

VFI®-4174 75 D FAST CASTING PLASTIC

VFI-4174 75 D Fast Casting Plastic is a two-component, 100% solids, fast-setting polyurethane plastic with a convenient 1A:1B mix ratio by weight and easier premixing. It offers a fast demold time that allows multiple parts to be made in one day to increase mold cycle times. The fast cure allows for pours between 1/8" to 1/4". This material is highly functional and easily machined with CNC or woodworking equipment. VFI-4174 is made to be poured and cured at room temperature for easier processing.

- Capable of casting at a thickness of 1/8 of an inch
- Extremely fast-setting material for quick turnaround on part making
- Compatible with rigid foams to make backfilled parts
- Produces durable and repeatable castings
- Neutral color that can easily be painted and primed after full cure
- Capable of being sanded and machined to a smooth, exact finish

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Shore Hardness	ASTM D2240	74 D
Tensile Strength	ASTM D638	5,000 psi
Tensile Modulus	ASTM D638	225,000 psi
Elongation at Break	ASTM D638	18%
Flexural Modulus	ASTM D790	221,000 psi
Izod Impact, Notched	ASTM D256	0.51 ft-lb/in
Linear Shrinkage	ASTM D2566	<0.02 in/in
Heat Deflection Temperature (@ 66 psi)	ASTM D648-18	128.12°F ± 2°F
Flame Test	UL 94-V0	No
Standard Cured Color	N/A	White

LIQUID PROPERTIES	TEST METHOD	TEST RESULTS
Mix Ratio by Volume	N/A	100A:115B
Mix Ratio by Weight	N/A	1A:1B
Weight per Gallon A Side	ASTM D1475	9.58 lb/gal
Weight per Gallon B Side	ASTM D1475	8.33 lb/gal
Mixed Weight per Gallon	ASTM D1475	8.91 lb/gal
Viscosity A Side	ASTM D2196	150 cps
Viscosity B Side	ASTM D2196	130 cps
Mixed Viscosity	ASTM D2196	150 cps
Pot Life	N/A	2 minutes
Gel Time	N/A	2:30 minutes
Demold Time	N/A	20 minutes
Full Cure Time	N/A	3 days

MANUFACTURER OF HIGH-PERFORMANCE POLYMERS
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THICKNESS REQUIREMENTS

We recommend pouring VFI-4174 at a minimum thickness of 1/8 inch with a maximum thickness of 2 inches. Anything thinner than 1/8" will require post-curing at 150°F for a minimum of 2 hours.

MOLD PREPARATION

A release agent is recommended for any molding application to extend the life of the mold, and for prototyping urethane molds, it is a requirement. Heated molds are not recommended for this product or any mold over 120°F. Do not use a two-part closed mold. Recommended mold materials include tin or platinum silicone.

MIXING

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 87.18 parts of "A" component into 100 parts of "B" component by volume, 1 part "A" component to 1 part "B" component by weight. Thoroughly mix for at least 30 seconds while ensuring that the mix is uniform and homogeneous.

POST-CURE

If pouring at less than 1/8" or not backing with foam, it must be post-cured at 150°F for a minimum of 2 hours. Castings should be kept in the mold until fully cured to prevent warping. Demold time is dependent on the volume of material used and pour thickness. Thin-walled parts may not cure as well without heat. Regardless of thickness, it will reach full properties within 3 days of curing.

STORAGE/SHELF LIFE

The material is sensitive to moisture. Store in a clean, dry place between 60°F-90°F. Do not preheat over 100°F without mixing. The shelf life of unopened containers is 6 months for the A side and 1 year for the B side from the date of manufacture. All containers must be sealed when not in use. Containers that have been opened should be used within one week. To prolong the shelf life of opened containers, it is recommended that a blanket of nitrogen be applied to the container or a desiccant cartridge be inserted into the container opening.

PRECAUTIONS

This product contains isocyanate, which may irritate the skin and is toxic if inhaled as particulate matter. Avoid prolonged breathing of vapors or repeated skin contact. Use only with adequate ventilation. Do not thin or add foreign material to the product. See the Safety Data Sheet for complete safety data.