



# POLYSHIELD SS-100™

## SPRAY POLYUREA ELASTOMER

Revised 08.25.10

### 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 water and chemical resistance.

### FEATURES

- 100% solids. No solvents, no VOC's.
- Fast set: Handle in one minute or less.
- It can be sprayed in temperatures below freezing.
- High dry temperature stability up to 250° F (121 °C) with intermittent temperatures up to 300° F (148 °C).
- Excellent crack-bridging characteristics.
- Compliant with FDA/USDA for incidental food contact
- ASTM E84-97a and complies with NFPA and UBC Class 1 Fire Rating

### RECOMMENDED USES

- Earthen containment linings with or without geotextile.
- Coating for steel tanks, silos and pipes.
- Coating for steel or other substrate exposed to corrosion.
- Encapsulation for EPS or other types of flotation materials.
- Liner for concrete tanks, ponds, lagoons, reservoirs, dikes, irrigation ditches, tunnels, barges, etc.
- Encapsulation for asbestos, lead paint or other dry hazardous materials (Consult SPI)
- Replace or repair failed existing sheet membrane liners
- Truck bed and under carriage liner.

### COLORS

POLYSHIELD SS-100® is available in SPI standard colors (Sand, Medium Grey and Black). Custom colors available upon request.

It should be noted that POLYSHIELD SS-100® is an aromatic polyurea; therefore, as with all aromatics color change as well as superficial oxidation will occur.

POLYSHIELD SS-100® is available in a high-pigment, U-V inhibited formulation for stand-alone applications, such as roofs and containment liners.

SPI PTC™ and other suitable aliphatic topcoats can be used where long-term color stability is important.



### 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</b>	100 sq. ft. @ 16 mils/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: 500 approx. B: 550 approx.
<b>Shelf Life Unopened Containers @ 60-90°F (15-32°C)</b>	Six months

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

### DRY PROPERTIES @ 55 mils (1.5 mm)\*

<b>Tensile Strength</b> ASTM D 638	2500 psi (17.3 mpa)
<b>Elongation @77°F (25°C)</b>	265%
<b>Hardness (Shore A)</b> ASTM D2240	90
<b>Hardness (Shore D)</b>	50
<b>100% Modulus</b> ASTM D 638	1600 psi (11 mpa)
<b>300% Modulus</b> ASTM D 638	1925 PSI (13 mpa)
<b>Tear Resistance</b> ASTM D 624	430 PLI (75 KN/m)
<b>Service Temperature</b>	-60°F - +300°F (-50°C - +148°C)
<b>Abrasion Resistance</b> 1 kg. 1000 rev.	H-18 wheel   110 mg. Lost

### CURING SCHEDULE

<b>Gel</b>	± 2 sec.
<b>Tack Free</b>	± 8 -12 sec.
<b>Post Cure**</b>	12 hours
<b>Recoat</b>	0-12 hours
<b>Flame Spread @ 40 mils</b>	15
<b>Smoke Density @ 40 mils</b>	30
<b>Weatherability</b> 3000 hours QUV	No evidence of failure

\*All dry film properties are approximate due to the potential changing processing parameters, as well as ad-mixture types and quantities changing 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 H-II @ 1000 psi (6.9 mpa) dynamic pressure. Primaries/Hose Heat 140°F (60°C) D Gun w/#62 mixing chamber.

### GENERAL APPLICATION INSTRUCTIONS

Apply POLYSHIELD SS-100® 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.

SPI - The Single Source Solution Since 1974  
Serving the Plural Component Industry

Product & Equipment Technical Assistance  
24 hours / 7 days a week (800) 627-0773

Consult technical service personnel for specific primer recommendations and substrate preparation procedures.

POLYSHEILD SS-100® 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 POLYSHEILD 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 2000 psi (10.4 mpa) dynamic pressure with heating capabilities to 175° F (79 °C) will adequately spray Polyshield SS-100®. These include Graco HXP3, HXP2, EXP2, Gusmer 20/35 Pro, H-25 and EXP1. Gun models include Graco Fusion AP, Fusion MP, Gap Pro, GX7-DI, Gusmer GX7-400, Gusmer D7 and SPI D-7.
- 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, 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 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, 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.
- This products must be stored at temperatures between 60° F to 90° F (15 °C to 30 °C).
- Minimum material/container temperature for spray application is 70°F (21 °C).
- Liquid temperature in drums during application 70°F (21°C) – 100°F (-13°C).
- Apply POLYSHEILD SS-100™ when surface and air temperature is above 40°F (5°C) and rising and 7°F (-13°C) above dew point.
- 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 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.

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