

# Formlastic™ 48 and 60

## Urethane Moldmaking Rubbers



www.smooth-on.com

### PRODUCT OVERVIEW

Formlastic™ 48 and 60 filled urethane rubbers are used to make molds for production casting of concrete. They feature low viscosity for easy mixing / pouring and cure with minimal bubble entrapment. Mix ratio is 1A:1B by volume, and the rubbers cure in 24 hours to an ultimate Shore hardness of either Shore 48A or 60A. Cured rubber is dimensionally stable (low shrinkage), offers good wear resistance and will render color accurate concrete castings.

**IMPORTANT: This product does not contain mercury or quartz silica.**

### TECHNICAL OVERVIEW

	A:B Mix Ratio by Volume	A:B Mix Ratio by Weight	Specific Gravity (g/cc) (ASTM D-1475)	Specific Volume (cu. in./lb.)	Pot Life (ASTM D-2471)	Shore A Hardness (ASTM D-2240)	Tensile Strength (ASTM D-412)	100% Modulus (ASTM D-412)	Elongation at Break % (ASTM D-412)	Die B Tear Strength (ASTM D-624)
Formlastic™ 48	1:1 pbv	100:118 pbw	1.14	24.3	25 min.	48A	700 psi	111	1,250%	98 pli
Formlastic™ 60	1:1 pbv	100:118 pbw	1.14	24.3	40 min.	60A	1025 psi	230	1,000%	146 pli

**Color:** Off White

**Shrinkage:** < .001 in./in.

**Cure Time:** 24 hours

**Mixed Viscosity:** 3,000 cps

\*All values measured after 7 days at 73°F/23°C

### PROCESSING RECOMMENDATIONS

#### START BY PREPARING YOUR MODEL...

**Preparation** - Store and use at room temperature (73°F/23°C). These products have a limited shelf life and should be used as soon as possible. Environmental humidity should be as low as possible. Good ventilation (room size) is essential. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk.

**Some Materials Must Be Sealed** - Models with porous surfaces (gypsum plasters, concrete, wood, stone, etc.) must be sealed prior to applying a release agent. **Sonite™ Wax** (available from Smooth-On distributors) is a proven sealer for porous surfaces.

**Non-Porous Surfaces** - Metal, glass, hard plastics, sulfur free clays, etc. require only a release agent.

**Applying A Release Agent** - Use a release agent made specifically for mold making (**Universal Mold Release™** available from Smooth-On distributors). A liberal coat of release agent should be applied onto all surfaces that will contact the rubber.

**IMPORTANT:** To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces of the model. Follow with a light mist coating and let the release agent dry for 30 minutes. Because no two applications are quite the same, a small test application to determine suitability for your project is recommended if performance of this material is in question.

#### MEASURING & MIXING...

Liquid urethanes are **moisture sensitive** and will absorb atmospheric moisture. Mixing tools and containers should be clean and made of metal or plastic. Materials should be stored and used in a warm environment (73°F/23°C).

**Important; Pre-Mix Part B Before Using.** Using a flat edge paddle or a drill mixer, scrape sides and bottom of container several times.

**IMPORTANT:** Shelf life of product is reduced after opening. Remaining product should be used as soon as possible. Immediately replacing the lids on both containers after dispensing product will help prolong the shelf life of the unused product. **XTEND-IT™ Dry Gas Blanket** (available from Smooth-On) will significantly prolong the shelf life of unused liquid urethane products.

## Safety First!

The Material Safety Data Sheet (MSDS) for this or any Smooth-On product should be read prior to use and is available upon request from Smooth-On. All Smooth-On products are safe to use if directions are read and followed carefully.

### **Be careful.**

**Part A** is an MDI prepolymer. Vapors, which can be significant if material is heated or sprayed, cause lung damage and sensitization. Use only with adequate ventilation. Contact with skin and eyes may cause severe irritation. Flush eyes with water for 15 minutes and seek immediate medical attention. Remove from skin with waterless hand cleaner followed by soap and water. Prepolymers contain trace amounts of TDI which, if ingested, must be considered a potential carcinogen. Refer to MSDS.

**Part B** is irritating to the eyes and skin. If contaminated, flush eyes with water for 15 minutes and seek immediate medical attention. Remove from skin with soap and water. When mixing with Part A follow precautions for handling isocyanates.

**Important:** The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained from the use thereof, or that any such use will not infringe upon a patent. User shall determine the suitability of the product for the intended application and assume all risk and liability whatsoever in connection therewith.

After dispensing equal amounts of Parts A and B into mixing container, mix thoroughly for at least 3 minutes making sure that you scrape the sides and bottom of the mixing container several times.

**If Mixing Large Quantities** (16 lbs./7 kgs. or more) at one time, use a mechanical mixer (i.e. Squirrel Mixer or equal) for 3 minutes followed by careful hand mixing for one minute as directed above. Then, pour entire quantity into a new, clean mixing container and do it all over again.

## POURING...

For best results, pour your mixture in a single spot at the lowest point of the containment field. Let the rubber seek its level up and over the model. **A uniform flow will help minimize entrapped air.** The liquid rubber should level off at least 1/2" (1.3 cm) over the highest point of the model surface.

## CURING & PERFORMANCE...

**Curing** - Allow rubber to cure a minimum of 24 hours at room temperature (73°F/23°C) before using. Cure time can be reduced with mild heat or by adding Smooth-On "Kick-It™" Cure Accelerator. Do not cure rubber where temperature is less than 65°F/18°C.

**Post Curing** - Optional . . . Following a 24 hour cure, heating the rubber to 150°F (65°C) for 4 to 8 hours will increase physical properties and performance.

**Using The Mold** - A release agent should be applied to the mold before each casting. **Aquacon™ Water Based Release Agent** (available from Smooth-On distributors) is recommended for releasing abrasive materials like **concrete**.

**Performance & Storage** - Fully cured rubber is tough, durable and will perform if properly used and stored. Molds should be stored on a level surface at room temperature in a dry environment. Do not stack molds, expose them to moisture or UV light for prolonged periods.



**Call Us Anytime With Questions About Your Application**

Toll-free: **(800) 381-1733** Fax: **(610) 252-6200**

The new [www.smooth-on.com](http://www.smooth-on.com) is loaded with information about mold making, casting and more.