VFI®-5106 6 PCF RIGID POLYURETHANE FOAM

VFI-5106 6 PCF Rigid Polyurethane Foam is a two-component, water-blown, expanding foam with good compression strength and structural integrity. With a slow initial rise, the foam has a generous work time, allowing parts to be hand poured or used in a machine injection system. Rigid foam is a great alternative to producing costly plastic parts and is highly machinable. Cast parts can be demolded within the same day for a quick return to service. VFI-5106 has been used to make lightweight parts and shapes for manufactured stone, precast, prototyping, and other industrial applications. Depending on application needs, VFI also offers a slower 6-pound foam variation (VFI-5156) with a longer working time.

- Works as a lightweight casting, void-filling, or backfilling material
- Provides a uniform surface that can be sanded, painted, or top coated
- Convenient 1A:1B mix ratio by volume for quick and easy application
- Fast demold time for a quick turnaround on parts

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Density (Free Rise)	ASTM D1622-03	6 PCF
K Factor	ASTM C177-85	N/A
Closed Cell Content	ASTM D2856	N/A
Color	N/A	Beige
Compressive Strength	ASTM D1621	111.36 psi

LIQUID PROPERTIES	TEST METHOD	TEST RESULTS
Mix Ratio by Volume	N/A	1A:1B
Mix Ratio by Weight	N/A	100A:85.18B
Viscosity A Side	ASTM D2196	200 cps
Viscosity B Side	ASTM D2196	800 cps
Mixed Viscosity	ASTM D2196	500 cps
Specific Gravity	ASTM D1475	1.14 g/mL
Cream Time (Pot Life)	N/A	1 minute
Rise Time	N/A	4:00 minutes
Tack-Free Time	N/A	5:30 minutes
Approximate Volumetric Expansion	N/A	11.89 times

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MOLD PREPARATION

Molds must be clean, dry, and free of contaminants such as dirt, debris, oils, or other residues. Spray a uniform layer of release across the entire surface and wait for it to dry before adding more. Using a release agent will help extend the life of the mold.

The mold must be strong enough to hold shape if subject to packing pressure. Some rubber molds may require a stiffer outer mold, as the expanding foam may push and deform the mold if it is not rigid enough. A cold mold will provide less expansion and a less uniform skin on the foam, so the mold should be heated to at least room temperature. Heated molds up to 120°F are acceptable, but heating the mold past 72°F will decrease the pot life. Compatible molds for casting include metal, urethane, epoxy, and platinum silicone.

MIXING

The foam is sensitive to cold temperatures, so the material, mold, and work area should be at least at room temperature for the best results. The B side material (Poly) must be premixed until uniform. Mix the foam with a drill or power mixer. Pour the measured B side into the measured A side (Iso). Mix rapidly, moving the mixer through the center until uniform. Transfer the mixture to a new container and mix again before use. The material must be completely mixed before the 1 minute cream time (initial rise).

POURING & CURING

After mixing, the material should be immediately poured into a mold or form. Pour in one spot at the lowest point of the mold and allow space for the foam to expand. Do not overload foam into closed molds to prevent distortion. Avoid scraping material from the container, as the material may not be completely mixed, and the foam may begin to expand before you are finished pouring.

Avoid moving the foam as it rises since movement could cause the cells to collapse before it fully cures. Allow the casting to remain in the mold or form for at least 20 minutes at room temperature to prevent deformation. Demold time will vary based on material volume, temperature, mold type, etc. Thinner pours may require a longer cure time.

CLEANUP

Clean equipment with xylene or MEK before the foam cures. If the foam has cured, you can break it off the surface and wipe the rest off with xylene.

STORAGE/SHELF LIFE

The material should be stored in a clean, dry building between 60°F - 90°F. The shelf life is 12 months from the date of manufacture. Opened containers can be resealed with a nitrogen purge immediately after use.

PRECAUTIONS

VFI-5106 contains isocyanate, which may irritate the skin and is toxic if inhaled as particulate matter. Avoid prolonged breathing of vapors or repeated skin contact by wearing proper personal protective equipment. Use only with adequate ventilation. This material is not UV color stable and has no long-term UV testing. Do not thin or add foreign material to the product. See Safety Data Sheet for complete safety information.