POLYSHIELD HT™ 100F UB
ELASTOMERIC POLYUREA

DESCRIPTION

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

FEATURES

POLYSHIELD HT™ 100F UB is available with SPI’s cutting-edge Ultra Bond™ technology. SPI’s advanced Ultra Bond™ chemistry is coined “the duct tape molecule”. Ultra Bond™ has the unique advantage of adhering to most properly prepared organic and inorganic (new and aged) surfaces without requiring a primer. Like duct tape, POLYSHIELD HT™ 100F UB with Ultra Bond™ gains adhesion over time.

- As with most coatings, there is a re-coat window that presents a lack of inter-coat adhesion. The UB™ molecule mitigates this risk during installation.
- Fast setting to allow final coating thickness to be achieved in one application.
- 100% solid, no solvents, and zero VOCs.
- High dry temperature stability to 250°F (121°C) with intermittent temperatures to 300°F (148°C).
- High abrasion resistance.
- High elongation for bridging cracks.
- Excellent encapsulation characteristics.
- Compliant with FDA/USDA for incidental food contact. Contact SPI for more information.

RECOMMENDED USES

- Coating for all types of steel infrastructure, including pipes, bridges, power line poles and structures, transportation and rail systems, and other urban applications such as rebar, guardrails, signage, grates, valves, and tanks, to protect from corrosion.
- Coating over geotextile for such applications as earthen containment, primary and secondary containment, etc.
- Can be used as liner for concrete tanks, floors, ponds, reservoirs, dikes, tunnels, bridges, and other concrete infrastructure.
- Apply as a topcoat to existing membranes, or use to repair inferior or degraded membranes.
- Encapsulate asbestos, lead paint, or other dry hazardous materials (consult SPI).
- Re-coat over other polymer based substrates and/or coatings.
- Concrete parking decks, garages, and other structures.
- Repair polyurea, polyurethane hybrid, and other lining types (consult SPI).
- Rock shield for pipelines.
- Bedliners, trailers, and SUV’s.
- Wastewater infrastructure, such as protecting from H₂S gas.
- Onshore and offshore marine and high salt environment corrosion and current protection.

TYPICAL PHYSICAL PROPERTIES*

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ 70 mils ± 20 (1.7 mm)</td>
<td></td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>&gt; 3,900 psi (27 MPa)</td>
</tr>
<tr>
<td>ASTM D412-06a</td>
<td></td>
</tr>
<tr>
<td>Elongation</td>
<td>&gt; 325%</td>
</tr>
<tr>
<td>ASTM D412-06a</td>
<td></td>
</tr>
<tr>
<td>Hardness (Shore A)</td>
<td>96 ± 5</td>
</tr>
<tr>
<td>ASTM D2240</td>
<td></td>
</tr>
<tr>
<td>Hardness (Shore D)</td>
<td>50 ± 5</td>
</tr>
<tr>
<td>ASTM D2240</td>
<td></td>
</tr>
<tr>
<td>100% Modulus</td>
<td>1,200 psi ± 100 (8 MPa)</td>
</tr>
<tr>
<td>ASTM D412</td>
<td></td>
</tr>
<tr>
<td>300% Modulus</td>
<td>3,010 psi ± 100 (21 MPa)</td>
</tr>
<tr>
<td>ASTM D412</td>
<td></td>
</tr>
<tr>
<td>Tear Resistance</td>
<td>370 PLI ± 50 (64 KN/m)</td>
</tr>
<tr>
<td>ASTM D624</td>
<td></td>
</tr>
<tr>
<td>Exposure Temperature**</td>
<td>-50 - +200°F (-45 - +93°C)</td>
</tr>
</tbody>
</table>

CURING SCHEDULE

<table>
<thead>
<tr>
<th>Property</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gel</td>
<td>± 5 sec.</td>
</tr>
<tr>
<td>Tack Free</td>
<td>± 7 sec.</td>
</tr>
<tr>
<td>Post Cure***</td>
<td>24 hour</td>
</tr>
<tr>
<td>Recoaat</td>
<td>0 - 12 hours</td>
</tr>
</tbody>
</table>

* All cured film properties are approximate since processing parameters, ad-mixture types, and quantities change physical properties of the cured elastomer. Elevated temperatures will accelerate the curing process and shorten the re-coat window.

** Test performed in a dry, static environment.

*** Complete polymerization to achieve final strength can take up to several days or weeks, depending on a variety of conditions or product type. 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.

The samples for all tests on this technical data sheet were sprayed with Graco HXP3 @ 2,800 psi (19 MPa) dynamic pressure at the gun. Proportioning machine primary heater and hose heat - 170°F (77°C) Graco MP Fusion gun with 29/29 mixing chamber with .040 ceramtip.
Thoroughly agitate the “B” components of this product prior to application. Use a SPI folding blade mixer or equivalent equipment approved by SPI. Install mixer through the extra air specific 2” bung hole provided on all “B” drums. Care must be taken not to cross contaminate the individual components with the mixing equipment; for best mixing results, supply the SPI mixer with 25 cfm of air at 100 psi. Thinning is not required. Using any thinner may adversely affect product performance.

| Solids by Volume | 100% |
| Solids by Weight | 100% |
| Volatile Organic Compounds | 0 lbs./gal. (0 g/l) |
| Theoretical Coverage DFT | 100 sq. ft. @ 16 mils/gal |
| Weight per gallon (approx.) | 8.8 lbs. (4.0 kg) |
| Number of coats | 1 - 2 as needed |
| Mix Ratio (by volume) | 1 “A” : 1 “B” |
| Viscosity 77°F (25°C) | A: 400 ± 25 cPs  
B: 425 ± 25 cPs |
| Shelf Life Unopened Containers at 60 - 90°F (15 - 32°C) | 6 Months |

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

POLYSHIELD HT™ 100F UB is available in SPI standard colors (Sand, Medium Grey, and Black). Custom colors available upon request. Note: POLYSHIELD HT™ 100F UB is an aromatic polyurea. Therefore, with all aromatics, color change and superficial oxidation will occur. SPI aliphatic polyurea, urethane, polyaspartic, and other suitable topcoats can be used where long-term color stability and increased longevity in full sun exposure are of critical importance.

This product is sold in standard 110 gallon drum sets and 550 gallon tote sets. Available in other container sizes. Contact SPI sales representative for further information. Non-standard containers may require a longer lead time.

Apply POLYSHIELD HT™ 100F UB only to clean, dry, sound, surfaces free of loose particles or other foreign matter. POLYSHIELD HT™ 100F UB can be sprayed over a broad range of ambient and substrate temperatures. It is recommended that POLYSHIELD HT™ 100F UB be sprayed in multi-directional (north/south - east/west) passes to ensure uniform thickness. Contact SPI technical service personnel for specific surface preparation for your application.

COMMON SUBSTRATES:
STEEL: 4-5 mil anchor profile is best for maximum adhesion and varies per application and conditions; adhere to proper SSPC standards.
WOOD: Apply polyurea onto a clean, dry, and sanded surface; free from burrs, splinters and loose debris. (It is recommended to prime wood and other porous surfaces before application of heated, fast-set polyureas to reduce pin holing).
CONCRETE: Prepare concrete in accordance with SSPC/NACE Standards and SPI Concrete Prep Guide.
PREVIOUSLY APPLIED COATINGS: SPI recommends UB™ (ULTRA BOND™) products over existing coatings that are past the recoat window and/or application over other coatings. Contact SPI for additional information.

NOTE: It is recommended that existing surfaces be power washed with 2500—3500 psi water pressure to enhance adhesion of POLYSHIELD HT™ 100F UB. If there is a possibility of surface contamination, scrub with a solution of 1/4 tsp Dawn detergent and 1 tbsp of vinegar, per 1 gallon of warm water. Follow with a thorough water rinse. If there is oxidation on the surface of the existing substrate; it must be removed prior to application of POLYSHIELD HT™ 100F UB. Removal of oxidation can be done via mechanical methods to insure the POLYSHIELD HT™ 100 F UB has a sound substrate to adhere to. The use of SPI Prep Wipe™ solution will tack up the existing polyurea coating and help promote bonding of the POLYSHIELD HT™ 100F UB.

On all above listed substrates and others, please contact SPI Sales or Technical Support for more information specific to your application, including industry standards such as SSPC and NACE. Adhesion tests are always recommended prior to application.

Thoroughly agitate the “B” components of this product prior to application. Use a SPI folding blade mixer or equivalent equipment approved by SPI. Install mixer through the extra air specific 2” bung hole provided on all “B” drums. Care must be taken not to cross contaminate the individual components with the mixing equipment; for best mixing results, supply the SPI mixer with 25 cfm of air at 100 psi. Thinning is not required. Using any thinner may adversely affect product performance.

MACHINES:

<table>
<thead>
<tr>
<th>Machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRACO (Gusmer, Glasscraft)</td>
</tr>
</tbody>
</table>
| - A-25*  
- A-XP1  
- E-10 HP  
- E-20*  
- E-30*  
- E-XP1  
- E-XP2  
- H-20/35 Pro  
- H-25*  
- H3500  
- H-40*  
- H-50*  
- HV-20/35  
- H-XP2  
- H-XP3  
- Reactor2 E-XP2  
- Reactor2 H-XP2  
- Reactor2 H-XP3  
- Reactor2 E-30*  
- Reactor2 H-30*  
- Reactor2 H-40*  
- Reactor2 H-50*  

*Expands flow capacity of each machine by 20%.
Polyspray, LTD.
1-800-424-9300 INT'L 1-703-527-3887.

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. CO₂ 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 complying with applicable health and safety standards shall be worn when handling this product. Cover as much of the exposed skin area as possible with appropriate clothing. Refer to safety data sheet (SDS).

RESPIRATORY PROTECTION: Harmful if inhaled and may cause allergy or asthma symptoms. Ensure adequate ventilation. If the respirator is the sole means of protection, use a full-face supplied respirator. Use respirators and components tested and approved under appropriate government standards such as OSHA 29CFR 1910.134, NIOSH (US), or CEN (EU). 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.

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 by the person applying polymers.

For the most up to date technical data sheet and/or safety data sheet visit our website at www.specialty-products.com.
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