VFI®-2151 50 A TDI MOLDING RUBBER

VFI-2151 50 A TDI Molding Rubber is a 1:1 by volume, MOCA-free urethane rubber for making durable molds. With excellent demolding characteristics that outperform most urethane rubber, VFI-2151 is a premium option when the amount of release used is the primary concern. Urethane rubber is ideal for mold applications where a certain detailed shape, contour, or curve is desired. It captures and reproduces exact textures and fine details that will transfer over to cast parts. With a workable viscosity, it removes trapped air and fills all necessary cavities without the use of a vacuum chamber or pressure pot. The standard color of VFI-2151 is blue, but a neutral color (VFI-2152) is available.

- Captures excellent detail and texture for high-quality, repeatable results
- Enhanced releasing properties that allow for easier demolding
- Workable viscosity reduces air bubbles and fills in voids
- Improved strength for better abrasion resistance and longer-lasting molds
- Decreased moisture sensitivity for extended working time
- Outperforms when casting pigmented and colored concrete
- Consistent results in large- or small-scale applications

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Shore Hardness	ASTM D2240	50 A
Tensile Strength	ASTM D412	805 psi
Elongation at Break	ASTM D412	1220%
Tear Strength (Die C)	ASTM D624	103 pli
Shrinkage (12" x 1/2" x 1/2")	ASTM D2566	<0.0010 in/in
Color	N/A	Blue

LIQUID PROPERTIES	TEST METHOD	TEST RESULTS
Mix Ratio by Volume	N/A	1A:1B
Mix Ratio by Weight	N/A	100A:99B
Weight per Gallon A Side	ASTM D1475	8.58 lb/gal
Weight per Gallon B Side	ASTM D1475	8.33 lb/gal
Mixed Weight per Gallon	ASTM D1475	8.45 lb/gal
Specific Volume	N/A	27.33 in^3/lb
Viscosity A Side (cps @ 77°F)	ASTM D2196	2,500 cps
Viscosity B Side (cps @ 77°F)	ASTM D2196	1,200 cps
Mixed Viscosity (cps @ 77°F)	ASTM D2196	2,500 cps
Pot Life (150g mass @ 77°F)	N/A	18 minutes
Gel Time (150g mass @ 77°F)	N/A	25 minutes
Demold Time @ 77°F	N/A	16 hours
Full Cure Time	N/A	7 days

VFI®-2151 50 A TDI MOLDING RUBBER

THICKNESS REQUIREMENTS

Pour the material into a single spot at the lowest point of the mold until the desired thickness is met. VFI recommends pouring at a minimum of ¾ of an inch thick. If pouring less than ¾ of an inch thick, we recommend using a higher shore A hardness scale rubber.

MOLD PREPARATION

All surfaces should be clean and free of oils, dirt, or debris. Use a non-hardening sulfur-free clay on molds to prevent unwanted adhesion and improper cure. Porous surfaces such as natural stone, wood, or concrete must be properly sealed for ease of demolding. VFI recommends using a mixture of 80% mineral spirits to 20% petroleum jelly by weight as a sealer. Apply several layers of the mixture with a small chip brush, waiting for each layer to dry before adding another. After sealing, spray a light misting of a release agent over the entire molding surface to prevent unwanted adhesion. We recommend using Chem-Trend MR-515 Aerosol or a similar release agent.

Non-porous surfaces only require the use of a release agent. Using a release agent helps to protect and extend the life of the mold. Avoid spraying too much release, as this can produce a shiny/glossy surface on the rubber that will transfer 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.

Thoroughly mix the POLY “B” component before mixing with the ISO “A” component. Usually, this takes a minimum of 3 minutes per “B” container with proper mixing equipment. Once the “B” component is thoroughly mixed, properly pour 1 part of the “A” component into 1 part of the “B” component by volume, 100 parts “A” component to 99 parts “B” component by weight. Thoroughly mix for at least 30 seconds while ensuring the mix is uniform and homogenous. Transfer into a new, clean container and mix again before use. Be sure to scrape the sides and bottom of the container for uniformity.

POST-CURE

Allow the rubber to sit at room temperature for a minimum of 16 hours before demolding. The rubber 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. If the cured rubber is used for casting, a release agent should be applied before each use. If the cured rubber is used for casting, a release agent should be applied before each use. Use a release agent from a reputable release company, such as Chem-Trend, Stoner Molding Solutions, or Cresset Chemical Co. Do not use a solvent-containing release, as it can distort (shrink or expand) the mold.

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 it immediately. If you plan to store open containers after use, both sides must be nitrogen purged to try to extend the material’s shelf life.

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. Urethanes are moisture sensitive and may bubble if exposed to too much moisture. Use only with adequate ventilation. Do not thin or add foreign material to the product. See the Safety Data Sheet for complete safety instructions.