



### Pattern Fuser Basics

*Create functional pieces like platters or plates or decorative wall art using Colour de Verre's Pattern Fusers. Combinations of frit and sheet glass create almost endless possibilities.*



Colour de Verre's Pattern Fusers have a deeply carved pattern on the molds' bottom surface. The simplest use of the mold is to place two separate sheets of glass - or one sheet of double-thick glass - in the Pattern Fuser and fire. Even this simple process produces spectacular results. With the addition of colored frit and iridized and dichroic sheets, the number of creative possibilities and beautiful results grows rapidly.

### Getting Started

The mold must be primed so the glass doesn't adhere to the mold during the casting process. There is only one primer recommend for Colour de Verre's Pattern Fusers: MR-97™ Aerosol Boron Nitride. While we also recommend Hotline Primo Primer™ for other Colour de Verre molds, it can be difficult to uniformly cover the sharp edges and deep contours of the Pattern Fuser with a brush-applied primer.

Unless the mold has never been used before, start by removing any MR-97 from previous firings. Use a stiff nylon brush like the Libman® Curved Kitchen Brush. These brushes are available from national retailers like Target and Kroger. While boron nitride is considered to be an inert material, it is a fine dust. In our studio, we always clean molds outside while wearing a dusk mask.

Hold both the can and the mold vertically, about 10 to 12" (25 to 30cm) apart, and spray the mold in a sweeping pattern for five to six seconds. It is helpful to rotate the mold halfway through the process to make sure all the surfaces are coated including the inner surfaces of the "dams" that encircle the mold. If this is the first time the mold is being primed wait five

minutes and spray the mold again for five to six seconds.

With all aerosols, there is a tendency for less product to be dispensed as the product is used up. If your MR-97 can is less than half full, during each application spray the mold an extra one or two seconds longer.

Wait 15 minutes until mold is dry and it is then ready to fill. Again, the double coat of MR-97 only need be applied the first time the mold is used. Thereafter, only one coat is necessary.

For more information about MR-97, visit Colour de Verre website's Learn section. There, download and read "Advanced Priming with Boron Nitride Aerosol."



### Filling the Molds

The molds are intended to be used with COE 96 or COE 90 art glass.

### Availability

*Colour de Verre molds are available at fine glass retailers and many online merchants including our online store, [www.colourdeverre.com](http://www.colourdeverre.com).*

### Tools

- ✓ Colour de Verre Pattern Fuser
- ✓ Glass cutter
- ✓ Small measuring spoons for sprinkling frit
- ✓ Digital scale

### Supplies

- ✓ MR-97 Aerosol Boron Nitride.
- ✓ Assorted fine and powdered frits
- ✓ Double thick sheet glass or two standard sheets

Colour de Verre molds should not be used with borosilicate, Pyrex, crushed bottles, or float glass. At the temperatures necessary to melt the later glass formulations, the mold may be damaged or the MR-97 may lose its effectiveness.

We refer to the amount of glass that is put into a Colour de Verre mold to get optimal results as the “fill weight.” The fill weight for the Pattern fusers is 950 to 1,300 grams. It is important to use one sheet of double thick glass (or two sheets of single thickness glass) in conjunction with the frit.



To fill the mold, cut glass sheets to 9.75 inch (24.5cm) squares and carefully lower them into the primed mold. Variations including iridized sheets and frit are listed later in this document. *Tip: Grind away the sheets’ sharp corners and edges to avoid damaging the primer as the glass is lowered into the mold.*

### Loading the Kiln

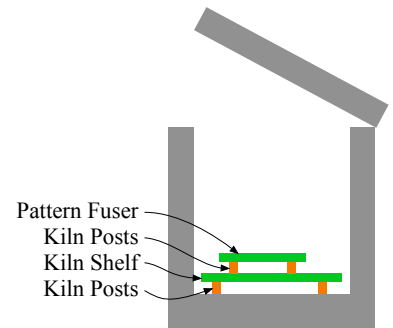
To minimize thermal stress to both the Pattern Fuser and the glass, it is very important to make sure there is good heat flow throughout the kiln. For this reason, the Pattern Fuser should be elevated

off the kiln shelf with small, 1” kiln posts and the shelf itself should be elevated off the floor of the kiln with kiln posts. See the figure below.

### Firing

Top and side element kilns heat their contents differently. Top element kilns work more like oven broilers. Surfaces in “direct sight” of the electric element’s heat much more rapidly. Side element kilns heat their contents indirectly, but the heat is more uniform. These differences become an important factor since the Pattern Fusers’ surface area is so broad. We have created two different firing schedules to compensate for these

differences. If you have top elements in your kiln that cannot be turned off, fire according to the Top Element Schedule. If you have a side element only kiln (or can turn off the top elements) fire according to the Side Element Schedule.



Kiln Cross Section

### Side Element Schedule\*

| Segment | Ramp        | Temperature           | Hold            |
|---------|-------------|-----------------------|-----------------|
| 1       | 150°F/85°C  | 300°F/150°C           | 30 minutes      |
| 2       | 200°F/110°C | 1250°F/675°C          | 30 minutes      |
| 3       | 200°F/110°C | 1400-1420°F/760-770°C | 10-20 minutes   |
| 4       | AFAP        | 960°F/515°C           | 60 minutes      |
| 5       | 100°F/60°C  | 600°F/315°C           | Off. No venting |

### Top Element Schedule (with or without Side Elements)\*

| Segment | Ramp       | Temperature           | Hold            |
|---------|------------|-----------------------|-----------------|
| 1       | 100°F/55°C | 300°F/150°C           | 30 minutes      |
| 2       | 150°F/85°C | 1250°F/675°C          | 30 minutes      |
| 3       | 150°F/85°C | 1350-1400°F/730-760°C | 5 minutes       |
| 4       | AFAP       | 960°F/515°C           | 60 minutes      |
| 5       | 100°F/60°C | 600°F/315°C           | Off. No venting |

### Slumping Schedule\*

| Segment | Ramp        | Temperature  | Hold            |
|---------|-------------|--------------|-----------------|
| 1       | 200°F/110°C | 1200°F/650°C | 5 minutes       |
| 2       | AFAP        | 960°F/515°C  | 60 minutes      |
| 5       | 100°F/60°C  | 600°F/315°C  | Off. No venting |

\*Schedule for COE 96. For COE 90, increase casting temperature by 20°F/15°C. AFAP means “As Fast As Possible”, no venting.



### Slumping

Finished panels can be slumped either pattern side-up or pattern side-down without compromising the embossed design. Pieces slumped with the pattern side-down are more functional, but this format is only effective if the glass is transparent and one can look through the piece to see the design.

Pieces fired with the pattern side-up are dramatic, but less functional.

In either case, place the cast panel on a kiln washed slumping surface. Fire according to the Slumping Schedule.

### Variations

1. Evenly sprinkle fine, transparent frit into the mold's recesses and border (100 to 200 grams depending on the intensity of the frit's color). Top with a 9.75 inch (24.5cm) square of double-thick clear. Fire according to one of the two casting schedules. When cool, slump textured side-down. *Tip: When filling the border area, dilute the frit with 50% clear and fill to top of ridge.*
2. Cut a piece of black glass to a 9.75" (24.5cm) square. Cut a second square of black, iridized glass. Place the iridized glass, - iridized surface down - into the mold. Place the plain black glass on top. Fire according to one of the two casting schedules. When cool, slump textured side-up.

This technique also works great with clear or colored, transparent iridized glass backed with black or clear sheet glass.

3. Cut double-thick, clear glass into squares or other small shapes. Top each shape with between 10 and 20 grams of powder or fine, transparent frit. Stabilize the frit with a bit of "extra hold" hair spray and place each square, frit side up, anywhere within the texture portion of a pattern fuser. Fire according to one of the two casting schedules. When cool,

slump textured side up or down.



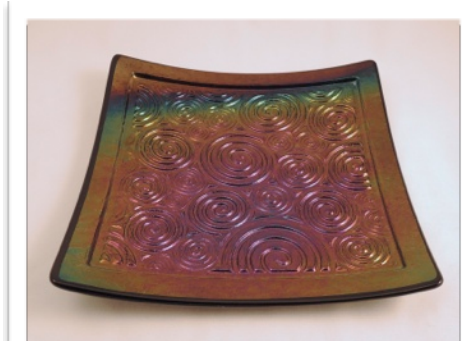
Variation #1: Uroboros Teal Green, Light Blue, and Deep Aqua frit



Variation #3: Shows range of shape and sizes that can be created



Variation #1: Turns Pink and Light Blue frit and Spectrum Double-Thick Clear



Variation #2: Uroboros Black Iridized Glass



Variation #1: Black and Cherry Red frit topped with Spectrum Double Thick Clear sheet glass