Candle Holder Basics

Colour de Verre's cast candle holders are easy to make and – plain or fancy – are always a welcome gift.

The candle holders consist of four parts:

- A bowl-shaped base mold
- A cylinder-shaped "plug" that is responsible for creating the depression for the tea light.
- A stainless steel rod that suspends the plug in the base mold.
- A 7" piece of 24 gauge Hotline high temperature wire. This holds a piece of kiln paper in place to cushion the plug.

The candle holders can be made plain or embellished with castings, rods, frit balls, etc.

Preparing the Mold

The mold has to be primed each time it is used. There are only two products that we recommend for priming: Hotline Primo Primer and MR-97. Each has their advantages and drawbacks. For example, MR-97 is very easy to apply and remove, but Primo Primer is extremely economical. To learn more about these two products and their advantages, visit our website's Project Ideas section and look for "Advanced Priming with Boron Nitride." Below, the two methods are described:

Method 1: Hotline Primo Primer Mix thoroughly 1 part Hotline Primo Primer™ to 4 parts water. Apply 4 to 5 thin coats of primer with a soft brush to both the mold and the plug. Make sure to keep the primer thoroughly mixed every time the brush is dipped. Use a hairdryer to dry every coat. It is not necessary to pre-fire the mold, however, it must be completely dry before filling and firing.

Method 2: MR-97 Boron Nitride Apply a three to four-second blast of MR-97 to the mold's interior. If the mold has never been treated with MR-97 before, wait five minutes and apply a second three-to four second blast. Let the mold dry for 15 minutes before filling. The plug will be primed later.

Preparing the Plug

It is important to create a cushion around the plug so it can be removed from the cast glass. For the cushion, we use 1/16" **fiber paper**. ThinFire™ firing paper is not suitable. It is a wonderful product, but isn't thick enough to provide enough cushioning.

Cut a 5¼ by 1⅞" (134 by 48mm) piece of 1/16" fiber paper. (A template can be found below.) Apply a ¼" band of white glue (e.g. Elmers or Aleene's Tacky) to the short ends of the fiber paper rectangle. (If the fiber paper has a rougher side, apply glue to that side.) Wrap the rectangle around the plug making sure the fiber paper's edge is even with the plug's

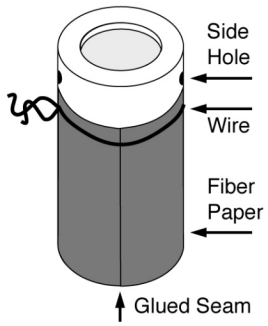
Tools

- ✓ Colour de Verre Candle Holder mold
- ✓ Primer brush
- ✓ Digital scale

Supplies

- ✓ Hotline Primo Primer™ or MR-97 Boron Nitride
- ✓ Assorted frits
- ✓ 1/16" Fiber paper

bottom. Smooth the glued edges against the plug. Let dry. Position the high-temperature wire ¼" from the top of the fiber paper with the ends below one of the holes. Twist the ends with needle-nose pliers to secure the paper.



Plug ready to be used.

If you followed Method 1 and used Hotline Primo Primer, the bottom of the plug has been protected by Primo Primer that you applied earlier.

If you followed Method 2 and used MR-97, spray the fiber paper and the plug's bottom with MR-97. As before, apply a second coat to the bottom of the plug if the plug has never been treated with MR-97 before. Let dry.

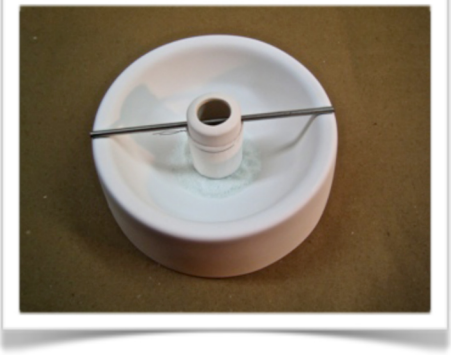
Place the stainless steel rod through the holes in the plug's side. Hang the plug into the mold by positioning the rod into the two notches on the mold's top edge.

Filling the Mold

Consult the Fill Weights table to discover the fill weight for the particular design you are using. The fill weight is the optimal amount of frit with which to fill the mold to get the best finished piece.

Consider:

- Using fine mesh frit will reduce or eliminate the need for cold work.
- The casting created by these molds is quite thick in areas. "Diluting" colored frit with clear frit will result in a casting with more subtle colors. Often only 5 to 10% of an intensely colored frit mixed with fine clear frit gives wonderful results.



Temporarily remove the rod and plug from the mold. Add just enough frit to the mold so that, when the plug and rod are replaced, the plug's bottom is just above the frit. Hold the plug in place and loop the twisted wire ends over the rod.

Use a small ruler to center the plug along the rod and continue

Fill Weights

Design	Amount of Glass
Round	500 grams
Square	250 grams
Curve	400 grams

Casting Schedule*

Segment	Ramp	Temperature	Hold
1	300ºF/165ºC	1250ºF/675ºC	30 minutes
2	300ºF/165ºC	1410-1430ºF/765-775ºC	30-60 minutes
3	AFAP	960ºF/515ºC	60 minutes
4	50ºF/30ºC	800ºF/425ºC	None
5	100ºF/60ºC	600ºF/315ºC	Off. No venting

* Schedule for COE 96. For COE 90, increase casting temperature by 25ºF/15ºC. AFAP means "As Fast As Possible", no venting.

adding frit evenly around the plug, making sure the plug remains centered, straight up-and-down, and hangs freely. Mound the glass away from both the plug and the mold's sides.

Firing

Fire according to the Casting Schedule attached. The finished piece's thickness and variations in thickness accounts for the long annealing cycles.

There might be some casting spurs created during the firing. If there are spurs on the inner surface, use a diamond, half-round hand file or a sickle stone to remove them. If there are spurs on the casting's outer edge, remove them with a diamond pad or power grinder. Re-prime the mold, place the casting back into the mold, and fire according to the Tack Fuse/Fire Polish Schedule. It is not necessary to reinsert the plug.

Variations

The candle holders can be embellished with frit balls, slumped rods, frit, or other castings. So the candle holder doesn't deform during the tack fuse firing, re-prime the mold and place the candle holder back into the freshly primed mold. It is not necessary to reinsert the plug.

Arrange the embellishments, secure in place with small dabs of white glue, and fire according to the Tack Fuse/Fire Polish Schedule.

The candle holders make great flower holders, too. Secure a floral pin frog in the depression with florist clay.

Tack Fuse/Fire Polish Schedule*

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

* Schedule for COE 96. For COE 90, increase casting temperature by 25ºF/15ºC. AFAP means "As Fast As Possible", no venting.

Fiber Paper Template