



Polyshield SS-100

SPRAY POLYUREA ELASTOMER

Revised 0102

DESCRIPTION

Polyshield SS-100 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 prepolymers. It provides a flexible, tough, resilient monolithic membrane with good water and chemical resistance.

FEATURES

- 100% solids. No solvents, no VOC's.
- Fast set: Handle in one minute or less.
- Hydrophobic and therefore affected very little by damp, cool surfaces during application.
- It can be sprayed in temperatures below freezing.
- High temperature stability up to 250° F (121 °C) with intermittent temperatures up to 300° F (148 °C).
- Excellent crack-bridging characteristics.

RECOMMENDED USES

- Earthen containment linings with or without geotextile
- Coating for steel or 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
- Coating for 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)
- Truck bed and under-carriage liner

COLOR

Available in several standard colors. Custom colors quoted upon request.

It should be noted that POLYSHIELD SS-100 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)

Solids by Volume	100%
Solids by Weight	100%
Volatile Organic Compounds	0 lbs/gal (0g/l)
Theoretical Coverage DFT @ 16 mils (0.4mm)	100 sq. ft. (9.1 m ² /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: 500 approx. B: 550 approx.
Shelf Life @ 60-90°F (15-32°C)	Six months

DRY PROPERTIES @ 55 mils (1.5mm)*

Tensile Strength ASTM D 638	2500 psi (17.3 mpa)	
Elongation @ 77°F (25°C) ASTM D638	265%	
Hardness (Shore A) ASTM D2240	95%	
Hardness (Shore D) ASTM D2240	50%	
100% Modulus ASTM D 638	1600 psi (11 mpa)	
300% Modulus ASTM D 638	1925 psi (13 mpa)	
Tear Resistance ASTM D 624	430 PLI (75 KN/m)	
Service Temperature	-60°F – 300°F (-50°C - 148°C)	
Abrasion Resistance ASTM D 4060 1 kg. 1000 rev.	H-18 wheel	110 mg. lost
Flame Spread @ 20 mils E 84	10	
Smoke Density @ 20 mils E 84	5	
Weatherability 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	±2 sec.
Tack Free	±8-12 sec.
Post Cure**	12 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 a Gusmer H-II @ 1000 psi (6.9mpa) dynamic pressure. Primaries/Hose Heat 140°F (60°C) D Gun w/#62 mixing chamber.*

GENERAL APPLICATION INSTRUCTIONS

Apply POLYSHIELD SS-100 to only 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 SS-100 can be sprayed over a broad range of ambient and substrate temperatures. The limitations are in the ability of the application equipment to provide adequate material pressure and heat. Contact technical service personnel for specific recommendations, pricing and availability of spray and auxiliary equipment.

It is recommended that POLYSHIELD SS-100 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.

RECOMMENDED EQUIPMENT SETTINGS

- Standard 1:1 ratio, heated, plural component equipment developing a minimum of 1000psi (6.95 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 (2000 psi or more) (13.9 mpa), utilizing an impingement mix gun such as the Gusmer GX7 gun, Gusmer GX7-400 or Gusmer GX8 gun.

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 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 of 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.

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 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 60-90° F (15- 30 °C).
- 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.
- Read and observe all precautions, instructions, and limitations that are included with all containers of POLYSHIELD SS-100.
- Undried air exposed to liquid components will reduce physical properties of the cured coating.

NOTE: The material supplied is two components (A & 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 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.

Specialty Products, Inc. makes no warranty as to the quality of any product modified, supplemented, tinted, or altered in any way after it leaves the manufacturing plant. Specialty Products, Inc. does not warrant that this product is suitable for use as a liner for potable water containers. Use of this product in a potable water container could be hazardous to health if it is improperly processed or applied.

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