



Gem Top Tea Lights

Medium mesh frit is “sugar fired” to the tops of our 3” Square Candle Holders. It is a simple technique with impressive results.



To make these Gem Top Tea Lights, we follow the same procedure as described in the “Candle Basics” document. Once the mold has been fired, there is an additional step: The candle holder is left in the mold along with the plug, and the gem top layer is added.

Preparing the Mold

Like all of Colour de Verre’s molds, the 3” Square Candle Holder 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 advan-

tages 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 Learn 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 5 1/4 by 1 7/8” (134 by 48mm) piece of 1/16” fiber paper. (A template can be found below.) Apply a 1/4” 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 bottom. Smooth the glued edges against the plug. Let dry. Position the high-temperature wire 1/4” 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.

If you followed Method 1 and used Hotline Primo Primer, the bottom of the plug has been pro-

Availability

Colour de Verre molds are available at fine glass retailers and many online merchants including our online store, www.colourdeverre.com.

Tools

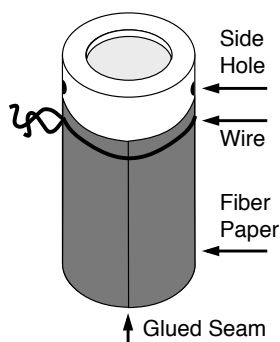
- ✓ Colour de Verre Candle Holder mold
- ✓ Primer brush
- ✓ Digital scale

Supplies

- ✓ Hotline Primo Primer™ or MR-97 Boron Nitride
- ✓ Assorted frits
- ✓ 1/16” Fiber paper
- ✓ High temperature wire

tected 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 ready to be used.

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

The 3" Square Candle Holder looks best when it is filled with 250 grams of frit. (We refer to this as the "fill weight.")

The first layer is to be composed of fine mesh frit. Create your own mixture or consider using the mixtures outlined in the Color Combinations table. If you do decide to create your own mixture, note:

- Using fine frit results in far less casting spurs and cold work than using medium or coarse frit.
- The candle holder will be over an inch thick in places. So the final piece isn't too dark, make sure your frit mixture is "diluted" with a large amount of Clear or Water Clear frit.



Color Combinations

Frit Colors	Percentage	Colored Frit	Clear Frit
Pastel Green, Flame Opal, Persimmon Opal, or Marigold Opal	5 - 8%	25 grams	225 grams
Tangerine, Lime, Yellow, Grenadine, or Pale Blue	10%	50 grams	200 grams

Casting Schedule*

Segment	Ramp	Temperature	Hold
1	300°F/165°C	1250°F/675°C	30 minutes
2	300°F/165°C	1410-1430°F/765-775°C	30-60 minutes
3	AFAP	960°F/515°C	60 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 25°F/15°C. AFAP means "As Fast As Possible", no venting.

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 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.

First Firing

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

Creating the Gem Top

Do not remove the fused candle holder from the mold. Do not remove the plug from the candle holder. The gem top is

mixture of the same color frits used in the base. However, this mixture is of medium mesh frit and is mixed in a 50/50 ratio. Mix 20 grams of Water Clear medium frit and 20 grams of the medium base color frit. Slide the steel rod out of the plug and sprinkle the medium frit mixture over the cast piece's surface. Fire according to the Tack Fuse/Fire Polish Schedule.



When the kiln cools, remove the plug from the casting and, then, remove the casting from the mold. Use a diamond sanding block to lightly smooth the outer edge. If needed, use a diamond half round to gently smooth the inner surface.

Variations

- Use medium Water Clear irid frit in the gem top mixture rather than just Water Clear frit. This will create more sparkle.
- Use the same technique with our Round or Curve Candle Holder designs. The Round requires 90 grams of gem top mixture. The Curve requires 70 grams.



Snow Candles

Another wonderful variation is to create candle holders entirely out of medium Clear or medium Clear Iridized frit fired only to the point at which the frit particles tack fuse together but don't entirely melt. The result resembles candle holders carved from snow. They are the perfect accent to a winter holiday table.



Tack Fuse/Fire Polish 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	60 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 25°F/15°C. AFAP means "As Fast As Possible", no venting.

Fiber Paper Template

Prepare the Square, Round, or Curve Candle Holder mold as usual. Fill the mold with medium Clear or medium Clear Iridized frit. Since the frit isn't to be completely melted, less frit is used. See the table below.

Snow Candle Fill Weights

Design	Fill Weight (grams)
Round	375
Square	190
Curve	300

Arrange the frit so the top surface is flat and level. If extra snow sparkle is desired, sprinkle a little crushed dichroic-on-clear sheet glass on top of the medium frit.

Fire the candle holder mold according to the Snow Candle Firing Schedule.



Snow Candle Firing Schedule*

Segment	Ramp	Temperature	Hold
1	300°F/165°C	1270°F/685°C	20 minutes
2	AFAP	960°F/515°C	60 minutes
3	100°F/60°C	600°F/315°C	Off. No venting

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