

IsoMold CMR 7001

IsoMold CMR 7001 is a two-part polyurethane molding system that is mixed one-to-one by volume and cures at room temperature. IsoMold CMR 7001 contains no fillers and cures to a firm Shore A 70 ± 2 within 48 hours at 23°C. IsoMold CMR 7001 is used to make molds of detailed masters that contain no or shallow undercuts. It is specifically designed for use in concrete casting applications. It has excellent release from pigmented or unpigmented concrete.

APPLICATIONS

- Pigmented Concrete Molds & Formliners
- Precast Concrete Moldings
- Sculpture Reproductions
- UnPigmented Concrete Molds & Formliners

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	Colorless - pale yellow
Color - POL	Gray
Specific Gravity - 74°F, ISO	1.07
Specific Gravity - 74°F, POL	1.00
Mixed Viscosity - ASTM D-2196 - (74°F)	2080 cps
Viscosity - ASTM D-2196 - 74°F, ISO	4100 cps
Viscosity - ASTM D-2196 - 74°F, POL	1500 cps

Reactivity Profile

Ratio by Weight - ISO:POL	0.98:1
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	18 - 20 Minutes
Gel Time - 100 gram sample, 74°F	30 - 35 Minutes
Demold Time	16 - 24 Hours
Initial Cure Time	48 - 72 Hours
Full Cure	7 Days

Typical Physical Properties

Hardness - ASTM D2240 - Shore A	68 - 72 Shore A
Tear Strength - ASTM D624, Die C	220 pli
Trouser Tear - ASTM D624, Die T	40 pli
Tensile Modulus - ASTM D412	1250 psi
Tensile Modulus - ASTM D412 - 100%	570 psi
Tensile Modulus - ASTM D412 - 200%	760 psi
Tensile Modulus - ASTM D412 - 300%	950 psi
Tensile Strength - ASTM D412	1200 psi
Elongation - ASTM D412	450 %
Rebound, Bayshore % - ASTM D2632	50 %
Linear Shrinkage - ASTM D2566 - 2 weeks @ 140F	0.19 %
Compression Set - ASTM D395 - Method B, 22 hours @ 140°F	56 %
Modulus of Elasticity Under Compression - ASTM D695	4900 psi

Compressive Strength - ASTM D695 - @ 10% Strain	360 psi
Compressive Strength - ASTM D695 - @ 20% Strain	700 psi
Compressive Strength - ASTM D695 - @ 30% Strain	1160 psi

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.

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.

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 (~72°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 7001 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 POL (Curative) and ISO (Prepolymer)

Note: IsoMold CMR 7001 provides approximately 18-20 minutes for you to mix and pour the mold before it begins to gel. Make sure that the POL (Curative) and ISO (Prepolymer) are mixed well and are at 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 7001 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 7001. 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 7001 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 7001 is formulated for Room Temperature (RT) Cure. Shrinkage of 0.19% 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.

Please refer to Isotec® International's Application Bulletin MM-1 for more information on using the IsoMold CMR 7001, or any of our other mold making resins or accessories.

STORAGE

Keep the IsoMold CMR 7001 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 7001, it will not cure correctly. IsoMold CMR 7001 carries a shelf life warranty of six months for any unopened material that are stored at the temperatures indicated above.

SAFETY

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

Date Modified 2/6/2018

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