LINE-X XS-100

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PRODUCT MANUFACTURER

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GENERAL PRODUCT DESCRIPTION

LINE-X XS-100 is a two-component, zero VOC (volatile organic compound), 100% solids high performance polyurea hybrid spray elastomer system. LINE-X XS-100 offers outstanding performance and superior elastomeric protective coatings for various substrates. LINE-X XS-100 is designed as a user-friendly product with a built-in activator for quick cure times, and offers exceptional adhesion properties on properly prepared substrates. The high-performance formulation of LINE-X XS-100 produces an excellent skin formation for chemical resistance and moisture protection.

APPLICATION GUIDELINES

Both the Iso "A" Side and Resin "B" Side should be pre-conditioned between 70°F to 90°F (21°C to 32°C) before application. LINE-X XS-100 must be applied using high-pressure, plural component, heated, 1:1 by volume, spray equipment with 2,000 psi fluid pressure capability. LINE-X XS-100 material (both Iso "A" Side and Resin "B" Side) should be heated between 140°F to 160°F (60°C to 71°C). Spray equipment must generate adequate fluid pressure for proper mixing and best polymerization results.

APPLICATION EQUIPMENT

LINE-X XS-100 is designed to be sprayed through high-pressure impingement mixing equipment. Plural component spray equipment must have material heat-control capability, 1:1 by volume, and sprayable with round or flat tip. Refer to equipment manufacturer for equipment specifics and accessories.

EQUIPMENT SETTING PARAMETERS

Iso "A" and Polyol "B" components must be pumped by low-pressure transfer pumps to a suitable high-pressure proportional pumping system.

Temperature Settings

Iso "A" Block Heater:	140°F - 160°F
Resin "B" Block Heater:	140°F - 160°F
Hoses (Iso and Polyol):	140°F - 160°F

Hydraulic Pressure Setting

Equipment Hydraulic Pressure:	2,000 - 2,500 psi

EQUIPMENT CLEAN UP

Spray equipment should be cleaned immediately after use following equipment manufacturer's recommended procedures. Please refer to spray equipment operating and maintenance procedures for further details. LINE-X XS-100 should be cleaned with environmentally safe urethane-grade cleaners. Cleaning materials must be free of reactive contaminants such as water and alcohol. All gun cleaners and spray equipment cleaning materials must be used and disposed of as permitted under local rules and regulations.

MATERIAL STORAGE

LINE-X XS-100 has a shelf life of twelve (12) months from manufacture date in factory-sealed containers. LINE-X XS-100 should be stored between 60°F to 100°F (16°C to 38°C). Do not expose unused materials to high humidity conditions. Always provide airtight reseal conditions to unused materials. For materials that are currently connecting to the pumps, always provide as much airtight and moisture free conditions to unused materials as possible to ensure proper chemical performance. Drums should be stored on pallets to avoid direct contact with the warehouse floor/ground.

SAFETY AND HANDLING

Please refer to Safety Data Sheets (SDS) for safety and handling of this material. All personnel working with this material are expected to read and understand all safety recommendations per SDS. All Personal Protection Equipment must be properly worn to comply with worker health and safety requirements.

CHEMICAL TECHNICAL DATA

Conditions: 77°F and 50% Rel. Humidity	
Mix Ratio by Volume	1A:1B
Gel Time	6 to 9 sec.
Tack Free Time	10 to 15 sec.
Density "A" Side (lbs/gal)	9.6 ± 0.5
Density "B" Side (lbs/gal)	8.6 ± 0.5
Viscosity "A" Side	650 ± 150 cP
Viscosity "B" Side	1100 ± 100 cP

BASIC PHYSICAL PROPERTIES

All tests are performed by independent third-party material test laboratories:

- Exova Test Laboratories
- ISO 17025 Certified
- American Association for Laboratory Accreditation (A2LA)
- Truesdail Laboratories, Inc.
- Pira International Material Test Lab

Test Name	Test Method	Value
Coefficient of Friction Static Kinetic	ASTM D1894	 1.034 0.64
Dielectric Const.	ASTM D150	4.85
Dielectric Strength	ASTM D149	453 volts/mil
Dissipation Factor	ASTM D150	0.0614
Volume Resistance	ASTM D257	3.39×10^{11} ohm cm
DMA Test (Loss Modulus, E" Tg)	ASTM D4065	-38°C
Elongation	ASTM D412	91.2%
Flexural Strength	ASTM D790	1,160 psi
Flexural Modulus	ASTM D790	0.019 msi
Hardness Shore D	ASTM D2240	51 ± 2
Taber Abrasion (mg Loss/1000 cycles)	ASTM D4060 CS-17 wheel (1000gm load)	23 mg
Safe Walking Surfaces	ASTM F1637.95	0.84 - Dry 0.73 - Wet
Pull-off Test-Adhesion To CRS-Bondrite1455 To CRS-Media blast and XPM Prime	ASTM D4541	 1158 psi 2479 psi Cohesive failure
Resistance to Rapid Deformation	ASTM D2794	101 in-lbs.
Flammability of Interior Materials	FMVSS 302	Pass

Test Name	Test Method	Value
Tear Strength	ASTM D624	435 lbs/in
Tensile Strength	ASTM D412	2,250 psi
Thermal Conductivity	ASTM E1952-11	0.134 W/ Km

CHEMICAL RESISTANCES PER ASTM D543 FOR IMMERSION IN FLUIDS METHODS

LINE-X XS-100 materials are immersed in the chemicals below for a period of 7 days; physical properties of pre- and post-immersion were measured to quantify the changes in product physical properties.

Chemical Names	Hardness Change (%)	Mass Change (%)	Volume Change (%)	Elongation ASTM D412 Change (%)	Tensile Strength ASTM D412 Change (%)
Ammonium Chloride 30%	-6%	0.4%	-3%	-12%	-18%
Ammonium Hydroxide	-10%	3%	0.7%	-16%	-28%
Automotive Oil	-2%	0.43%	-1%	-4%	-6%
Aviation J.P. Fuel	-9%	5%	4%	-25%	-31%
Baking Soda 25%	-14%	2%	-2%	-3%	-19%
Benzene	-23%	21%	16%	-34%	-57%
Boric Acid 3%	2%	-12%	2%	-6%	-23%
Bleach (Chloride)	-16%	1%	0.4%	-13%	-22%
Calcium Chloride 50%	-3%	-0.73%	0.10%	-15%	-15%
Calcium Hypochloride 5%	-9%	1%	0.3%	-8%	-12%
Citric Acid 10%	-5%	2%	-0.10%	-10%	-19%
Club Soda	-14%	3%	-0.90%	-12%	-24%
Cream Soda	-17%	4%	2%	-10%	-23%
Crude Oil (Heating)	2%	0.17%	0.20%	-3%	0.89%
Diesel Fuel	-7%	3%	4%	-11%	-12%
Ethylene Glycol	-4%	2%	1%	-3%	-8%
Formic Acid 5%	-5%	8%	4%	-19%	-37%
Hydrochloric Acid 5%	-4%	2%	2%	-14%	-23%
Hydrogen Peroxide 10%	-7%	0.85%	4%	-6%	-28%
Kerosene	-6%	7%	10%	-24%	-25%
Lactic Acid 20%`	-4%	8%	5%	-15%	-29%
Mineral Spirits	-2%	-0.1%	-0.4%	-20%	-24%
Nitric Acid 10%	-13%	14%	10%	-17%	-36%
Potassium Hydroxide 50%	-6%	-0.5%	0%	-20%	-19%
Saline Solution 30%	2%	1%	3%	-13%	-23%
Sea Water	3%	2%	1%	-25%	-29%
Sodium Carbonate 10%	-14%	3%	2%	-20%	-36%
Sodium Chloride 30%	14%	2%	1%	-18%	-30%
Sodium Hydroxide 50%	-6%	0.25%	-0.3%	-18%	-11%
Sodium Hydroxide 10%	-16%	0.25%	0.6%	-19%	-22%
Sodium Sulfate 30%	-6%	2%	0.4%	-8%	-21%
Sodium Sulfate 20%	-13%	2%	0.4%	-9%	-24%
Sugar Solution 30%	-10%	2%	0.3%	-16%	-29%
Sulfuric Acid 25%	-7%	4%	4%	-19%	-19%
Sulfuric Acid 10%	-2%	2%	0.7%	-21%	-30%
Tannic Acid 40%	-2%	4%	1%	-20%	-27%
Water (H2O)	-7%	2%	0.6%	-21%	-26%

LIMITATIONS

The chemical resistance chart should be consulted prior to application; this is an exhaustive chemical compatibility list quantifying pre and post physical properties for chemicals exposure per ASTM D543. Application specific processing parameters such as temperature and operating pressure of coated objects must be considered before installing LINE-X XS-100 coatings system.

PRODUCT USER RESPONSIBILITIES

Users of LINE-X XS-100 product are responsible for reading the general guidelines, product data sheets, specifications and Safety Data Sheets (SDS) before using this material. Printed technical data and instructions are subject to change without notice. Contact your local LINE-X representative or visit our website www.LINE-X.com for current technical data instructions.

PRODUCT DISCLAIMER

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the user's responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazards listed herein are the only ones that may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and LINE-X makes no claim that these tests or any other tests accurately represent all environments.