



AQUASEAL™ HI-RISE X3

ELASTOMERIC BRIDGING POLYUREA

PRELIMINARY

DESCRIPTION

AQUASEAL™ HI-RISE X3 (X3) is a unique elastomer that expands approximately 300% of its original volume during the spray application. In place yield is ±50 mils per gallon per 100 sq. ft. when sprayed through a SPI LOCK N LOAD™ gun. As X3 rises, it bridges substrate imperfections to virtually eliminate blowholes and pinholes when applied to porous surfaces such as vertical poured concrete and concrete masonry units (cmu). X3 is formulated with the “ULTRA BOND™” molecule therefore is self-priming in most instances.

FEATURES

- 100% solids, no solvents, and no VOCs.
- Extended tack time to allow deep surface penetration.
- Compliant with FDA/USDA for incidental food contact.

Unlike most spray-applied polyureas, X3 has the unique advantage of adhering to many polymeric substrates, both new and aged, typically without the use of primers or extensive surface preparation.

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

- Primers past recoat window
- Concrete
- Crumb Rubber surfaces
- Latex rubber
- Certain roofing membranes
- SBR rubber
- Shotcrete substrates
- Aged polyurea
- Glass
- Epoxy
- Wood
- Most metals

Note: Polymer formulations vary. It is recommended that adhesion tests be performed before commencing any project using X3. For adhesion verification SPI encourages you to submit your (substrate) sample to SPI to be sprayed and tested.

RECOMMENDED USES

- Spray applied basecoat to minimize surface preparation labor
- To fill and protect a variety of porous surfaces.
- Waterproofing exterior basements and foundations.
- Protective elastomer for sprayed-in-place urethane foam.
- Roof Systems (metal, concrete, wood, etc.).
- Repair existing containment liners.
- To fill or repair control joints, random cracks, and shallow spalls on concrete surfaces.
- Earthen containment lining used with or without geotextile fabric.
- Wastewater containment as a re-surfacer.

COLORS

X3 is available in Neutral, Medium Grey, and Sand. X3 is photosensitive and will change color in a matter of minutes from spray application. Note: X3 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

Service Temperature	-50°F - +200° (-45°C - +93°C)
*Cured film properties sprayed with low pressure; unheated proportioner	
Tensile Strength ASTM D638	± 180 psi (1.2 mpa)
R-Value (initial)	2.7 per inch
Elongation ASTM D638	± 243%
Hardness (Shore A) ASTM D2240-81	50 ± 5
Adhesion to concrete	> 100 psi

*The samples for tests were sprayed with LPG Proportioner with SPI Lock N Load gun using the SPI polyurea nucleation kit.

*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.

CURING SCHEDULE

Gel	± 30 - 90 sec.
Tack Free	± 4 - 6 min.
Post Cure**	24 hour
Recoat	0 - 24 hours

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

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.)	8.55 lbs. (3.87 kg)
Number of coats	1 - 2
Mix Ratio	1 "A" : 1 "B"
Viscosity (cps)	A: 800 approx. A: 700 approx.
Shelf Life Unopened Containers @ 60 - 90°F (15 - 32°C)	Six Months

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

SURFACE PREPARATION

It is recommended that oxidized polymeric surfaces be power washed with 2500 - 3500 psi water pressure to achieve maximum adhesion of X3™. 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.

SPI Prep Wipe™ applied prior to application of X3 generally increases adhesion to certain finishes. For applications to concrete refer to SPI Concrete Prep Guide.

TEST INFORMATION

ABRASION RESISTANCE ASTM D4060 1000 g - 1000 cycles	H-18 wheel	54.8 mg loss
	CS-17 wheel	4.4 mg loss
Mandrel Bend Test ASTM D522-93a	Passed Mandrel Size - 1" Test Temp -60°F (-51°C)	

MIXING & THINNING

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

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

GENERAL APPLICATION INSTRUCTIONS

Apply X3 only to clean, dry, sound surfaces free of loose particles or other foreign matter. A primer may be required, subject to type and/or condition of the substrate. Consult technical service personnel for specific primer

recommendations and substrate preparation procedures. X3 can be sprayed over a broad range of ambient and substrate temperatures. Contact technical service personnel for specific recommendations, pricing, and availability of spray and auxiliary equipment.

To reduce the possibility of blisters and blow holes when applying X3 to cementitious or other porous surfaces:

1. Do not apply on damp or wet substrates.
2. Start spray application after peak heat of the day when surface is cooling.
3. Do not apply on areas in direct sunlight.
4. The temperature of the X3 material and hose temperature should be approximately the same temperature as the substrate being sprayed. Adhere to instructions on container label.

It is recommended that X3 be sprayed in multi-directional (north-south/east-west) passes to ensure uniform thickness. To achieve optimum mix and rise, nucleation at the gun needs to be a minimum of 9 cfm at 90 psi.

To spray X3 using the nucleating kit processed with a SPI synergy proportioner, the liquid temperature must be a minimum 80°F (21°C) maximum 100°F (38°C) and optimum 90°F (32°C).

Follow the instructions attached to "A" and "B" containers.

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.
- Undried air exposed to liquid components will reduce physical properties of the cured coating.
- This product has not been tested for flame spread or smoke development.
- Do not apply X3 as a waterproofing barrier on the negative side of a structure where hydrostatic pressure is possible.
- Minimum material/container temperature for spray application is 70°F (21°C).
- 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 released if contamination is suspected. CO₂ created pressure can develop. Do not attempt to use contaminated material.

Note: This product is formulated using two components (Component "A"/Component "B"). 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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