SPI SPECIALTY PRODUCTS, INC.
SEAMLESS SOLUTIONS FOR OVER 40 YEARS

ULTRA BOND™ HT FC

HIGH STRENGTH, SUPERIOR ADHESION, SPRAY APPLIED POLYUREA

PRELIMINARY

DESCRIPTION

ULTRA BOND™ HT FC is a high tensile, high elongation, high build, fast set, elastomer, that is compliant with FDA 21 CFR 175 300 (c)(d) high temperature heat-sterilize, non-acid aqueous food contact. Unlike most spray-applied polyureas, ULTRA BOND™ HT FC 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, ULTRA BOND™ HT FC with ULTRA BOND™ gains adhesion over time.

FEATURES

- FDA compliant for incidental and direct food contact.
- 100% solids, no solvents, and no VOCs.

In house testing has shown excellent adhesion to certain clean, dry, surfaces including:

- Primers past recoat window
- Latex rubber
- Crumb rubber surfaces
- Melamine
- Firestone SBS roofing membrane
- Epoxy
- SBR rubber
- Automotive finishes
- Roofing
- Glass
- Sarnafil Vinyl roofing membrane
- Line-X bed liner

RECOMMENDED USES

- Coating over organic primers that are past their recoat window; including SPI POLYPRIME™ 100 and EP™ 100.
- Repair of polyurea liners.
- Texturing aged polyurea.
- Top coat compatible for existing membrane liners.
- Recoat urethane liners.
- Recoat over other polymer based substrates used for flooring, wall covering, and infrastructure protection.

COLORS

ULTRA BOND™ HT FC is available in SPI standard colors (Sand, Medium Grey, and Black). Custom colors available upon request. Note: ULTRA BOND™ HT FC is an aromatic polyurea; therefore, as with all aromatics color change and superficial oxidation will occur. 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.

DRY PROPERTIES*

@ 34 mils (0.8 mm)	
Tensile Strength ASTM D638	± 3,966 psi (28 mpa)
Elongation ASTM D638	± 526%
Hardness (Shore D) ASTM D2240-81	42 ± 5
100 % Modulus ASTM D412	1,127 psi (8 mpa) ± 100
300 % Modulus ASTM D412	2,000 psi (14 mpa) ± 100
Tear Resistance ASTM D624	457 PLI (80 KN/m) ± 50
Service Temperature	-60°F - +250° (-50°C - +121°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.

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.

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)	8.6 lbs. (3.87 kg)
Number of coats	1 - 2
Mix Ratio	1 "A" : 1 "B"
Viscosity (cps)	A: 370 ± 50 cps B: 700 ± 50 cps
Shelf Life Unopened Containers @ 60 - 90°F (15 - 32°C)	Six Months

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

CURING SCHEDULE

Gel	± 8 sec.
Tack Free	12 sec.
Post Cure**	24 hour
Recoat	0 - 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) MP Fusion Gun with 2929 mixing chamber.

NOTE: Polymer formulations vary. It is recommended that adhesion tests be performed before commencing any project using ULTRA BOND™ HT FC. For adhesion verification SPI encourages you to submit your (substrate) sample to SPI to be sprayed and tested.

TEST INFORMATION

ABRASION RESISTANCE ASTM D4060 1000 g - 1000 cycles	H-18 wheel	36 mg. loss
	CS-17 wheel	5.3 mg. loss
FDA Extraction Test 21 CFR 175.300(e)(4)(i) 2 hours at 250°F	0.26 mg/in^2	

MIXING & THINNING

The polyol "B" component must be thoroughly power mixed each day, prior to use. Contact a SPI technician regarding proper mixing equipment.

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

GENERAL APPLICATION INSTRUCTIONS

Apply ULTRA BOND™ HT FC 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. ULTRA BOND™ HT FC can be sprayed over a broad range of ambient temperatures. Consult technical service for specific recommendations. It is recommended that ULTRA BOND™ HT FC 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. Consult technical service for specific primer, temperature and mixing equipment recommendations.

RECOMMENDED EQUIPMENT SETTINGS

- Standard 1:1 ratio, heated, plural-component equipment developing a minimum of 2000 psi (14 mpa) dynamic pressure with heating capabilities to 175°F (79°C) will adequately spray ULTRA BOND™ HT FC. These include Graco 20/35, 20/35 Pro, H-3500, HV 20/35, Reactor E-XP1, E-XP2, H-XP2, H-XP3, and SPI Gusmer 25/25. Gun models include Graco Fusion MP, Gap Pro, GX7-DI, and GX-8 Pro gun
- 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—90°F (15—30°C).
- Liquid temperature in drums during application 70—100°F (21—38°C).
- 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.
- Minimum material/container temperature for spray application is 70°F (21°C).
- Avoid moisture contamination in containers. Containers should not be released if contamination is suspected. CO_2 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 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.

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. 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, carbon dioxide 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 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. 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.

WARRANTY & DISCLAIMER

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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. Specialty Products, Inc. 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 Specialty Products, Inc. of all liability with respect to the materials and the use thereof.

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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

CONTACT US

2410 104th St. C. S. Suite D, Lakewood, WA 98499
WWW.SPECIALTY-PRODUCTS.COM
1 800 627 0773 **FAX** 253 588 7196
info@specialty-products.com

SSPC The Society For Protective Coatings

PDA

PMC POLYMAC-USA POLYURETHANE MACHINERY CORPORATION

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