

## DESCRIPTION

**K5™ UB is an ultra high-strength, high-elongation polyurea, originally developed as a resilient blast resistant polymer. Soon after, it was discovered that K5™ UB is exceptionally resistant to abrasion, compared to other spray applied coatings. K5™ UB can be sprayed on to virtually any surface configuration, at any thickness. Therefore, it can be selectively applied to high wear areas. Unlike most spray-applied polyureas, K5™ 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, K5™ UB with ULTRA BOND™ gains adhesion over time.**

## FEATURES

- Self-priming on most substrates.
- Impact absorbing properties.
- Sound dampening noise control properties.
- Low temperature flexibility.
- Seamless, monolithic application.
- Light-weight.
- Compliant with FDA/USDA for incidental food contact.

## RECOMMENDED USES

Abrasion resistant liner for:

- Chutes and hoppers
- Silos
- Screw conveyors
- Aquatic animal, water ride basins
- Slurry tanks and pipelines
- Truck liners
- Cyclones
- Classifier and shaker screens
- Aquatic animal habitats and water ride basins
- Protective coating for trailers, dump trucks, and heavy equipment

Use K5™ UB with or without broadcast aggregate to provide tough durable flooring system.

## COLORS

K5™ UB is available in SPI standard colors (Sand, Medium Grey, and Black). Custom colors available upon request. Note: In continuous full-light exposure white or very light colors will yellow over a period of time. K5™ UB is available in a high-pigment, UV inhibited formulation for stand-alone applications, such as roofs and containment liners. Aliphatic urethane and other suitable topcoats can be used where long-term color stability and increased longevity in full sun exposure are of critical importance.

## PACKAGING

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

## DRY PROPERTIES\*

@ 34 mils (0.8 mm)	
<b>Tensile Strength ASTM D412</b>	± 4,000 psi (25.25 mpa)
<b>Elongation ASTM D638</b>	315% ± 25
<b>Hardness (Shore A) ASTM D2240</b>	± 96 ± 5
<b>Hardness (Shore D) ASTM D2240-81</b>	± 57 ± 5
<b>100% Modulus ASTM D412</b>	1,800 psi (12 mpa) ± 5%
<b>200% Modulus ASTM D412</b>	3,000 psi (21 mpa) ± 5%
<b>300 % Modulus ASTM D412</b>	4,700 psi (32 mpa) ± 5%
<b>Tear Resistance ASTM D624</b>	690 PLI (91 KN/m) ± 50
<b>Service Temperature</b>	-40° - +200F° (-45° - +93°C)

\*All cured film properties are approximate since processing parameter, ad-mixture types, and quantities change physical properties of the cured elastomer 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. It is recommended that oxidized surfaces be power washed with 2500—3500 psi water pressure to achieve maximum adhesion of K5™ UB. If there is a possibility of surface contamination, scrub with a solution of 1/4 tsp. Dawn detergent plus 1 tbsp. of vinegar, per 1 gallon of warm water, followed by a thorough water rinse.

## WET PROPERTIES

<b>Solids by Volume</b>	100%
<b>Solids by Weight</b>	100%
<b>Volatile Organic Compounds</b>	0 lbs./gal (0 g/l)
<b>Theoretical Coverage DFT</b>	100 sq. ft. @ 16 mils/gal
<b>Weight per gallon (approx.)</b>	8.9 lbs. (4.05 kg)
<b>Number of coats</b>	1 - 3
<b>Mix Ratio</b>	1 "A" : 1 "B"
<b>Viscosity @77°F (25°C)</b>	A: 1300 ± 150 cPs B: 300 ± 50 cPs
<b>Shelf Life Unopened Containers @ 60 - 90°F (15 - 32°C)</b>	Six Months

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

## CURING SCHEDULE

<b>Gel</b>	± 12 sec
<b>Tack Free</b>	± 20 sec
<b>Post Cure**</b>	24 hour
<b>Recoat</b>	2 min - 12 hours

\*\*Complete polymerization to achieve final strength can take up to several days or weeks, depending on a variety of conditions or product type. The samples for tests were sprayed with Graco HXP3 @ 2,500 psi dynamic pressure (17 mpa). Primaries/Hose Heat 170°F (77°C) Graco MP Fusion Gun with 29/29 mixing chamber.

## TEST INFORMATION

<b>ABRASION RESISTANCE ASTM D4060 1000 g - 10,000 cycles</b>	H-18 wheel	33 mg loss
	CS-17 wheel	0.2 mg loss
<b>Mandrel Bend Test ASTM D522-93a</b>	Passed	Mandrel Size 1" Test Temp -60°F (-51°C)

## GENERAL APPLICATION INSTRUCTIONS

Apply K5™ UB to only clean, dry, sound surfaces free of loose particles or other foreign matter. A primer may be required; subject to type and condition of the substrate. NOTE: In the event that the use of a primer is not practical, SPI AE-4 ad-mixture may be used with the K5™ UB on most properly prepared inorganic substrates to enhance adhesion. Call technical service personnel for specific recommendations. K5™ UB can be sprayed over a broad range of ambient temperatures. Consult technical service for specific recommendations. It is recommended that K5™ UB 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.

## RECOMMENDED EQUIPMENT SETTINGS

- Standard 1:1 ratio, heated, plural-component equipment developing a minimum of 2000 psi (14 mpa) dynamic pressure will adequately spray K5™ UB. These include Reactor HXP3, HXP2, EXP2, H-25, Graco 20/35, 20/35 Pro, H-3500, HV-20/35, PMC GH-25, GH-40, PHX-25, and PXH-40. Gun models include Graco Fusion MP, Gap Pro, Glass Craft P2, P2 Elite, P2 Elite "C", GX7-DI, and GX-8 Pro. Other application equipment may be acceptable depending on product and application. Contact SPI technical service for specifics.
- 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), utilizing an impingement mix gun such as MP Fusion or GX7-DI gun

## LIMITATIONS

This product is for professional use only.

This product must be stored at temperatures between 60 – 90F (15 – 32C).

Apply product when surface and air temperatures are above 40°F (5°C) and the surface temperature is at least 5°F (3°C) above dew point and rising.

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.

Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected. CO<sub>2</sub> pressure can develop. Do not attempt to use contaminated material.

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 2" bung hole provided on all "B" drums. Care must be taken not to cross contaminate the individual components with

## GENERAL SAFETY, TOXICITY, & HEALTH

CLEAN UP: DPM, NMP, and Polyclean

Safety Data Sheets are available for this coating material. Any individual who may come in contact with these products should read and understand the S.D.S. **CHEMTREC EMERGENCY NUMBER 1-800-424-9300 INT'L 1-703-527-3887.**

WARNING: Contact with skin or inhalation of vapors may cause an allergic reaction. 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, 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, 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.

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