Operating the Kiln

KILN WASH

Different users have different opinions as to how many coats should be applied. Kiln wash should be mixed 5 parts water to 1 part kiln wash. It's better to have it too thin then too thick. I use 4 coats applied with a brush. A "haik" brush works best, but any brush will do. My routine is to apply kiln wash is to match the compass directions. First I apply a coat up and down north to south. Then a coat side to side east to west. Then a coat diagonally southwest to northeast, then a final coat diagonally northwest to southeast. Some users prefer to spray the kiln wash on. You can use a compressor powered sprayer, a hand pump garden sprayer, or even a little plant sprayer. Whether you spray it on or brush it on, you'll have to keep agitating the mix because kiln wash won't stay dissolved very long but keeps settling to the bottom.

Kiln wash should be allowed to completely dry before using it. When applying multiple coats, it's best to allow each coat to dry before applying the next coat. If you apply multiple wet coats, the top surface can dry but trap moisture inside one of the lower layers of kiln wash. This moisture will then rise to the surface during firing and create a bubble in the glass. Having a 2nd kiln shelf makes it convenient to be coating one shelf while the other is being used. If you want to speed up drying, place your kiln shelf on the kiln while it's on. If you suspect your kiln shelf isn't thoroughly dry, place it in the kiln and heat it up to 500º F to dry it. You might be tempted to use gloves to immediately remove the shelf, but opening your kiln at this temperature can damage it. (see Crash Cooling). Pull the vent plug and slightly open the lid if you want to cool the kiln quicker.

How many times you can fire on a shelf before replacing the kiln was will depend on how high you're firing and what kind of glass you used. The higher the temperature, the more frequently you should reapply new kiln wash. Opaque glass tends to cause kiln wash to break down quicker then cathedral. My practice is to fire the shelf 4 times then apply new kiln wash. Trying to get too many firings without replacing the kiln wash can cause it to stick to the bottom of your glass. Removing it is a lot of work, and sometimes it can't be removed at all. Better to be safe and not gamble. If the kiln wash has started to pit or flake, it should be completely scraped off down to a clean shelf. Sometimes it isn't necessary to completely scrape off the kiln wash and you can just clean it and apply another coat. A dry sponge works to wipe off and smooth off a kiln shelf to prepare for an extra coating. A putty knife works well to scrape kiln wash off a shelf. Any kiln wash that doesn't come off easily with scraping can be sanded

KILN PAPER

Kiln paper is used to prevent the glass from sticking to the kiln shelf. Some artisans also use it to prevent glass from sticking to molds but that's a poor idea because, wherever the paper is folded, it leaves marks in the glass.

The most popular paper is Bullseye's "Thinfire". It's available in 20.5" x 20.5" sheets or 41" x 250" rolls (that's a LOT of paper). It's looks just like regular paper and can be easily cut with scissors or a stencil knife. If you cut it small enough to fit, it can be run through your computer's printer. Once fired, the paper turns to a white powder that can be vacuumed from your kiln. Kiln paper dust is very bad stuff. Be very careful vacuuming it up if you don't have a HEPA filter on your vacuum. You can also pick it up with a wet paper towel, or remove the kiln shelf and brush it off.

Although most kilnformers use kiln paper for a single firing, it can be used multiple times if you're careful removing the glass on it and don't disturb the powder. There's a variety of small suction lifters that are used to position glass in kilns that work equally well to remove a finished firing without moving the powder. Don't be surprised if, during the kiln firing, you smell burnt sugar. Sugar is used as a binder in the paper. Also, don't be shocked if you peek in your kiln during firing and see the paper has turned black. It does that just before it turns to powder.

Kiln paper is a great alternative for those that don't want to brush or spray on kiln wash or for instances where you want to fire the kiln right away without waiting to apply and dry fresh coats of kiln wash. It's also less likely to permit bubbles then kiln wash and provides a smoother surface on the glass than kiln wash. Many artisans that usually use kiln wash will use kiln paper for firings that are particularly susceptible to collecting bubbles.

STACK FIRING

Every kiln has some spots that are a slightly different temperature than others. Glass kilns are designed

with top elements because the direct heat works best for kilnforming glass. Ceramic kilns have side elements only and will have relatively even heat throughout the kiln. If you stack layers of shelves in a glass kiln, the temperature at the top shelf will be different than that at the bottom shelf. You might get away with fusing the top layer while slumping the bottom layer, but you will only be able to accurately control the temperature at the same level as the thermocouple. If you fire a single layer in your kiln, you can get a perfect firing. If you fire two layers, you'll probably just get two "not so good" firings. Be patient – take the time to fire twice and have two perfect firings.

CRASH COOLING

Opening the peephole plugs or lifting the kiln lid to speed up cooling can be dangerous. Not only can it cause the glass to crack from thermal shock, it can damage the kiln bricks. It's safe to remove the peep holes plugs and lift the lid an inch or so when the kiln temperature drops to 300° F, the safe to fully open the lid at 200°

FIRING LOG

It's important to keep a Firing Log of your firings to have a record of the results you got from different firings. You will make mistakes, but a well kept Firing Log will help ensure you don't repeat them.