

## DESCRIPTION

**POLYSHIELD HT™ 100F is a fast-set, high performance, spray-applied, plural component, pure polyurea elastomer. This system is based on amine-terminated polyether resins, amine chain extenders, and prepolymers. It provides a cost effective flexible, tough, resilient monolithic membrane with water and chemical resistance.**

## FEATURES

- 100% solid, no solvents, and zero VOCs.
- Fast-set; handle in one minute or less.
- High dry temperature stability to 250°F (121°C) with intermittent temperatures to 300°F (148°C).
- High abrasion resistance.
- High elongation for crack bridging.
- Excellent encapsulation characteristics.
- Compliant with FDA/USDA for incidental food contact.

## RECOMMENDED USES

- Coating for steel or other substrate exposed to corrosion.
- Liner for concrete tanks, concrete floors, ponds, lagoon, reservoirs, dikes, tunnels, barges, etc.
- Encapsulation for asbestos, lead paint, or other dry hazardous materials (consult SPI).
- Replace or repair failed existing sheet membrane liners.
- Earthen containment used with or without geotextile.
- Steel tanks, silos, and pipes.
- Concrete parking decks.
- Rock shield for pipelines.
- Wastewater containment.
- Coating over geotextile fabric for primary/secondary containment.

## COLORS

POLYSHIELD HT™ 100F is available in SPI standard colors (Sand, Medium Grey, and Black). Customer colors available upon request. Note: POLYSHIELD HT™ 100F is an aromatic polyurea. Therefore, 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.

## 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.

## DRY PROPERTIES\*

<b>@ 34 mils (0.8 mm)</b>	
<b>Tensile Strength ASTM D638</b>	± 3,700 psi (26 mpa)
<b>Elongation ASTM D638</b>	± 300%
<b>Hardness (Shore A) ASTM D2240-81</b>	97 ± 5
<b>Hardness (Shore D) ASTM D2240-81</b>	47 ± 5
<b>100% Modulus ASTM D412</b>	1,600 psi (11 mpa) ± 100
<b>300 % Modulus ASTM D412</b>	3,500 psi (24 mpa) ± 100
<b>Tear Resistance ASTM D624</b>	483 PLI (107 KN/m) ± 50
<b>Service Temperature</b>	-60° - +250°F (-50° - 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.

## 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>	8.8 lbs. (4.0 kg)
<b>Number of coats</b>	1 - 2
<b>Mix Ratio</b>	1 "A" : 1 "B"
<b>Viscosity (cps)</b>	A: 450 ± 50 B: 325 ± 25
<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>	± 5 sec.
<b>Tack Free</b>	± 7 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) Graco MP Fusion Gun with 29/29 mixing chamber.

## TEST INFORMATION

<b>Abrasion Resistance ASTM D4060 1000 g - 1000 cycles</b>	CS-17	0.2 mg loss
	H-18	90 mg loss
	H-22	136 mg loss
<b>Flame Spread Smoke Density ASTM E84 @ 40 mils</b>	23.3 61 Class I	

## 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™ 100F only to clean, dry, sound surfaces free of loose particles or other foreign matter. POLYSHIELD HT™ 100F can be sprayed over a broad range of ambient and substrate temperatures.

It is recommended that POLYSHIELD HT™ 100F be sprayed in multi-directional (north-south/east-west) passes to ensure uniform thickness.

Follow the instructions attached to "A" and "B" containers.

Contact technical service personnel for specific recommendations and pricing. As well as the availability of spray and auxiliary equipment.

## RECOMMENDED EQUIPMENT SETTINGS

- Standard 1:1 ratio, heated, plural-component equipment developing a minimum of 1500 psi (10 mpa) dynamic pressure with heating capabilities to 175°F (79°C) will adequately spray POLYSHIELD HT™ 100F. 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, GX-8 Pro gun, PMC PH/PHX-40, and PHX25.
- 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 POLYSHIELD HT™ 100F 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 of the product are dependent upon the proper mixture and application of the components by the applicator. There are no warranties that extend beyond the description on the face of this instrument. Failure to apply the product within the parameters stated on this document shall void

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