



# FORTIMOLD SX-40

## TECHNICAL DATA SHEET

**FORTIMOLD SX** products are two-part urethane mold-making systems formulated to provide excellent elongation and tear strength. The products have a lower viscosity when the part A and part B components are in their liquid state, making for ease-of-use when mixing and pouring.

### APPLICATIONS

FortiMold SX-40 is used to make molds of detailed masters that do not contain undercuts. FortiMold SX-40's physical properties make it ideal for making concrete patterns and form liners.

### CHARACTERISTICS

FortiMold SX-40 is a two-part polyurethane molding system. FortiMold SX-40 is mixed one-to-one by volume (or one-to-one by weight) and cures at room temperature. FortiMold SX-40 cures to a hard (Shore A40±2), gray rubber.

### INSTRUCTIONS FOR USE

**MASTER AND MOLD HOUSING:** First, clean and dry your master thoroughly. If the master has a porous surface (clay, concrete, plaster, ect.) 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 FortiMold SX-40 doesn't leak under your master. Hot glue works to anchor and seal the base at the same time. Also, you should seal your entire 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 CURATIVE AND PREPOLYMER:** Note: FortiMold SX-40 provides approximately 15 minutes for you to mix and pour the mold before it begins to gel. Make sure that the curative and prepolymer are room temperature before mixing them. Please note that in cold weather it may take up to 24 hours for the curative and prepolymer to reach room temperature. Using two clean, dry, plastic containers of equal size, measure equal amounts of the curative (part A) and the prepolymer (part B).

**MIX CURATIVE AND PREPOLYMER:** After you prepare the master and mold housing and measure the curative and prepolymer, you are ready to pour the curative and prepolymer into another clean, dry, plastic container. Scrape the curative and 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 curative and prepolymer completely so that FortiMold SX-40 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 into the master and then pour the rest of the FortiMold SX-40. 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 FortiMold SX-40 to break any air bubbles that have risen.

**DEMOLD AND CURE MOLD:** Once you have poured your mold, allow the mold to cure 16 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:** FortiMold SX-40 is formulated for room temperature (RT) cure. Shrinkage of 0-0.125% 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. Shrinkage depends on the temperature and duration of exposure.



## PROPERTIES

### ***CURATIVE (PART A) AND PREPOLYMER (PART B)***

The following table lists the properties of the curative and prepolymer of FortiMold SX-40 before they have been mixed.

Property	Curative (Part A)	Prepolymer (Part B)
COLOR	Gray	Amber
MIX RATE BY WEIGHT	100	100
MIX RATIO BY VOLUME	1	1
SHELF LIFE	12 Months	12 Months
SPECIFIC GRAVITY @ 75°F (24° C)	1.019	1.023
VISCOSITY @ 75° F (24° C), CPS	750	1200

### ***MIXED CURATIVE (PART A) AND PREPOLYMER (PART B)***

The following table lists the properties of the curative and prepolymer of FortiMold SX-40 after they have been mixed.

Property	Time	Temperature
MIX TIME*	1-2 Minutes	75° F (24° C)
POT LIFE*	15 Minutes	75° F (24° C)
GEL TIME*	20 Minutes	75° F (24° C)
CURE TIME*	24 Hours	75° F (24° C)
DEMOLD TIME*	24 Hours	75° F (24° C)

\* Mix time, pot life, gel time, cure time, and demold time vary depending on mass and component temperature.

### ***CURED FORTIMOLD SX-40***

The following table lists the properties of FortiMold SX-40 after it has cured.

Property Cured	Product
COLOR	GRAY
ELONGATION, %	900
MODULUS, PSI	
100%	120
300%	210
REBOUND, %	56
REVERSE TEMPERATURE	270° F (132° C)
SHORE HARDNESS	A50 ± 2
SPECIFIC GRAVITY	1.03
TEAR, DIE C, PLI	60 ± 10
TEAR, SPLIT, PLI	25 ± 2
ULTIMATE TENSILE, PSI	300 ± 50

## STORAGE & HANDLING

Keep the FortiMold SX-40 container tightly closed when not in use and store at temperatures between 60-90° F (16-32° C). Do not expose the curative or prepolymer to moisture! If moisture contaminates FortiMold SX-40, it will not cure. If these storage requirements are met, FortiMold SX-40 carries a shelf life warranty of six months.

Be sure to read *Material Safety Data Sheet* that comes with FortiMold SX-40. When working with FortiMold SX-40, please observe the following safety precautions.

- Use only in well-ventilated areas.
- Wear safety glasses, chemical-resistant rubber or plastic gloves, and an apron.
- Avoid prolonged or repeated contact with skin.
- In the case of skin contact, wipe affected area with isopropyl alcohol, followed by soap and water.
- In the case of eye contact, flush eyes with water for 15 minutes and consult a physician.
- If swallowed, drink one to two glasses of water and seek medical attention immediately.

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