

GLASS-CAST™ 400 INVESTMENT



An Economical Mold Material with Added Strength

Glass-Cast 400 investment is a stronger, economical mold material. It provides added strength for the glass artist that struggles with mold integrity due to mold size or process intensity.

Typical Material Properties*

Water/Powder Ratio	34/100
Pour Time	10-11 minutes
Set Time	<20 minutes
Slump	4½-5 inches
Green Compressive Strength	680 psi
Post Fired Compressive Strength	100 psi
Mixed Density	1.82 g/ml
Permeability (Darcy)	0.036
Maximum Casting Temperature	1540 °F (838 °C)

*These results are based on the testing methods, frequency and procedures of Ransom & Randolph or its approved suppliers. The levels referenced herein are only for general guidance and do not constitute a firm specification.

Mold Making

- Mix 100 parts Glass-Cast powder to the appropriate parts water by weight. Mix for 2-3 minutes.
Note: R&R recommends mechanical mixing to achieve the best mixing action. It is possible (but not required) to vacuum the mix until the investment rises and breaks to eliminate entrapped air before pouring around the pattern.
- Pour the Glass-Cast mold material down the side of the flask or mold frame until the patterns are covered to an appropriate depth. This depth will vary depending on the size of glass casting and the strength of the mold material you use.
Note: It is possible (but not required) to vibrate or vacuum the mold to remove air bubbles, which may adhere to the patterns. This operation normally takes 1-1½ minutes.
- R&R recommends that the mold then sit a minimum of 1 hour after it has set, before moving onto pattern removal.

Pattern Removal

Re-usable Patterns

After waiting a minimum of 1 hour, re-usable patterns can be physically removed from the mold.

Wax Patterns

Two methods of wax removal are commonly used: dry dewax and steam dewax. For dry dewaxing, place the mold into a kiln or furnace at a temperature of 300-350 °F (149-177 °C) and hold for 3-4 hours. For steam dewaxing, place the mold into the steam dewaxer. Steam dewax only for the time required to remove the wax and no longer. The amount of time required to dewax the molds will vary depending on the size of the mold. After steam dewaxing, it is recommended to immediately move to the curing of the mold.



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Sculptures cast using Glass-Cast 400 investment. Credit (L to R):
Waterwings by Carol Milne (www.carolmilne.com),
Slanted Pot by Nathan Sandberg (www.nathansandberg.com)

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Mold Curing

After the pattern is removed, place the mold into a kiln or furnace at a temperature of 300-350 °F (149-177 °C) and hold until the water is removed from the mold. The temperature of the mold can then be raised to desired casting temperature at a rate of 150-200 °F (66-93 °C) per hour.

Glass Application

Once the pattern has been removed, glass frit can be placed into the mold at any time during the process. The glass can then be heated at the same time as the mold. When crucible casting, it is important to have all water removed from the mold before casting. It is recommended that mold temperature be at least the desired annealing temperature of the glass.

Storage

Close the protective bag tightly in the container of unused investment powder and close the container when not in use. Always store investment in a dry area.

Safety

North America: Danger. Contains crystalline silica. May cause cancer by inhalation. Causes damage to lungs through prolonged or repeated exposure by inhalation. See SDS for more information.

EU: Danger. Contains respirable crystalline silica. Causes damage to lungs through prolonged or repeated exposure. See SDS for more information.

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