



# Polyshield HT

## ELASTOMERIC POLYUREA

Revised 0502

### DESCRIPTION

Polyshield HT is a state-of-the-art, high performance, sprayed, plural component pure polyurea elastomer. This system is based on amine-terminated polyether resins, amine chain extenders and MDI prepolymers. It provides a flexible, resilient, tough, monolithic membrane with good water and chemical resistance.

### FEATURES

- 100% solids. No solvents, No VOC's
- Fast set: Handle in two minutes or less. Hydrophobic, therefore unaffected by damp, cool surfaces during application
- Extended tack time to allow deep surface penetration
- High 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 of other substrate exposed to corrosion
- Liner for concrete tanks, ponds, lagoons, reservoirs, dikes, irrigation ditches, tunnels, barges, etc.
- Replace or repair failed existing sheet membrane liners
- Steel tanks, silos and pipes
- Encapsulation material for EPS or other types of flotation materials
- Encapsulation material for asbestos, lead paint or other dry hazardous materials (Consult SPI)
- Earthen containment used with or without geotextile liners

### COLORS

It should be noted that Polyshield HT is an aromatic polyurea, therefore, as with all aromatics over a period of time color change as well as superficial oxidation will occur.

Aliphatic urethane and other suitable topcoats can be used where long-term aesthetics are of critical importance.

### WET PROPERTIES @ 77°F (25°C)

<b>Solids by Volume</b>	100%
<b>Solids by Weight</b>	100%
<b>Volatile Organic Compounds</b>	0 lbs/gal (0g/l)
<b>Theoretical Coverage DFT @ 16 mils (0.4mm)</b>	100 sq. ft. (9.1 m <sup>2</sup> /gal)
<b>Weight per gallon (approx.)</b>	8.55 lbs. (3.87 kg)
<b>Number of Coats</b>	1-2
<b>Mix Ratio</b>	1 "A": 1 "B"
<b>Viscosity (cps) @ 77° F (25 °C)</b>	A: 400 approx. B: 550 approx.
<b>Shelf Life @ 60-90°F (15-32°C)</b>	Six months

### DRY PROPERTIES\* @ 34 mils (0.8 mm)

<b>Tensile Strength</b> ASTM D 412	4219 psi (29.3 mpa)	
<b>Elongation @ 77°F (25°C)</b>	619%	
<b>Hardness (Shore D)</b>	52-44	
<b>100% Modulus</b> ASTM D 412	1280 psi (8.9 mpa) ± 100	
<b>300% Modulus</b>	2137 psi ( 14.9 mpa) ± 100	
<b>Tear Resistance</b> ASTM D 624	612 PLI (107 KN/m) ± 50	
<b>Service Temperature</b>	-60°F – 250°F (-50°C - 121°C)	
<b>Abrasion Resistance</b> 1 kg. 1000 rev.	H-18 wheel	109 mg. lost
	H-22 wheel	50 mg. lost
<b>Flame Spread @ 20 mils</b> ASTM E84	5	
<b>Smoke Density @ 20 mils</b> ASTM E84	5	
<b>Weatherability</b> 3000 hours QUV	No evidence of failure	

*\*All dry film properties are approximate because of processing parameters, as well as add mixture types and quantities will change physical properties of 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.*

### CURING SCHEDULE

Gel	6± sec.
Tack Free	60± sec.
Post Cure**	24 hours
Recoat	0-12 hours

*\*\*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.*

### 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, subject to 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 insure uniform thickness.

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

Follow the instructions attached to A and B containers.

## APPLICATION EQUIPMENT

- Standard 1:1 ratio, heated, plural component equipment developing a minimum of 2000 psi (13.9 mpa) dynamic pressure with heating capabilities to 175°F (79°C) will adequately spray this product. These include SPI-Gusmer 18/18, SPI-Gusmer 25/25 HP, and Gusmer 20/35. Gun models include SPI D7, GUSMER GX7, GUSMER GX7-400, and GUSMER GX8.
- 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) (20.7 mpa), utilizing an impingement mix gun such as a Gusmer GX7 gun, Gusmer GX7-400 or Gusmer GX8 gun.

## MIXING AND THINNING

Thoroughly agitate the "B" components of this product prior to application. Care must be taken not to cross contaminate the individual components with the mixing equipment. Thinning is not required. Using any thinner may adversely affect product performance.

## GENERAL SAFETY, TOXICITY & HEALTH DATA

Material Safety Data Sheets are available on 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.

**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 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, use MSHA/NIOSH approved supplied air respirator.

Consider the application and environmental concentrations in 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.
- Minimum material/container temperature for spray application is 70° F (27° C).
- Avoid moisture contamination in containers. Containers should not be resealed 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 two components (Component A/Component B) used to formulate POLYSHIELD HT. The quality and characteristics of the finished polymer is determined by the mixture and application of the two components.

## WARRANTY & DISCLAIMERS

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 is 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.

SPECIALTY PRODUCTS, INC. MAKES NO WARRANTY OF MERCHANTABILITY OF THE PRODUCT OR OF FITNESS OF THE PRODUCT FOR ANY PARTICULAR PURPOSE.

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