



POLYSHIELD HT™

ELASTOMERIC POLYUREA

Revised 07.14.11

DESCRIPTION

POLYSHIELD HT™ is a state-of-the-art, 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 flexible, tough, resilient monolithic membrane with water and chemical resistance.

FEATURES

- 100% solids. No solvents. No VOCs.
- Fast-set: Handle in two minutes or less.
- Extended tack time to allow deep surface penetration.
- High dry temperature stability up to 250° F (121 °C) with intermittent temperatures up to 300° F (148 °C).
- High abrasion resistance.
- ASTM E84-97a and complies with NFPA and UBC Class 1 Fire Rating.

RECOMMENDED USES

- Coating for steel or other substrate exposed to corrosion.
- Liner for concrete tanks, concrete floors, ponds, lagoons, reservoirs, dikes, irrigation ditches, tunnels, barges, etc.
- Replace or repair failed existing sheet membrane liners.
- Steel tanks, silos, and pipes.
- Bridge deck waterproofing
- 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™ is available in SPI standard colors (Sand, Medium Grey, and Black). It should be noted that POLYSHIELD HT™ is an aromatic polyurea; therefore, as with all aromatics color change and superficial oxidation will occur.

Aliphatic urethane, polyurea, and other suitable aliphatic topcoats can be used where long-term color stability and increased longevity in full sun exposure are of critical importance.

WET PROPERTIES @ 77°F (25°C)

Solids by Volume	100%
Solids by Weight	100%
Volatile Organic Compounds	0 lbs/gal (0g/l)
Theoretical Coverage DFT	100 sq. ft. @ 16 mils/gal
Weight per gallon (approx.)	8.55 lbs. (3.87 kg)
Number of Coats	1-2
Mix Ratio	1 "A": 1 "B"
Viscosity (cps) @ 77° F (25 °C)	A: 400 approx. B: 550 approx.
Shelf Life Unopened Containers @ 60-90°F (15-32°C)	Six months

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

DRY PROPERTIES @ 34 mils (0.8 mm)*

Tensile Strength ASTM D 412	4219 psi (29.3 mpa)
Elongation @77°F (25°C)	619%
Hardness (Shore D)	52-44
100% Modulus ASTM D 412	1280 psi (8.9 mpa) ± 100
300% Modulus	2137 psi (14.9 mpa) ± 100
Tear Resistance ASTM D 624	612 PLI (107 KN/m) ± 50
Service Temperature	-60°F - +250°F (-50°C - +121°C)
Abrasion Resistance 1 kg. 1000 rev.	H-18 wheel 109 mg. Lost H-22 wheel 50 mg. lost
Flame Spread @ 20 mils ASTM E84	5

CURING SCHEDULE

Gel	± 5 sec.
Tack Free	± 8 sec.
Post Cure**	24 hours
Recoat	0-12 hours
Smoke Density @ 20 mils ASTM E84	5
Weatherability 3000 hours QUV	No evidence of failure

*All cured film properties are approximate since the potential processing parameters, admixture types, and quantities will change physical properties of the cured elastomer. All samples for above tests were force cured or aged for more than three weeks. It is recommended that the user perform their own independent testing.

**Complete polymerization to achieve final strength can take up to several weeks depending on a variety of conditions. The samples for tests were sprayed with SPI/Gusmer 20/35 HP @ 2500 psi dynamic (172 bar). Primaries/Hose Heat 170°F (77°C) GX7-400 Gun with 453 module and 212 PCD.



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GENERAL APPLICATION INSTRUCTIONS

Apply POLYSHIELD HT™ only to clean, dry, sound surfaces free of loose particles or other foreign matter. A primer may be required; depending on type and/or condition of the substrate. Consult technical service personnel for specific primer recommendations and substrate preparation procedures.

POLYSHIELD HT™ can be sprayed over a broad range of ambient and substrate temperatures. Contact technical service personnel for specific recommendations, pricing, and availability of spray and auxiliary equipment.

It is recommended that POLYSHIELD HT™ 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. Contact a SPI technician regarding proper mixing equipment.

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

RECOMMENDED EQUIPMENT AND SETTINGS

- Standard 1:1 ratio, heated, plural-component equipment developing a minimum of 2000 psi (10.4 mpa) dynamic pressure with heating capabilities to 175° F (79 °C) will adequately spray POLYSHIELD HT™. 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 Progun.
- 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) (20.8mpa), utilizing an impingement mix gun such as the Gusmer GX7 gun, Gusmer GX7-400 gun, MP Fusion or GX7-DI.

MIXING AND THINNING

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

GENERAL SAFETY, TOXICITY & HEALTH DATA

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

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

CLEAN UP: Use DPM, NMP, and Polyclean.

EYE PROTECTION: Safety glasses, goggles, or a face shield are recommended.

SKIN PROTECTION: Chemical resistant gloves are recommended. Cover as much of the exposed skin area as possible with appropriate clothing.

RESPIRATORY PROTECTION: 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.

LIMITATIONS

- This product is for professional use only.
- This product must be stored at temperatures between 60° F to 90° F (15 °C to 30 °C).
- Liquid temperature in drums during application 70°F (21°C) – 100°F (38°C).
- Apply POLYSHIELD HT™ when surface and air temperatures are above 40°F (5°C) and rising, and 7°F (-13°C) above dew point.
- Minimum material/container temperature for spray application is 70°F (21 °C).
- Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected, CO₂ 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 two components (Component "A"/Component "B") used to formulate this product. The quality and characteristics of the finished polymer is determined by the mixture and application of the two components.

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.

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