



# BULLSEYE

GLASS CO.

## TIPS FOR USING BULLSEYE SLUMPING MOLDS

Bullseye slumping molds are slipcast from a specially formulated clay body, have an exceptionally smooth surface, accept kilnwash uniformly, and do not crack under repeated usage if handled properly. Some artists report that molds need no recoating after months and years of use, if prepared with Bullseye Shelf Primer and used properly. See our website or catalog for the current selection of Bullseye slumping molds.

### MOLD PREPARATION

If you are using Bullseye Shelf Primer for your mold separator, prepare it as usual, mixing 5 parts water with one part dry powder (by volume). Paint the mold with 5 coats of primer.

If you are kiln-drying the molds, use a slower rate of firing than you would for your mullite kiln shelf. Heating a wet mold too rapidly can cause it to crack. We take about 45 minutes to fire damp molds up to 500°F (~260°C). Hold at this temperature for about 20 minutes. This is for an average-sized mold. Smaller molds may be fired slightly faster, larger molds more slowly.

As long as the primed surface remains free of chips and scratches and the slumping temperature does not exceed 1250°F (~676°C), the mold should serve for many firings. (On our production firings we have reused one set of molds at least 30 times without re-preparing). This is especially true where the slumping profile is a gentle curve, paired with relatively low process temperatures and hold times. Mold profiles with steep sides or inset areas, combined with hotter and longer process holds, will benefit from re-preparation as needed. To do this, just gently buff off the old primer with a dry scrub pad and apply new primer as above.

With any new mold, we suggest that you first fire a simple, inexpensive glass blank to determine the correct cycle before firing important projects.

Extra Tip 1: Elevate slumping molds from the floor of your kiln or kiln shelf to promote better air and heat circulation and, therefore, more uniform heating and cooling for the glass.

Extra Tip 2: For easy future identification, use a pencil to mark the style number on the side of the mold.

### SLUMP FIRING

The temperature and time it will take to successfully slump a glass piece depends on the diameter of the mold, the depth of the slump, and the weight of the glass. With so many variables, it is impossible to recommend a single firing schedule appropriate for all sizes and shapes of finished objects.

In our kilns we use a narrow range of process temperatures and hold times, from 1140°F (616°C) with a 5-minute hold for the shallowest molds like #8722, to 1250°F (677°C) with a 30-minute hold for molds with very steep sides (like #8665).

Here is a typical schedule we would use for slumping a piece that is 6mm thick and 12" in diameter into a medium-depth mold:

RATE (DEGREES PER HOUR)	TEMPERATURE	HOLD
300°F (167°C)	1220°F (660°C)	10-15 min (monitor visually)
AFAP*	960°F (516°C)	1 hour
100°F (56°C)	700°F (371°C)	1 minute

Kiln is off. Cool to room temperature with kiln door closed.

\*AFAP: As fast as possible with kiln door closed

Here is an alternative schedule for a similarly sized piece, requiring a more conservative schedule. In this case, the piece is 12" in diameter, but with a thickness varying from 6-9mm, due to pieces of sheet glass having been tack-fused previously to the surface of a 6mm base.

RATE (DEGREES PER HOUR)	TEMPERATURE	HOLD
150°F (83°C)	1220°F (660°C)	10-15 min (monitor visually)
AFAP*	960°F (516°C)	2 hours
50°F (28°C)	700°F (371°C)	1 minute

Kiln is off. Cool to room temperature with kiln door closed.

\*AFAP: As fast as possible with kiln door closed

An additional variable to consider is the proximity of the slumping mold and glass piece to kiln elements. As a preventive measure against thermal shock (of the glass or even of the mold itself), consider reducing the initial rate of heat to 200°F/hr (111°C/hr) or even slower in some cases. This is especially important, for example, if a larger mold is within 2 inches of kiln elements.

Successful slumped projects result from careful observation and note taking. The schedules shown above are just examples of what works in our kilns (Paragon GL24 with top, side and door elements). Watch your slumping project at top or process temperature in your own kiln, then modify rates and times to conform to your particular kiln and project.