



NCFI Polyurethanes

Div. of Barnhardt Manufacturing Co.

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TERRATHANE 24-023

Low Density Rigid Trench Break System

Technical Data Sheet

NCFI Terrathane 24-023 is a two-component, water and HFC-245fa co-blown, polyurethane foam system designed for use as a void fill, trench-break material. NCFI 24-023 has been formulated to process at 2.0–2.2 pcf depending on lift thickness. 24-023 is designed to be built up in great lift thickness without scorch or splitting. NCFI 24-023 is not ASTM E-84 flame spread rated and is not to be used in applications governed by building codes. This product is also offered in a high altitude variation that will maintain the 2 pcf density when processed at high elevations.

Typical Properties of Components

Component	R-24-023	A-24-023
Appearance	Transparent amber liquid	Transparent brown liquid
Brookfield Viscosity @ 50 rpm	580 cps at 72°F	200 cps at 72°F
Specific Gravity	1.07	1.24
Storage Temperature	40°F – 90°F	40°F – 90°F

Mix Ratio

By weight.....100 parts poly : 116 parts iso

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

Typical Properties of Hand-Mixed System at 50°F, and Sprayed at 130° F

Cream Time	5 seconds	
Tack Free Time	22 seconds	5 seconds
Rise Time	33 seconds	
Free Rise Core Density	2.0 pcf	

Process Parameters

Iso Temperature	110°F to 130°F
Poly Temperature	110°F to 130°F
Mix Pressure	800 – 1200 psi

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Typical Physical Properties

	Free Rise	Sprayed
Free-Rise Density (ASTM D1622)	2.0 lb/ft ³	
Compressive Strength (ASTM D1621)	27 psi	43.5 (parallel)
Compressive Modulus (ASTM D1621)	560 psi	1122 psi
Closed Cell Content (NCFI TM-300)	> 95%	91.6%
Flexural Strength (ASTM D790)		128 psi
Flexural Modulus (ASTM D790)		4734 psi
Shear Strength (ASTM C273)		49.3 psi
Shear Modulus (ASTM C273)		395 psi
Water Absorption (ASTM D2842)	≤ 0.08 lbs/ft ²	≤ 0.08 lbs/ft ²
Moisture Vapor Transmission (ASTM E96)	2 – 4 perm·in	2.02 perm·in
Resistance to Solvents	Excellent	Excellent
Resistance to Mold & Mildew	Excellent	Excellent
Maximum Service Temperature	180°F	180°F
28-Day Dimensional Stability Testing (ASTM D2126)	Volume change	
-20° F	-0.1%	0.04%
200° F	-0.2%	-0.38%
158° F, 95% R.H.	1.2%	-0.11%
K- factor (ASTM C-518)	-	0.179 (initial)
Tensile Strength	-	66.1 psi
Limiting Oxygen Index	-	20.0%

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.

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