

TERRATHANE™ Polyurethanes

TerraThane™ Polyurethanes by NCFI are uniquely formulated for a variety of geotechnical applications. Each batch goes through stringent testing and quality assurance standards to ensure reliability in the field.

About 24-023

TerraThane™ 24-023 is a two-component, water and HFC-245fa co-blown, low-density, low exotherm polyurethane system designed for use as a void fill or trench-break material. NCFI 24-023 has been formulated to process at 2.0–2.2 pcf depending on lift thickness without scorching or splitting.

24-023 APPLICATIONS

- Pipeline Pads/Pillows
- Trench Breakers
- Low-Exotherm Void Filling
- Low-Density
- Rock Shields

Reaction Curve at 130°

Cream Time	1 second
Gel Time	7 Seconds
Tack Free Time	15 seconds

Physical Properties

Physical Properties	Test Method	Free Rise	Sprayed
Density	ASTM D1622	2.3 pcf	2.3 pcf
Compressive Strength	ASTM D1621	24.0 psi	43.5 psi
Compressive Modulus	ASTM D1621	687 psi	1122 psi
Tensile Strength	ASTM D1623	54.7 psi	66.1 psi
Tensile Modulus	ASTM D1623	83 psi	
Water Absorption	ASTM D2842	≤ 0.08 lbs/ft ²	≤ 0.08 lbs/ft ²
Closed Cell Content		>95%	91.6%
Max Service Temp		180°	180°F
Elongation	ASTM D1623	9.3%	
Shear Strength	ASTM C273	36.7 psi	49.3 psi
Shear Modulus	ASTM C273	225 psi	395 psi
Flexural Strength	ASTM D790	41.4 psi	128 psi
Flexural Modulus	ASTM D790	895 psi	4734 psi



Special Testing/Certifications

Dimensional stability, % volume change, 28 day aging (ASTM D-2126)	Heat age at 200°F	Freezer at -20°F	Humid age at 95% RH & 158°F
	-0.2%	-0.1%	1.2%
Flammability UL-94 HBDF		Pass	
Moisture Vapor Transmission (ASTM E960)		2-4 perm•in	

Performance

Wet Environments... **Fair**

Lifting Capacity... **Excellent**

Chemical Resistance

Solvents... **Excellent**

Mold and Mildew... **Excellent**

Component Properties

Component	B-24-023	A2-000
Appearance	Clear Amber Liquid	Clear Brown Liquid
Brookfield Viscosity @ 20rpm	580 cps at 72°	200 cps at 72°
Specific Gravity	1.07	1.24
Weight per Gallon	8.93 lbs	10.3 lbs
Storage Temperature	40° - 90°F	50° - 100°F

Processing Parameters

ISO Temperature	100° - 130°F
Poly Temperature	100° - 130°F
Mixing Pressure	800 - 1200 psi

Mix Ratio

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

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

Storage and Handling

Store the poly from 50°F to 90°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 50°F to 110°F. **Do not expose iso to lower temperatures – freezing may occur.** Store components at 70°F to 90°F for several days prior to use to minimize components being too viscous at time to take to field. Shelf life is 6 months for factory sealed containers.

Application Cautions

Careful consideration should be given to selection and application of any NCFI Polyurethane foam system where excessive foam mass build-up can occur. Excessive polyurethane foam lift thickness will result in high internal temperatures within the injected foam, which can result in degraded foam properties, or in extreme cases, fire or spontaneous combustion. **Any flammability rating contained in this literature is not intended to reflect hazards presented by this or any other material under actual fire conditions.** Each person, firm or corporation engaged in the application, installation or use of any polyurethane product should carefully determine whether there is a potential fire hazard associated with such product in a specific usage, and utilize all appropriate precautionary and safety measures. Please consult NCFI Polyurethanes for safety considerations, polyurethane system selection and application recommendations.

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