

VFI®-3181 80 A MDI MOLDING RUBBER

VFI-3181 80 A MDI Molding Rubber is a 1A:2B, versatile urethane rubber that has high durability to make strong, flexible concrete molds and form liners. MDI-based rubber is best used in controlled, high-production environments where little moisture interaction is involved. The material maintains a workable viscosity, allowing you to pour thin, intricate parts or large parts quickly. Its viscosity also helps dissipate air bubbles without using a vacuum chamber. An extended pot life provides ample time to work with the material. The standard color of VFI-3181 is green, but a neutral color (VFI-3183) is available.

- Captures excellent detail and texture for high-quality, repeatable results
- Superior physical properties for making concrete molds and form liners
- 80 A elastomer with excellent rebound properties for easier demolding
- Moderate viscosity for pouring thin, intricate parts or large parts quickly
- Removes air bubbles without the need for vacuum degassing
- Outperforms when casting pigmented and colored concrete
- Consistent results in large- or small-scale applications
- Easy processing at room temperature

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Hardness Shore A	ASTM D 2240	80 A
Tensile Strength	ASTM D 412	1,430 psi
Elongation	ASTM D 412	690%
Tear Strength	ASTM D 624	180 pli
Specific Volume	N/A	25.81 in ³ /lb
Shrinkage (12"x½"x½")	ASTM D 2566	<0.0010%

LIQUID PROPERTIES	TEST METHOD	TEST RESULTS
Specific Gravity A Side	ASTM D 1475	1.17 g/mL
Specific Gravity B Side	ASTM D 1475	1.04 g/mL
Mixed Specific Gravity	ASTM D 1475	1.08 g/mL
Ratio by Volume (A:B)	N/A	1A:2B
Ratio by Weight (A:B)	N/A	100A:178.85B
Viscosity A Side (cps @ 77° F)	ASTM D 2196	950 cps
Viscosity B Side (cps @ 77° F)	ASTM D 2196	1,050 cps
Mixed Viscosity (cps @ 77° F)	N/A	1,000 cps
Pot Life (150g mass @ 77° F)	N/A	30 min
Demold Time @ 77° F	N/A	16 hours

MANUFACTURER OF HIGH PERFORMANCE POLYMERS

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THICKNESS REQUIREMENTS

Pour the material in one spot at the lowest point of the mold until the desired thickness is reached. VFI recommends pouring at least $\frac{3}{8}$ of an inch thick.

MOLD PREPARATION

The molding surface must be clean, dry, and free of dirt, oils, and debris. Use only non-sulfurous clay on molds to prevent unwanted adhesion and improper cure. The molding surface must be fully sealed and non-porous. Use a release agent to prevent adhesion. We recommend using Chem-Trend MR-515 Aerosol or a similar release agent. Spray several layers over the entire mold, waiting for the surface to dry before adding more. The release will help protect and extend the life of the mold. Spraying too much release can produce a shiny/glossy surface on the rubber that will transfer over to future castings. The material is compatible with most molds as long as it is used with a proper release agent.

MIXING

The material should be at least 65°F before use for proper mixing and application. Mixing times may vary depending on volume and mixing method. Vacuum degassing can further reduce air entrapment but is not required.

1. Premix the B side (Poly) until uniform before combining it with the A side (Iso). Be sure to mix slowly to minimize air entrapment.
2. Check the technical data sheet for the proper mix ratio by weight or volume and calculate the material needed on both sides.
3. Measure the A side into a clean mixing container.
4. Follow by measuring and adding the B side material into the same container.
5. Mix until uniform. Power mixing or meter mixing equipment is recommended for quantities over 1 gallon. Scrape the bottom and sides of the container to ensure a uniform mix is achieved.
6. Transfer to a new container and mix again before use. It must be fully mixed and poured before the end of the pot life.

POST CURE

Allow the rubber to sit at room temperature for a minimum of 16 hours before demolding. It will develop full physical properties after 7 days at room temperature. It is required that the rubber sits for 3 days at room temperature before use or shipping. When using the rubber for casting, apply a release agent before each use.

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. VFI-3181 does not need to be freeze protected and if it has frozen, bring it up to 65°F before use. Once open, use it immediately. If you plan to store open containers after use, both sides must be nitrogen purged.

PRECAUTIONS

This product contains isocyanate, which can irritate the skin and is toxic if inhaled as particulate matter. Avoid prolonged breathing of vapors and repeated skin contact. It is not UV color stable and has no long-term UV testing. Urethane is moisture-sensitive and may foam when exposed to too much moisture, so use VFI-3181 in a controlled, high-production environment to limit moisture interaction. Use only with adequate ventilation. Do not thin or add foreign material to the product. See the Safety Data Sheet for complete safety instructions.