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TerraThane 24-003 Geotechnical Foam System

NCFI Polyurethanes system 24-003 is a hydrophobic/hydro-insensitive, plural component, polymeric MDI-based polymer system designed for concrete lifting/leveling, joint matching, void filling and concrete under-sealing in wet environments. This system has been specially formulated for exceptional flow or spread under concrete road or slab section(s) when water is present. In certain applications this system can be used for deep soil injection applications when soil conditions dictate.

Typical Properties of Components

| Component | B-24-003 | A2-000 |
|-------------------------------|--------------------|--------------------|
| Appearance | Transparent liquid | Transparent liquid |
| Brookfield Viscosity @ 30 rpm | 500 cps at 72°F | 200 cps at 72°F |
| Specific Gravity | 1.07 | 1.24 |
| Storage Temperature | 50°F – 100°F | 50°F – 110°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 72°F and thru HPIM equipment

| | at 72°F | at 110°F thru equipment |
|------------------------|------------|-------------------------|
| Cream Time | 22 seconds | 9 seconds |
| Tack Free Time | 60 seconds | 23 seconds |
| Rise Time | 90 seconds | 25 seconds |
| Free Rise Core Density | 4 pcf | 4 pcf |

Process Parameters

| Iso Temperature | 100°F to 120°F | |
|------------------|---|--|
| Poly Temperature | 100°F to 120°F | |
| Mixing Pressure | Minimum 800 static, 600 dynamic psi, 1000/800 preferred | |



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| In-Place Density (ASTM D-1622) | | 5 - 6 pcf |
|---|------------------------|--------------------------------------|
| Compressive Strength (ASTM D-1 | 621), parallel to rise | |
| Compressive Modulus (ASTM D-1621), parallel to rise | | |
| Tensile Strength (ASTM D-1623), p | | 100 – 120 psi |
| Flexural Strength (ASTM D790) | | 387 psi |
| Flexural Modulus (ASTM D790) | | 13502 psi |
| Shear Strength (ASTM C273) | | 90 psi |
| Shear Modulus (ASTM C273) | | 677 psi |
| Closed cell content | | > 92% |
| Water Absorption (ASTM D-2842) | | <u><</u> 0.04 lbs/ft ² |
| NYDOT Hydro-Insensitivity test, GTP-9 | | > 96% density retention |
| | | >93% comp str retention |
| Dimensional stability, % volume c | hange (ASTM D-212 | 26) |
| Heat age at 158°F | Freezer at -20°F | Humid age at 100%RH & 120°F |
| 28 day aging -1.5% | -0.1% | -1.0% |
| Resistance to Solvents | | Excellent |
| Resistance to Mold and Mildew | | Excellent |
| Maximum service temperature | | 200°F |

Storage and Handling

Store the poly from 50°F to 100°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. Shelf life is 6 months for factory sealed containers. To insure handling safety, consult the Safety Data Sheets associated with this product.

Application Cautions

Careful consideration should be given to selection and application of any NCFI Polyurethane foam system, including injection under concrete slabs and/or into void areas (cavities), where excessive foam mass build-up can occur. Excessive polyurethane foam lift thickness will result in high internal temperatures within the injected foam. These high temperatures can result in degraded foam properties, or in extreme cases, spontaneous combustion. Single lift thickness should be limited to a maximum of 6 inches, allowing at least 15 minutes before an additional lift. Please consult NCFI Polyurethanes for safety considerations, polyurethane system selection and application recommendations.

Polyurethane products manufactured or produced from this liquid system may present a serious fire hazard if improperly used or allowed to remain exposed or unprotected. The character and magnitude of any such hazard will depend on a broad range of factors which are controlled and influenced by the manufacturing and production process, by the mode of application or installation and by the function and usage of the particular product. *Any flammability rating contained in this literature is not intended to reflect hazards presented by this or any other material under actual fire conditions. These ratings are used solely to measure and describe the product's response to heat and flame under controlled laboratory conditions.* Each person, firm or corporation engaged in the manufacture, production, 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.