medium and 30 percent coarse sawdust. Small amounts of bench shavings can also be mixed with sawdust. In all cases, the sawdust should be dry to afford complete burning.

LOOSE BRICK KILN - Different sizes and shapes of kilns can be easily constructed because no mortar is necessary .The construction and packing of the kiln should be done outdoors and both can be done at the same time.

Use an area of cleared, flat ground as the kiln floor. Set the first course of bricks as the perimeter of the floor. Because not much insulation is needed, the bricks can be set on edge rather than on face. This also means that fewer bricks are needed to gain the full height of the kiln. Place the bricks together fairly tightly. However, some passage of air is necessary to ensure complete combustion during the fire.

After two courses of brick have been set up, pour in 4 to 6 inches (10.2 to 15.2 cm) of sawdust and tamp it evenly across the whole floor. Place a few of the heaviest objects on this base. For equal heating during the fire, **fill the ware with sawdust.** Add more brick courses. Then pour more sawdust around and over the pieces, tamping lightly, until the ware is completely covered. Add another course of bricks and then pour in 3 to 4 inches (7.6 to 10.2 cm) of sawdust and tamp. Continue to place more objects in the same manner until the kiln is completed. Shallow bowls and plates should be packed on edge to re- duce breakage. Fill bottle shapes to the top with saw- dust and place them right side up to ensure proper heating from within as well as from the outside.

The kiln should not be filled with more than three layers of ware. As the fire progresses, the sawdust cushion burns away and all the pots end up on top of one another on the floor of the kiln. Too much weight will break those pieces on the bottom of the pile.

When the kiln is packed, add one more brick course and then place tightly bunched newspaper on top of the sawdust to act as tinder. Light the paper with a long fireplace match. Be sure all the paper is burning before the kiln is covered. In the kiln

shown here, a galvanized trash can lid serves as an ideal cover, leaving small openings at the corners to allow air in and smoke out. Larger diameter kilns will require sheet metal or asbestos board covers. Once the fire has been started, do not handle the cover until all smoking has ceased and everything has cooled.

The length of time needed to complete a firing depends on several factors: the size of the kiln, what kind of sawdust is used, how tightly the kiln is packed, and how much air can get in to aid combustion. Firings can take from three or four hours to three or four days.

If the bricks are set too tightly, not enough air can get in and the kiln could smolder for days. Bricks set too loosely will cause the kiln to burn too fast, preventing adequate heating and good reduction. Experimenting with the placement and size of the air spaces can bring about interesting flashes of iridescence on some of the fired pots while still providing good overall reduction.

WATERPROOFING POTS - A sawdust firing will reach between cone 021 and cone 017 (1116° to 1341°F). Because these temperatures are not high enough to mature clay, the fired ware will be quite porous. For centuries, people have waterproofed their pots after firing by filling them with milk and allowing them to stand for a few days. Pieces can also be seasoned with cooking oil to reduce the porosity. If necessary, the interior of pots could be coated with liquid acrylic paint to render them waterproof. With either oil or acrylic paint, some of the inherent character of ware fired in sawdust will be lost.

Some clay workers recommend the use of tung oil to seal primitive and sawdust fired pots. Tung oil, derived from the seeds of the Chinese tung tree, will soak into the porous clay, become hard, leave no shine when it dries, and enhance the quality of the finished piece.