



NCFI Polyurethanes

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27-004 Low Density Rigid Foam System

Technical Data Sheet

NCFI 27-004 is a two-component, HFC blown, all PMDI based rigid pour foam designed for flotation applications requiring a high degree of flow.

Typical Properties of Components

Component	R-27-004	A-27-004
Appearance	Transparent amber liquid	Transparent brown liquid
Brookfield Viscosity @ 50 rpm	450 cps at 72°F	200 cps at 72°F
Specific Gravity	1.09	1.24
Storage Temperature	40°F – 90°F	40°F – 90°F

Mix Ratio

By weight.....100 parts poly : 112 parts iso

By volume.....100 parts poly : 100 parts iso

Typical Properties of Mixed System at 72°F

	Regular	Slow
Cream Time	34 seconds	45 seconds
Gel Time	180 seconds	225 seconds
Rise Time	290 seconds	375 seconds
Free Rise Core Density	2.0 pcf	2.0 pcf

Process Parameters

Iso Temperature	75°F to 85°F
Poly Temperature	70°F to 95°F
Mold Temperature	95°F to 125°F
Demold Time	7 to 9 minutes*

* Demold time is dependent on shot size, and material and mold temperatures. NCFI recommends using a high-quality, properly applied wax or silicone release agent to prevent cured material from sticking to mold surfaces.

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Typical Physical Properties

Molded Density (ASTM D1622)	3.0 lb/ft ³	
Free Rise Density (ASTM D1622)		2.0 lb/ft ³
Compressive Strength (ASTM D1621)	47 psi	26 psi
Compression Modulus (parallel)		772 psi
Compression Modulus (perpendicular)		270 psi
Aged k-factor (ASTM C518)	0.21 BTU· in/(hr·ft ² ·°F)	0.21 BTU· in/(hr·ft ² ·°F)
Closed Cell Content (NCFI TM-300)	> 94%	> 92%
Water Absorption (ASTM D2842)	≤ 0.10 lbs/ft ²	≤ 0.10 lbs/ft ²
Moisture Vapor Transmission (ASTM E96)	2 – 4 perm·in	2 – 4 perm·in
Resistance to Solvents	Excellent	Excellent
Resistance to Mold & Mildew	Excellent	Excellent
Maximum Service Temperature	180°F	180°F
USCG Title 33, Chapter 1, Part 183	Pass	Pass
Flammability	Pass UL-94 HBF	Pass UL-94 HBF
MIL-PRF-83671B, Class 1, Category 2	Pass	

Other Properties

Meets what were the requirements of the superseded Military Specification 21929 B.
(Mil Spec 21929 B was superseded by 21929 C in 1991.)

Storage and Handling

Avoid entraining air during mixing. Store the poly from 65°F to 85°F. Avoid moisture contamination during storage, handling, and processing. For both components, pad containers and day tanks with either nitrogen or dry air (desiccant cartridge or air dryer @ -40°F dew point). For optimum shelf life, the recommended storage temperature for iso is 60°F to 90°F. Do not expose iso to lower temperatures – freezing may occur. Shelf life is 6 months for factory sealed containers.