



NATURAL-THERM[®] MARINE SPRAY

Natural-Therm[®] Marine Spray is a two-component, HFO blowing agent-based polyurethane foam system designed for marine applications that meets depth and buoyancy requirements while providing rigidity and strength. This product exceeds industry standards for resisting pressure and water penetration and can be applied by spray methods. Natural-Therm[®] Marine Spray hardens into shape with minimal reduction, resists mold and mildew, and has required resilience and impact recovery.

Features

- Excellent processing characteristics
- Consistent density distribution for proper flotation
- Certified for flotation applications¹

¹ Code of Federal Regulations 33 Section 183.114 "Test of Flotation Materials."

Applications

- Buoys
- Boats, ships
- Docks
- Set design
- Water features
- Molding
- Floating devices

Packaging, Storage, and Shelf Life

A Component: 55 U.S. Gallons, Closed-Top Steel Drum — 500 lb. net wt.
B Component: 55 U.S. Gallons, Closed-Top Steel Drum — 475 lb. net wt.

Store containers between 50°F and 80°F. Containers should be opened carefully to allow any pressure buildup to be vented safely while wearing full safety protection. Excessive venting of the B Component may result in higher density foam and reduced yield.

Shelf Life: 6 months when stored in the original unopened container at 50°F–80°F. Excessive low or high temperatures may decrease shelf life.

Processing: Drum temperatures should be conditioned to 70°F–80°F before application to ensure optimal viscosity and mixing.

Equipment

The proportioning equipment must be manufactured specifically for heating, mixing, and spray application of polyurethane foam and be able to maintain 1:1 metering with a +2% variance and adequate main heating capacity to deliver heated and pressurized materials up to 150°F.

Physical Properties

PROPERTY	TEST METHOD	VALUE
Viscosity @ 25°C, cps	A Component	200
	B Component	300
Specific Gravity @ 25°C, g/ml	A Component	1.24
	B Component	1.16
Core Density (lb./ft ³)	ASTM D1622	Nominal 2.0–3.0
Compressive Strength ¹ (psi)	ASTM D1621	34
Tensile Strength ¹ (psi)	ASTM D1623	18
Thermal Conductivity (BTU in/hr ft ¹ °F)	ASTM C518	0.160
Dimensional Stability	ASTM D2126	
		158°F (Dry) 28-Day
		158°F (100% Humidity) 28-Day
Water Absorption (% by volume)	ASTM D2842	0.034
Tumbling Friability (% loss)	ASTM C421	0.20%
Closed Cell Content	ASTM D6226	> 90%

Physical property test results correspond to a core density sample of 2.4 PCF.

¹ Value at yield or 10% deflection, whichever occurs first.

Code of Federal Regulations 33 Section 183.114 "Test of Flotation Materials"

PROPERTY	TEST METHOD	VALUE
Gasoline Vapor, 30 days	ASTM D2842	Pass
Reference Fuel B, 24 hours		Pass
Reference Fuel B, 30 days		Pass
Reference Oil No. 2, 24 hours		Pass
Reference Oil No. 2, 30 days		Pass
TSP, 24 hours		Pass
TSP, 30 days		Pass

Natural-Therm® Marine Spray Installation

Natural-Therm® Marine Spray is designed to provide optimal yield when sprayed in 2-inch to 4-inch-thick passes. Excessive pass thickness above 4 inches can reduce physical properties and cause local overheating and possible fire. Additional thickness may be applied with a 5-to-10-minute waiting period between lifts. Yield and in-place density is dependent upon the temperature of the substrate, ambient air temperature, gun speed of application, gun tip size, and the output of the proportioner. The substrates must be clean, dry, and within the specified temperature range of 60°F–80°F.

The data presented here should only be used as a guide since the actual foam properties are influenced by the efficiency of the foam processing, component temperatures, foam thickness, and ambient conditions. While the following technical information is based on results of actual tests conducted by Natural Polymers, LLC, it should only be used as a guideline for typical chemical and physical properties. The user must test and qualify the product. Final determination of suitability is the responsibility of the end user.

Surface Preparation

Natural-Therm® Marine Spray must be applied to surfaces that are clean and dry, and free of dirt, oil, solvent, grease, loose particulates, frost, ice, and other foreign matter that could inhibit adhesion.

Processing Guidance

	High Pressure	Low Pressure
Ambient Temperature	60°F–100°F	60°F–100°F
MACHINE SETTING TEMPERATURE		
A Component Pre-Heaters	110°F–120°F	90°F–105°F
B Component Pre-Heaters		
Hoses		--
Spray Pressure (Dynamic)	900–1200 psi	<250 psi
PROCESSING CHARACTERISTICS		
Cream Time	6–7 (Seconds)	6–7 (Seconds)
Tack-Free Time	120–130 (Seconds)	120–130 (Seconds)
Initial Cure Time	<1 Hour ¹	<1 Hour ¹

1 Complete cure will depend on temperature, humidity, and degree of ventilation. Complete cure usually occurs within 24–72 hours.

Safety and Handling

Exposure — Read and understand the Safety Data Sheet (SDS) for this product before use. Personnel must use appropriate respiratory, skin, and eye Personal Protective Equipment (PPE) when handling and applying polyurethane spray and pour foam systems. Both Components A and B can cause severe inhalation and skin sensitization. For interior applications: full body protection required. A comprehensive review of SPF safety and handling can be found on the [CPI website](#).

Fire — Polyurethane foam may present a fire hazard if exposed to fire, ignition source, or excessive heat (i.e., cutting torches). Polyurethane foam systems should not be left exposed.

Job Site Ventilation — During SPF application, a minimum of 10 ACH is recommended. Cross ventilation is required with negative pressure in the spray area and exhaust to a secured empty area. For more detailed information, please visit [American Chemistry Council](#).

Temperature and Humidity

When choosing the specific reactivity of the Natural-Therm® Marine Spray for a particular application, climatic conditions must be anticipated. To ensure proper foam performance, all substrates must be dry (i.e., the application should not take place in high-moisture conditions, such as rain, fog, mist, frost, or high humidity, e.g., >85% RH). Under high wind conditions (>12 mph), problems with texture, cure, and overspray will likely be experienced. All polyurethane foams should be protected from direct prolonged contact from sunlight. To protect exposed foam surfaces from prolonged ultraviolet degradation and moisture attack, the application of a coating is required immediately after the foam has cured.

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For more information, visit:
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