

VFI® -168 60 A POLYURETHANE CASTING RUBBER

VFI-168 60 A Polyurethane Casting Rubber is a fast-setting urethane rubber with good rebound properties. The urethane's viscosity allows for easy processing when pouring or injecting as well as the creation of larger castings that maintain final properties. VFI-168 has superior elongation, and cures at room temperature with no post-curing necessary. With a high amine content, the rubber provides good chemical resistance and low-temperature flexibility for extended use of a mold or part. The material's fast-setting capabilities allow for a quick demold time that increases part production.

- Excellent physical properties for making industrial parts and prototypes
- Highly durable, versatile urethane with good rebound properties
- 1A:1B by volume mix ratio for easy processing and to avoid costly off-ratio mixes
- Room temperature cure eliminates the need for post-curing
- Great chemical resistance and low-temperature flexibility

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Shore Hardness	ASTM D2240	60 ± 2
Tensile Strength	ASTM D412	660 psi
Elongation % at Break	ASTM D412	950%
Tear Strength (Die C)	ASTM D624	165 pli
Shrinkage (12" x 1/2" x 1/2")	ASTM D2566	N/A
Cured Color	N/A	Neutral

LIQUID PROPERTIES	TEST METHOD	TEST RESULTS
Mix Ratio by Volume (A:B)	N/A	1A:1B
Mix Ratio by Weight (A:B)	N/A	1.04A:1.00B
Weight per Gallon A Side	ASTM D1475	9.085 lb/gal
Weight per Gallon B Side	ASTM D1475	8.72 lb/gal
Mixed Weight per Gallon	ASTM D1475	8.90 lb/gal
Specific Volume	N/A	25.96 in ³ /lb
Viscosity A Side (cps @ 77°F)	ASTM D2196	2,000 cps
Viscosity B Side (cps @ 77°F)	ASTM D2196	1,500 cps
Mixed Viscosity (cps @ 77°F)	ASTM D2196	3,000 cps
Pot Life (150g mass @ 77°F)	N/A	N/A
Gel Time (150g mass @ 77°F)	N/A	3 minutes
Demold Time @ 77°F	N/A	20 minutes
Full Cure	N/A	10 days

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THICKNESS REQUIREMENTS

There is no limit to thickness when using VFI-168, but if you are pouring or injecting less than 1/16th of an inch thick, you will have to post-cure the material. When casting by hand, pour the material into a single spot at the lowest point of the mold.

MOLD PREPARATION

All surfaces must be clean and free of dirt, debris, and oils that could contaminate the material. For proper demolding, the surface must be sealed with a release agent. A release agent will help extend the life of the mold and prevent unwanted adhesion. Compatible molds for casting include urethane and metal when properly prepared. The material can be used with platinum silicone molds but will create a surface tack, so it must be post-cured after demolding. You may heat the mold between 70°F-150°F to accelerate the curing process and achieve a quicker demold. However, heating the mold will shorten the pot life.

MIXING

Premix the B side (Poly) until uniform before combining with the A side (Iso). We recommend injecting this material due to the short working time, but it can also be hand-poured. When pouring by hand, pour 1 part B component into 1 part A component by volume, 1.00 parts B component to 1.04 parts A component by weight. Mix the material until uniform, making sure to scrape the sides and bottom of the container. You may mix smaller amounts by hand, but we recommend using a power mixer if you are using over ½ a gallon of material. Smaller amounts can be transferred into a new container and mixed again until uniform. The material must be fully mixed and used before the duration of the pot life, which will shorten at temperatures above 72°F.

POST-CURE

Allow the material to cure for at least 20 minutes at room temperature (77°F) before demolding. Thinner pours will need more time to cure to develop the necessary green strength to demold. It will reach full physical properties after 10 days at room temperature. To achieve final properties faster, the material can be post-cured in an oven at 150°F for 16 hours. When using a silicone mold, the material must be post-cured at room temperature for one day or at 150°F in an oven for 2 hours to remove surface tack.

STORAGE/SHELF LIFE

Store between 60°F - 90°F in a clean, dry building. The shelf life of unopened containers is 12 months after the date of manufacture. Once open, use immediately, but if storing after opening, both sides must be nitrogen purged.

PRECAUTIONS

VFI-168 contains isocyanate, which is irritating to the skin and toxic if inhaled. Avoid prolonged breathing of vapors or repeated skin contact. Use only with adequate ventilation. The material is not UV color stable and has no long-term UV testing. It is sensitive to moisture and cannot be cross-mixed with other materials. Do not thin or add foreign material to the product. See the Safety Data Sheet for complete safety instructions.