

DESCRIPTION

K5™ is an ultra high-strength, high-elongation 100% pure polyurea, originally developed as a resilient blast resistant polymer. Soon after, it was discovered that K5™ is exceptionally resistant to abrasion, compared to other spray applied coatings. K5™ can be sprayed on to virtually any surface configuration, at any thickness. Therefore, it can be selectively applied to high wear areas.

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

COLORS

K5™ 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™ 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)	
Tensile Strength ASTM D638	± 5,500 psi (34.75 MPa)
Elongation ASTM D638	± 300%
Hardness (Shore A) ASTM D2240	96 ± 5
Hardness (Shore D) ASTM D2240-81	57 ± 5
100% Modulus ASTM D412	1,800 psi (12 MPa) ± 5%
200% Modulus ASTM D412	3,000 psi (21 MPa) ± 5%
300% Modulus ASTM D412	4,700 psi (32 MPa) ± 5%
Tear Resistance ASTM D624	690 PLI (91 KN/m) ± 50
Exposure Temperature**	-40° - +200F° (-40° - +93°C)

CURING SCHEDULE

Gel	± 9 sec
Tack Free	± 22 sec
Post Cure***	24 hour
Recoat	2 min - 12 hours

* All cured film properties are approximate since processing parameter, 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 tests were sprayed with Graco HXP3 @ 2,500 psi (17 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

WET PROPERTIES

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.)	8.9 lbs. (4.05 kg)
Number of coats	1 - 3
Mix Ratio	1 "A" : 1 "B"
Viscosity (cps) @77°F (25°C)	A: 1400 ± 100 mPa.s B: 200 ± 50 mPa.s
Shelf Life Unopened Containers @ 60 - 90°F (15 - 32°C)	6 Months

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

TEST INFORMATION

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

GENERAL APPLICATION INSTRUCTIONS

Apply K5™ only to clean, dry, sound surfaces free of loose particles or other foreign matter. K5™ can be sprayed over a broad range of ambient and substrate temperatures. It is recommended that K5™ 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.

NON-FERROUS METALS: Prepare surface in accordance to SSPC-SP16 (Brush-off Blast Cleaning of Non-Ferrous Metals), It is imperative that the user perform their own adhesion tests. Contact SPI technical service personnel for more information.

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 and to learn more about UB™ products.

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 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.

RECOMMENDED EQUIPMENT SETTINGS

MACHINES:

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

- 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™.
- Machines capable of producing a higher dynamic psi may be required depending on the service environment the K5™ 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™ is for professional use only. User must be proficient in the application of K5™ and the use of the high pressure heated plural component equipment used to apply it.

K5™ must be stored at temperatures between 60 – 90°F (15 – 32°C).

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

Apply K5™ 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. CO₂ 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 the most up to date technical data sheet and/or safety data sheet visit our website at www.specialty-products.com.

GENERAL SAFETY, TOXICITY, & HEALTH

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**

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.

CLEAN UP: DPM or NMP.

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: 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.



SEAMLESS SOLUTIONS FOR OVER 40 YEARS



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.

SPI The Single Source Solution Since 1974
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Product & Equipment Technical Assistance
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SPI Media



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