



## 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.**

## FEATURES

- **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.**
- **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.**
- 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.

## TYPICAL PHYSICAL 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 parameters, admixture 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.

\*\* Test performed in a dry, static environment.

## 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.

## INDUSTRIES

- **Infrastructure** - Water, Transportation, Commercial & Industrial, Rehab/Retrofitting Communications.
- **Energy** - Oil & Gas, The Electric Grid, Nuclear, Wind, Hydro-Electric (Turbine).
- **Engineering** - OEM, Custom Product Formulations, Toll Blending, Bedliners & Equipment Coatings, Defense.

## TEST INFORMATION

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

## 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</b> <b>@77°F (25°C)</b>	A: 1400 ± 100 cPs B: 225 ± 25 cPs
<b>Shelf Life Unopened Containers</b> <b>@ 60 - 90°F (15 - 32°C)</b>	6 Months

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

## 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.

## GENERAL APPLICATION INSTRUCTIONS

Apply K5™ UB only to clean, dry, sound surfaces free of loose particles or other foreign matter. K5™ UB can be sprayed over a broad range of ambient and substrate temperatures. It is recommended that K5™ 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: 2-5 mil anchor profile is best for maximum adhesion and varies per application and conditions; adhere to proper SSPC

standards.

NON-FERROUS METALS: (minimum recommended surface preparation) Prepare surface in accordance to SSPC-SP16 (Brush-off Blast Cleaning of Non-Ferrous Metals)

WOOD: Clean, dry and sanded for a smooth (to remove burs, splinters, loose debris) surface in which to apply polyurea onto. (It is recommended to prime wood and other porous surfaces before application of heated, fast-set polyureas to reduce pin holing)

CONCRETE: (minimum recommended surface preparation) Prepare concrete in accordance with SPI Concrete Prep Guide and SSPC/NACE Standards.

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 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. The use of SPI Prep Wipe™ solution will tack up the existing polyurea coating and help promote bonding of the K5™ 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.

## MIXING & THINNING

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 the mixing equipment. Thinning is not required. Using any thinner may adversely affect product performance.

## RECOMMENDED EQUIPMENT SETTINGS

MACHINES:	
<b>GRACO</b> (Gusmer, Glass-craft)	<ul style="list-style-type: none"> <li>E-XP2</li> <li>H-XP2</li> <li>H-XP3</li> </ul>
<b>PMC</b>	<ul style="list-style-type: none"> <li>PHX-40</li> </ul>
GUNS:	
<b>GRACO</b> (Gusmer, Glass-craft)	<ul style="list-style-type: none"> <li>Fusion MP</li> <li>GX7-DI</li> <li>GX7-400</li> </ul>

- Standard 1:1 ratio, heated, plural-component equipment developing a minimum of 2500 psi (13.9 MPa) dynamic pressure with heating capabilities to 165°F (74°C) will adequately spray K5® UB.
- Machines capable of producing a higher dynamic psi may

be required depending on the service environment the K5<sup>®</sup> UB will be exposed to. Consult SPI technical service personnel for additional information.

- Primary heater temperature 160-170°F (71-77°C).
- Hose temperature 160-170°F (71-77°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.
- Do not use mixing chambers with output greater than 1.5 gallons per minute. Consult SPI technical service personnel for additional information.

If you own a machine that is not listed above please contact your SPI representative for information and instructions.

## LIMITATIONS

K5<sup>™</sup> UB is for professional use only.

K5<sup>™</sup> UB must be stored at temperatures between 60 – 90°F (15 – 32°C).

Liquid temperature in containers during application 70–100°F (21–38°C).

Apply K5<sup>™</sup> UB 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.

If you own a machine that is not listed above please contact your SPI representative for information and instructions.

For latest technical data sheet revision visit our website at [www.specialty-products.com](http://www.specialty-products.com).

## 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:** 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.



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### WARRANTY & DISCLAIMER

VF Specialty Products 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. VF Specialty Products 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 are 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. Failure to apply the product within the parameters stated on this document shall void the warranty. VF SPECIALTY PRODUCTS, INC. MAKES NO WARRANTY OF MERCHANTABILITY OF THE PRODUCT OR OF FITNESS OF THE PRODUCT FOR ANY PARTICULAR PURPOSE. VF Specialty Products makes no warranty as to the quality of any product modified, supplemented, tinted, or altered in any way after it leaves the manufacturing plant. VF Specialty Products 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. The liability of VF Specialty Products for any nonconformity of the product to its technical specifications shall be limited to replacement of the product. The sole exclusive remedy of buyer, which is to have VF Specialty Products replace any nonconforming product at no cost to buyer, is conditioned upon buyer notifying VF Specialty Products or its distributor in writing of such defect within thirty days of the discovery of such defect. VF Specialty Products shall not be liable for any direct, incidental, or consequential damages resulting from any breach of warranty. The data presented herein is intended for professional applicators or those persons who purchase or utilize this product in the normal course of their business. The potential user must perform any pertinent tests in order to determine the product's performance and suitability in the intended application, since final determination of fitness of the product for any particular use is the responsibility of the buyer. The aforementioned data on this product is to be used as a guide and is subject to change without notice. The information herein is believed to be reliable, but unknown risks may be present. VF Specialty Products makes no warranties, expressed or implied, including patent warranties or warranties of merchantability or fitness of use, with respect to products or information set forth herein. Nothing contained herein shall constitute permission or recommendation to practice any invention covered by a patent without a license from the owner of the patent. Accordingly, the buyer assumes all risks whatsoever as to the use of these materials and buyer's exclusive remedy as to any breach of warranty, negligence, or other claim shall be limited to the purchase price of the materials. Failure to adhere to any recommended procedures shall relieve VF Specialty Products of all liability with respect to the materials and the use thereof.

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**Product & Equipment Technical Assistance**  
**24 hours - 7 days a week 800 627 0773**



SPI Website

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