



## Large Round Box Mold

*There is plenty of room for creativity with this design. Fill the mold with frit, sheet glass, or a combination of the two. The large lid is a great “canvas” for embellishment with cast or pre-cut pieces*



The design consists of two molds. One mold – the larger of the two – is used to cast the box base. The other mold; the lid.

For successful castings, there are three important steps to remember:

- Prime the mold correctly.
- Heat the molds no faster than 300°F (165°C) per hour.
- Don't rush the annealing schedule. The controlled cool-

ing of the kiln prevents internal stresses from cracking the piece.

### Getting Started

The two molds must be primed so the glass doesn't adhere.

Always start the same way: Clean your Colour de Verre box lid and base with a stiff, nylon brush or a green 3M Scotch-Brite™ pad to remove any old kiln wash. (This step can be skipped if the mold is brand new.)



*Kiln carved lid created with fiber paper*

There are two choices for primers: Hotline Primo™ Primer and ZYP BN Lubriccoat™ (formerly MR-97). The ZYP is the easiest to apply and remove. It is an aerosol and, after firing, brushes off easily from the molds and can be washed off the glass pieces. Castings created using ZYP have exceptionally smooth surfaces and almost never require grinding or “cold work.”

When applying or removing either of these two primers, it is advisable to wear a dust mask.

Primo is a traditional kiln wash that is applied with an artist's brush. It's a trusted and proven product, but requires a bit more “elbow grease” to remove after firing. Primo's big advantages are its low cost and availability.

Brief instructions for each option follow:

To apply ZYP, work in a well ventilated area or outside, and hold the well-shaken can 10 to 12 inches from the base mold. Hold both the mold and the spray can upright. Apply the first coat using a four to five-second burst of spray in a sweeping pattern across all the mold's cavities. Do not saturate the surface. If it is the first time ZYP has been applied to the mold, it is necessary to apply a second coat of the product.

Before applying the second coat, let the mold dry for five minutes. Apply the second coat using another four to five-second burst of spray. Repeat this process with the lid mold using a three-second burst of spray. Let the molds dry for ten to fifteen minutes before filling. Again, the double coat of ZYP only need be applied the first

### Tools

- ✓ A Colour de Verre Large Round Box mold set
- ✓ Large artists' brush
- ✓ Digital scale
- ✓ Dust mask

### Supplies

- ✓ Hotline Primo Primer™ or ZYP BN Lubriccoat (formerly MR-97)
- ✓ Assorted frits, sheet glass, billets, casting rocks, etc.

time the molds are used. Thereafter, only one coat is necessary. For more information about ZYP, visit our website. There, download and read "Priming with Boron Nitride Aerosol" and watch the video "Priming with ZYP BN Lubricat."

If you choose to use Primo Primer, mix one part dry primer powder with four parts water. Next, give the molds *five* coats of Hotline Primo Primer™.

Apply the Primo Primer™ with a soft artist's brush - not a hake brush - and use a hair dryer to completely dry each coat before applying the next. The mold should be totally dry before filling. The primer need not be pre-fired.

One important hint: This primer settles very quickly. Each time the brush is dipped, be sure to give the primer a good stir so all the ingredients stay in solution. If the primer has sat more than 5 minutes, the active ingredients will cake on the container's bottom. Make sure to stir these sediments back into solution.

### Filling the Molds

The molds are intended to be used with COE 96 or COE 90 art glass. Colour de Verre molds should not be used with borosilicate, Pyrex, crushed bottles, or float glass. High temperatures can have negative effects on both the molds and the primers. When using frits, especially powders, it is advisable to wear a dust mask.



Any frit mesh, billets, casting rocks, glass pebbles, sheet glass—broken or cut-to-fit, "nipped" rods, or a combination of these glasses can be used. If you are using opal frits, better results are obtained by mixing the opal frit with an equal amount of clear frit. Fill the primed lid mold with 300 grams of glass and arrange it as evenly as possible in the mold. Fill the primed base mold with 800 grams of glass. Again, arrange it as evenly as possible in the mold. At this point, the mold is ready to fire.

### Firing the Molds

Place the two filled molds into the kiln. Use either Casting Schedule #1 or Casting Schedule #2 depending on the materials used to fill the molds. Don't rush the schedule's slow cooling ramp as this allows for proper annealing. Also note that the schedules need to be modified for kiln load, COE, and glass color. Heating element position can also effect firings. Use lower temperatures when using a top element kiln.



*Uroboros Blue Streamer Bits glass with Pale Blue lid and Snowflake 2015 embellishment*

### Casting Schedule #1\*

For Fine and Medium Frit

Segment	Ramp	Temperature	Hold
1	300°F/165°C	1250°F/675°C	30 minutes
2	300°F/165°C	1410-1420°F/765-770°C	30-60 minutes
3	AFAP	960°F/515°C	90 minutes
4	50°F/30°C	800°F/425°C	None
5	100°F/60°C	600°F/315°C	Off. No venting

### Casting Schedule #2\*

For Sheet and "Chunky" Glass

Segment	Ramp	Temperature	Hold
1	300°F/165°C	1250°F/675°C	30 minutes
2	300°F/165°C	1430-1440°F/775-780°C	30-45 minutes
3	AFAP	960°F/515°C	90 minutes
4	50°F/30°C	800°F/425°C	None
5	100°F/60°C	600°F/315°C	Off. No venting

\*Schedule for COE 96. For COE 90, increase casting temperature by 15°F/8°C. AFAP means "As Fast As Possible", no venting.

### Fusing Components To Lids

Boxes can be embellished by tack fusing elements to the lids. Possibilities include Colour de Verre castings; frit balls; slumped rods; and shaped noodles, streamers, and stringers.



50/50 mixture of fine Adventurine and Clear. CBS Firestrips fused to lid

Place the lid in a freshly primed mold. (This prevents the lid from warping.) Arrange the glass elements on the lid. A drop or two of white glue can be used to temporarily hold the piece in place. If the elements have been slumped or shaped, support the pieces with wedges of fiber paper. Fire according to the Tacking Schedule.

### Base Feet

Give cast boxes a professional finish with the addition of feet. Use peel-and-stick, silicon cabinet bumpers, e.g. 3M Bumpon™,

available from most hardware stores. This will also protect tabletops.



Blue Streamer Bits on Clear tiles being added to mold

### Variations

Our favorite way to fill the Large Round Box mold is to feature collage or art glass on the base's sidewalls. The technique works best when the collage or art glass has a clear base, for example, Uroboros' Black Streamer Bits on Clear glass or Spectrum Glass' Stripes glass.

Start by priming the molds using either of the two above techniques. Weight the base mold and record the weight. *Tip: We often use a pencil to write the mold weight on the side of the mold.*

Select a sheet of compatible art or collage glass and cut twenty-five

1½ x ¾ inch (40 x 20 mm) tiles and nine 1½ x ⅝ inch (40 x 16 mm) tiles.

To the base mold, evenly add 10 to 15 grams of medium clear frit to create a base for the tiles. Stand seventeen of the larger tiles around the base mold's outer edge taking care not to scratch the primer. The tiles should lean out and the collage side should face inward. Add a second layer of the tiles alternating larger and smaller tiles. Again the tiles should lean out but, instead, the collage surface should face outward this time. Arrange the tiles so that the gaps in the first layer are covered by the tiles of the second layer.



Stabilize the glass by adding 40 grams of medium Clear frit. Next, weigh the partial filled mold and subtract the weight of the empty mold. For example:

Weight of partial filled mold	1,202
Weight of our mold	<u>-904</u>
How much glass is in mold	298

This calculation produces how much glass is currently in the mold. To determine how much more glass needs to be added, subtract this number from the

### Tacking Schedule\*

Segment	Ramp	Temperature	Hold
1	200°F/110°C	1250-1275°F/675-690°C	5-10 minutes
2	AFAP	960°F/515°C	90 minutes
3	50°F/30°C	800°F/425°C	None
4	100°F/60°C	600°F/315°C	Off. No venting

\*Schedule for COE 96. For COE 90, increase casting temperature by 15°F/8°C. AFAP means "As Fast As Possible", no venting.

total fill weight for the base mold, 800 grams. For example:

Total fill weight for base mold	800
Weight of glass in mold	<u>-298</u>
Amount of glass needed	502

Weigh out the additional glass (in our case, 502 grams). This can be any combination of Clear sheet glass and/or frit. Place the glass in the mold making sure not to scratch off the primer from the mold's surface.



*Uroboros collage glass base. Finial created with stacked Color de Verre Simple Round, Small Ring, and Nano Beads*



Choose a fine or medium frit color that coordinates with the collage or art glass. Mix 150 grams of this frit with 150 grams of Clear frit of the same mesh. Distribute it evenly into the primed lid mold.



*Base created with Spectrum Stripes. Lid 50/50 mixture of fine Lemon-grass and Clear*



Fire both the molds using the Casting Schedule #2.