IsoMold CMR 3001

IsoMold CMR 3001 is used to make molds of detailed masters that contain some undercuts. IsoMold CMR 3001 was specifically designed to be used with pigmented and non-pigmented concrete. It has excellent release characteristics and durability. IsoMold CMR 3001 is a two-part polyurethane molding system. IsoMold CMR 3001 is mixed one-to-one by volume and cures at room temperature. IsoMold CMR 3001 cures to a soft (Shore A30 ± 2), rubber.

APPLICATIONS

- Concrete casting applications
- Point of Purchase Displays
- Sculpture Repoductions

PRODUCT ADVANTAGES

- Convenient 1:1 mixing ratio
- Excellent release characteristics
- High tear strength and elongation
- Low shrinkage
- Picks up fine detail in molding/casting applications

*Values given are not intended to be used in specific preparation

Component Properties	
Color - ISO	Cololess - Pale Yellow
Color - POL	Gray, white
Mixed Viscosity - ASTM D-2196 - (74°F)	2200 cps
Viscosity - ASTM D-2196 - 74°F, ISO	950 - cps
Viscosity - ASTM D-2196 - 74°F, POL	650 - cps
Weight per gallon - ISO	8.1
Weight per gallon - POL	8.1
Reactivity Profile	
Ratio by Weight - ISO:POL	1 - 1
Ratio by Volume - ISO:POL	1 - 1
POL Temperature	65 - 75 °F
ISO Processing Temperature	65 - 75 °F
Mix Time - by Hand	1 - 2 Minutes
Pot Life - 100g	15 - 17 Minutes
Gel Time - 100 gram sample, 74°F	25 - 30 Minutes
Demold Time	16 - 24 Hours
Initial Cure Time	48 - 72 Hours
Full Cure	7 Days
Typical Physical Properties	
Hardness - ASTM D2240 - Shore A	28 - 32 Shore A
Tear Strength - ASTM D624, Die C	85 pli
Tensile Modulus - ASTM D412	120 psi
Tensile Modulus - ASTM D412 - 100%	110 psi
Tensile Modulus - ASTM D412 - 200%	180 psi
Tensile Modulus - ASTM D412 - 300%	220 psi
Tensile Strength - ASTM D412	400 psi
Elongation - ASTM D412	600 %
Linear Shrinkage - ASTM D2566	0 %

RECOMMENDED HANDLING INSTRUCTIONS

Isotec® International's Recommended Application and Handling Instructions
-Use only in well-ventilated areas.
-Wear chemically resistant rubber gloves, safety glasses, and an apron.
-Avoid prolonged or repeated contact with skin.
-In case of skin contact, wipe affected area with isopropyl alcohol, followed by soap and water.
-In case of eye contact, flush eyes with water for 15 minutes and consult a physician.

-If swallowed or comes into contact with eyes, seek medical attention immediately.

To achieve the best results:
-Remove any air bubbles entrained in the resin or mixture with a vacuum.
-Thoroughly scrape the sides and bottoms of all mixing containers.
-Accurately measure the materials at the correct ratio.
-Ensure the ISO and POL are at or near normal room temperature (74°F) prior to use.

Prepare Master and Mold Housing
First, clean and dry your master thoroughly. If the master has a porous surface (clay, concrete, plaster, etc.) or is made of sulfur-based clay, you must seal it. You can use polyurethane varnish, polyurethane sealant, or paste wax to seal your master. Next, anchor your master and seal the base so that IsoMold CMR 3001 does not leak under your master. A hot glue gun works to anchor and seal the base at the same time. Also, you should seal all of your mold housing connections with sulfur-free clay or hot glue. Then, apply an appropriate release agent to the master and interior of the mold housing. Apply release agent sparingly, while coating all surfaces of the master. Too much release agent may cover the details of the master. You should allow the release agent to dry approximately 10 minutes before you pour your mold.

Measure ISO (Prepolymer) and POL (Curative)
Note: IsoMold CMR 3001 provides approximately 15-17 minutes for you to mix and pour the mold before it begins to gel. Make sure that POL (Curative) and ISO (Prepolymer) are room temperature before mixing them. Please note that in cold weather it may take up to 24 hours for the POL (Curative) and ISO (Prepolymer) to reach room temperature. Using two clean, dry, plastic containers of equal size, measure equal amounts of the POL (Curative) and the ISO (Prepolymer).

Mix POL (Curative) and ISO (Prepolymer)
After you prepare the master and mold housing and measure the POL (Curative) and ISO (Prepolymer), you are ready to pour the POL (Curative) and ISO (Prepolymer) into another clean, dry, plastic container. Scrape the POL (Curative) and ISO (Prepolymer) containers to move all of the material into the mixing container. Combine the two ingredients for several minutes until no color striations are visible. Be sure to scrape the sides and bottom of the mixing container while combining the two ingredients. You must mix the POL (Curative) and ISO (Prepolymer) completely so that IsoMold CMR 3001 will cure correctly. If air bubbles form during mixing, you should degas the mixture to remove them.

Pour Mold
To ensure that no air bubbles form over the details of your master, you can brush a thin base coat onto the master and then pour the rest of the IsoMold CMR 3001. The best way to pour a mold is to tilt your mold slightly and pour into one spot at the corner of the mold, allowing the material to cover your master slowly like the flow of lava. When you have finished pouring the mold, you may lightly spray release agent on the top of IsoMold CMR 3001 to break any air bubbles that have risen.

Demold and Cure Mold
Once you have poured your mold, allow the mold to cure 16-24 hours before demolding. To prolong the life of the mold, allow it to cure for 3–4 days before using it.

Cure and Thermal Shrinkage
IsoMold CMR 3001 is formulated for Room Temperature (RT) Cure. Shrinkage of 0-0.16% may occur if the material is processed above room temperature. Other conditions that may cause mold shrinkage: prolonged use, storing the RT cured mold at high temperatures, or excessive heat generated during use.

THOROUGHLY MIX THE “POL” SIDE PRIOR TO USE
This ensures the material is homogenous and parts made will have the correct hardness and physical properties.

STORAGE

Keep the IsoMold CMR 3001 container tightly closed when not in use and store at temperatures between 50–100° F (10–37° C).
Do not expose the POL (Curative) or ISO (Prepolymer) to moisture. If moisture contaminates IsoMold CMR 3001, it will not cure and/or cause foaming. If these storage requirements are met, IsoMold CMR 3001 carries a shelf life warranty of six months.

SAFETY

-Refer to the product SDS for all relevant safety information.

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