

## DESCRIPTION

**POLYSHIELD HT™ SLOW FC is a state-of-the-art, high-performance, sprayed, plural-component, pure polyurea elastomer, that is compliant with FDA 21 CFR 175.300 (c)/ (d) high temperature, heat-sterilized, non-acid aqueous food contact. This system is based on amine-terminated polyether resins, amine chain extenders and prepolymers. It provides a flexible, tough, resilient monolithic membrane with water and chemical resistance.**

## FEATURES

- FDA compliant for incidental and direct food contact.
- 100% solids, no solvents, and no VOCs.
- Fast-set; handle in two minutes or less.
- Extended tack time to allow deep surface penetration.
- High dry temperature stability to 250°F (121°C) with intermittent temperatures up to 300°F (148°C).

## RECOMMENDED USES

- Direct and incidental food contact.
- Coating for steel or other substrate exposed to food.
- Liner for concrete tanks, ponds, lagoons, reservoirs, dikes, tunnels, barges, etc.
- Replace or repair failed existing sheet membrane liners.
- Steel tanks, silos, and pipes.
- Encapsulation for EPS or other types of flotation materials.
- Encapsulation for asbestos, lead paint, or other dry hazardous materials (Consult SPI).
- Earthen containment used with or without geotextile.
- Concrete parking decks.

## COLORS

POLYSHIELD HT™ SLOW FC is available in SPI standard colors (Sand, Medium Grey, and Black). Custom colors available upon request. Note: POLYSHIELD HT™ SLOW FC is an aromatic polyurea; therefore, as with all aromatics color change and superficial oxidation will occur. Aliphatic urethane and other suitable topcoats can be used where long-term color stability and increased longevity in full sun exposure are of critical importance.

## DRY PROPERTIES\*

@ 34 mils (0.8 mm)	
<b>Tensile Strength ASTM D638</b>	± 3,966 psi (28 mpa)
<b>Elongation ASTM D638</b>	± 526%
<b>Hardness (Shore D) ASTM D2240-81</b>	42 ± 5
<b>100 % Modulus ASTM D412</b>	1,127 psi (8 mpa) ± 100
<b>300 % Modulus ASTM D412</b>	2,000 psi (14 mpa) ± 100
<b>Tear Resistance ASTM D624</b>	457 PLI (80 KN/m) ± 50
<b>Service Temperature</b>	-60°F - +250° (-50°C - +121°C)

\*All cured film properties are approximate since processing parameter, ad-mixture types, and quantities change physical properties of the cured elastomer. All samples for above tests were force cured 48 hours or aged for more than three weeks. It is recommended that the user perform their own independent testing.

## PACKAGING

This product sold in standard 110 gallon drum and 550 gallon tote sets. Available in other container sizes, contact sales representative for further information. Non-standard containers may require a longer lead time.

## WET PROPERTIES

<b>Solids by Volume</b>	100%
<b>Solids by Weight</b>	100%
<b>Volatile Organic Compounds</b>	0 lbs./gal (0 g/l)
<b>Theoretical Coverage DFT</b>	100 sq. ft. @ 16 mils/gal
<b>Weight per gallon (approx)</b>	8.9 lbs. (4.0 kg)
<b>Number of coats</b>	1 - 2
<b>Mix Ratio</b>	1 "A" : 1 "B"
<b>Viscosity</b>	A: 350 ± 50 cPs B: 475 ± 50 cPs
<b>Shelf Life Unopened Containers @ 60 - 90°F (15 - 32°C)</b>	Six Months

Minimum material/container temperature for application is 70°F (21°C).

## CURING SCHEDULE

<b>Gel</b>	± 30 sec.
<b>Tack Free</b>	± 1 min. 30 sec.
<b>Post Cure**</b>	24 hour
<b>Recoat</b>	0 - 12 hours

\*\*Complete polymerization to achieve final strength can take up to several days or weeks, depending on a variety of conditions or product type. The samples for tests were sprayed with Graco HXP3 @ 2,500 psi dynamic pressure (17 mpa). Primaries/Hose Heat 170°F (77°C) MP Fusion Gun with 2929 mixing chamber.

## TEST INFORMATION

<b>ABRASION RESISTANCE ASTM D4060 1000 g - 1000 cycles</b>	H-18 wheel	36 mg. loss
	CS-17 wheel	5.3 mg. loss
<b>FDA Extraction Test 21 CFR 175.300(e)(4)(i) 2 hours at 250°F</b>	0.27 mg/in <sup>2</sup>	

## MIXING & THINNING

The polyol "B" component must be thoroughly power mixed each day, prior to use. Contact a SPI technician regarding proper mixing equipment.

Thinning is not required. Using any thinner may adversely affect product performance.

## GENERAL APPLICATION INSTRUCTIONS

Apply POLYSHIELD HT™ SLOW FC to only clean, dry, sound surfaces free of loose particles or other foreign matter. A primer may be required; subject to type and condition of the substrate. POLYSHIELD HT™ SLOW FC can be sprayed over a broad range of ambient temperatures. Consult technical service for specific recommendations. It is recommended that POLYSHIELD HT™ SLOW FC be sprayed in multi-directional (north-south/east-west) passes to ensure uniform thickness. The polyol "B" component must be thoroughly power mixed each day, prior to use. Consult technical service for specific primer, temperature and mixing equipment recommendations.

## RECOMMENDED EQUIPMENT SETTINGS

- Standard 1:1 ratio, heated, plural-component equipment developing a minimum of 2000 psi (14 mpa) dynamic pressure with heating capabilities to 175°F (79°C) will adequately spray POLYSHIELD HT™ SLOW FC. These include Graco 20/35, 20/35 Pro, H-3500, HV 20/35, Reactor E-XP1, E-XP2, H-XP2, H-XP3, and SPI Gusmer 25/25. Gun models include Graco Fusion MP, Gap Pro, GX7-DI, and GX-8 Pro gun
- Pre-heater temperature should be at 160-170°F (71-76°C).
- Hose temperature should be at 160-170°F (71-76°C). A hose thermometer inserted under the insulation near the gun should read a minimum of 145-155°F (63-68°C).
- Physical properties will be enhanced when sprayed at higher pressure (3000 psi or more), utilizing an impingement mix gun such as MP Fusion or GX7-DI gun.

## LIMITATIONS

- This product is for professional use only.
- This product must be stored at temperatures between 60–90°F (15–30°C).
- Liquid temperature in drums during application 70–100°F (21–38°C).
- Apply product when surface and air temperatures are above 40°F (5°C) and the surface temperature is at least 5°F (3°C) above dew point and rising.
- Minimum material/container temperature for spray application is 70°F (21°C).
- Avoid moisture contamination in containers. Containers should not be released if contamination is suspected. CO<sub>2</sub> created pressure can develop. Do not attempt to use contaminated material.
- Undried air exposed to liquid components will reduce physical properties of the cured coating.

Note: The material supplied is a two component system (Component "A"/Component "B"), which is used to formulate this product. The quality and characteristics of the finished

polymer is determined by the mixture and application of the two components.

## GENERAL SAFETY, TOXICITY, & HEALTH

Safety Data Sheets are available for this coating material. Any individual who may come in contact with these products should read and understand the S.D.S. **CHEMTREC EMERGENCY NUMBER 1-800-424-9300**

**WARNING:** Contact with skin or inhalation of vapors may cause an allergic reaction. Causes eye damage/irritation. Avoid eye contact with liquid or spray mist. Hypersensitive persons should wear protective clothes, gloves and use protective cream on face, hands and other exposed areas.

**CONTAMINATION:** Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected, carbon dioxide created pressure can develop. Do not attempt to use contaminated material.

**EYE PROTECTION:** Safety eye wear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield.

**SKIN PROTECTION:** Personal protective equipment for the body should be selected based on the task being performed; the risks involved, and should be approved by an industrial hygiene specialist before handling this product. Chemical resistant gloves are recommended. Cover as much of the exposed skin area as possible with appropriate clothing.

**RESPIRATORY PROTECTION:** Harmful if inhaled and may cause allergy or asthma symptoms. Use a respirator approved for isocyanates and organic vapors. If you are not sure, or not able to monitor levels, or if you are spraying in an enclosed/indoor area, use MSHA/NIOSH approved supplied air respirator. Consider the application and environmental concentrations when deciding if additional protective measures are necessary.

**INGESTION:** Do not take internally. It is believed that ingestion of polymeric isocyanates would not be fatal to humans, but may cause inflammation of mouth and stomach tissue.

## WARRANTY & DISCLAIMER

Specialty Products, Inc. has no role in the manufacture of the finished polymer other than to supply its two components. It is vital that the person applying this product understands the product, and is fully trained and certified in the use of plural-component equipment. Specialty Products, Inc., an Alaska corporation, warrants only that the two components of this product shall conform to the technical specifications published in the product literature. The quality and fitness

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**Product & Equipment Technical Assistance**  
**24 hours - 7 days a week 800 627 0773**

### **CONTACT US**

2410 104<sup>th</sup> St. C. S. Suite D, Lakewood, WA 98499

**[WWW.SPECIALTY-PRODUCTS.COM](http://WWW.SPECIALTY-PRODUCTS.COM)**

1 800 627 0773 **FAX** 253 588 7196

[info@specialty-products.com](mailto:info@specialty-products.com)



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