

Kiln Corner Learning to Master Firing Schedules

by Arnold Howard

Photos Courtesy of Arnold Howard

Some people feel that a firing schedule should give the same results from one kiln to another, because digital kilns are programmed with mathematical accuracy. However, every kiln fires a little differently, so tweaking a schedule is often necessary.

As an eight-year-old, I painted by numbers from kits. I was careful to paint within the lines until my older sister, Kate, taught me to blend the oil colors with my brush. "Don't stay within the lines," she said, as I watched her blend the colors of a collie she was painting.

A published glass firing schedule is like painting by numbers. Though extremely valuable, schedules are meant to be a starting point for your own experiments. Feel free to alter them.

Changing Firing Schedules to Fit Your Own Kiln

Why do results vary from one kiln to another? A large kiln may not be able to keep up with the firing rate of a schedule that was made for a small kiln, since the large kiln takes longer to heat and cool than the small one. A kiln that has elements only in the top will give different firing results than one with elements in the top and walls.

Change the firing schedule by watching the glass as it fuses. Be sure to wear green #3 firing safety glasses. Watch through a kiln peephole, a glass window, or even by opening the door of a front-loader half an inch and looking inside for a second. If the glass hasn't fused correctly using the published temperature, change the temperature. Turn the kiln off or skip to the next segment only when the glass looks exactly the way you want and write down that temperature. The next time you fire the kiln, use the new temperature.



In the Skutt ceramic kiln, with elements only in the walls, glass must be fired slowly, which is why a normal glass firing schedule may need to be altered for this kiln.



The massive Paragon Pearl-56 has elements in the top, four sides, and bottom, so it fires differently than a kiln with elements only in the top or sides.

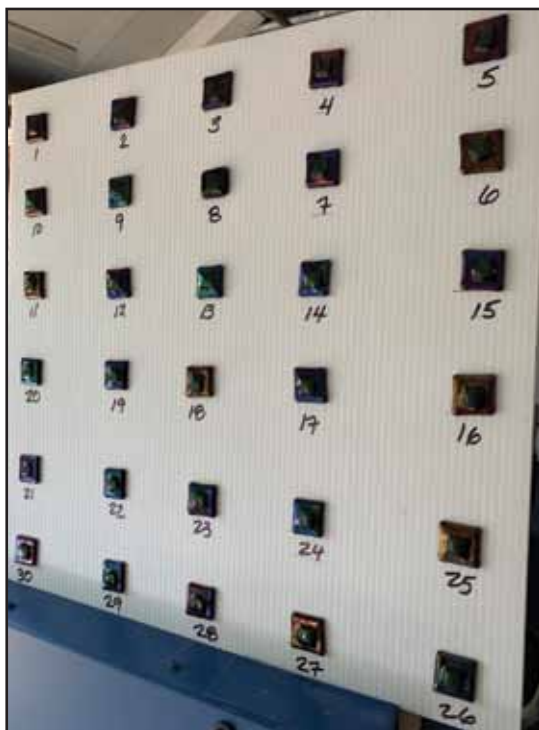
Testing the Heat Distribution of Your Kiln

Firing a kiln is like driving a car. An excellent driver is guided by the “feel” of the road and the controls. The more familiar you become with your kiln, the quicker you will fire it by feel rather than only by numbers.

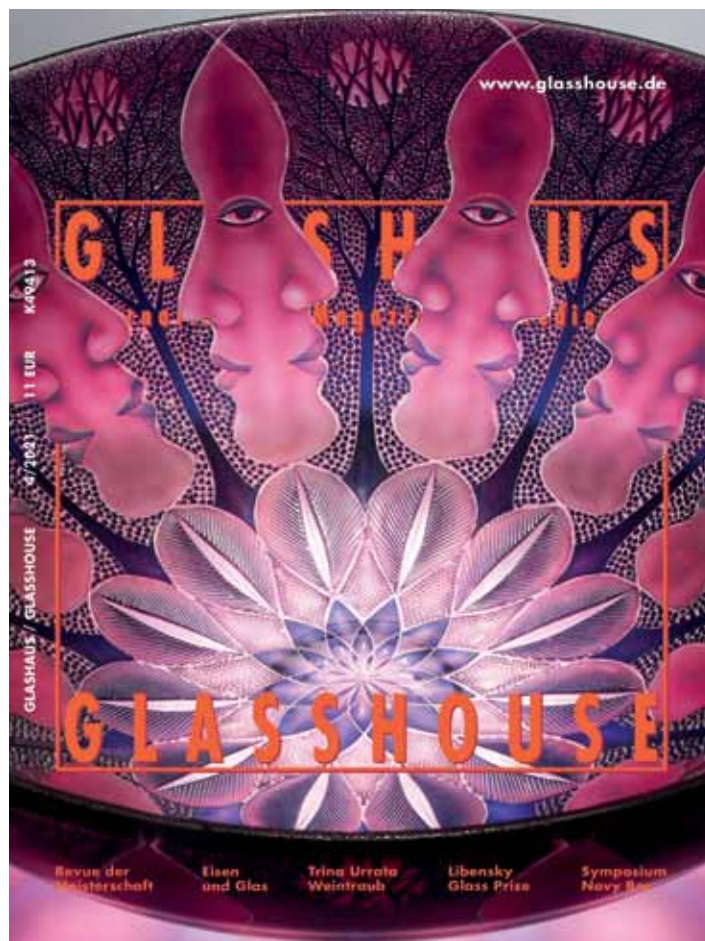
To become familiar with your kiln, run a heat distribution test. Place small squares of glass, stacked two layers high, throughout your kiln shelf, spacing them evenly. Fire them to a tack or medium fuse. After the kiln cools to room temperature, glue or tape the samples to a poster board. The board is a map showing where the cooler and hotter areas of your kiln are.

Whether you fuse glass as the ancients did, with a fire in the desert sand, or you use a digital controller, the kiln is only a tool. No matter what type of control system you use, the results depend solely upon your own creative judgment.

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In this heat distribution test, each glass square has two layers. The top layer is smaller than the bottom. Space them evenly throughout the shelf.





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Since 1977, when Arnold Howard began working at Paragon Industries, he has seen kilns evolve from switches to touch screen displays. He helped test the early glass kilns, wrote Paragon instruction manuals, and taught kiln classes in America, Australia, and England.

Arnold started Howard Kilns, LLC, a repair and preventive maintenance business, in September 2019 to serve the Dallas-San Antonio, Texas, area and works on all brands of kilns. Feel free to contact him at arnoldhoward@gmail.com.

