

ENERTITE® X LOW-DENSITY, OPEN-CELL INSULATION [Intertek CCRR-1032, ICC-ES ESR 3102](#)

DESCRIPTION:

ENERTITE X is a two-component open-cell spray polyurethane foam system designed for use in residential construction and common commercial insulation applications. ENERTITE X is compatible with most common construction materials but can only be processed with ELASTOSPRAY® 8000A Isocyanate. The benefits of ENERTITE X include:

- Approved in Limited-Access Attics and Crawlspace with no ignition barrier
- Superior air sealing over conventional insulation
- Non-fibrous
- Sound control

PHYSICAL PROPERTIES ⁽¹⁾

PROPERTY	METHOD	ENERTITE X
Resin:		
Specific Gravity @ 70°F	ASTM D1638	1.25
Viscosity @ 77°F (cps)	Brookfield	700 – 900
Cured Foam:		
Density, core @ 4" lifts (pcf)	ASTM D1622	0.5 – 0.6
Open Cell Content (%)	ASTM D6226	>90
Thermal Resistance ⁽²⁾ (aged)		
R-value (ft ² hr °F/Btu in)	ASTM C518	4.0/ in @ <3.5" thickness
R-value (ft ² hr °F/Btu in)		3.6/ in @ ≥ 3.5" thickness
Tensile Strength (psi)	ASTM D1621	11.4
Thermal and Humid Aging	ASTM D2126	
158°F / 97% RH / 168 hrs	(% change)	-5.5%
Water Vapor Transmission		
Permeance	ASTM E96 (Calculated)	71.1 Perms <10.0 perms @ 7.25" thickness
		(Class III vapor retarder)
Air Leakage ⁽³⁾	ASTM E2178	Meets <0.02 @ 3.5 inch
(L/s*m ² @ 75 Pa DP)		(Air impermeable insulation)
Surface Burning Characteristics		
Flame Spread Index	ASTM E84	≤ 25
Smoke Developed Index	ASTM E84	≤ 450

ADDITIONAL TESTING, APPROVALS & CERTIFICATIONS:

- ASTM E84 (Class I)
- ICC-ES AC377 Appendix X with no ignition barrier. Approved in certain Attic and Crawlspace assemblies
- GREENGUARD and GREENGUARD Gold Certification for VOC emissions
- INTERTEK Code Compliance Research Report CCRR-1032
- Meets the requirements of CDPH Section 01350 for VOC emissions
- ASTM C1338 –Mold resistant "Pass" rating (no growth)
- ASTM D6866 Bio-Based content @ 14% (28% on resin)
- ICC-1100- Standard for Spray-applied Polyurethane Foam Plastic
- Thickness is not limited when installed behind a code-prescribed thermal barrier (per ICC-ES AC377)

Please contact your local Sales or Technical Representative for specific questions regarding ENERTITE X properties, approvals, or certifications.

RESIN PREPARATION DETAILS:

STEP 1: Mix the resin drum for a minimum of 10 – 15 minutes.

- Use a minimum 500 RPM speed agitator (mixer) with 3 sets of collapsible blades:
 - Bottom blade should be about 1-2" off bottom of the drum.
 - Middle blade positioned 10" above the bottom set of blades.
 - Top set of blades positioned 10" above the middle set of blades.

STEP 2: Ensure a minimum resin temperature of 85 - 95°F prior to spraying.

- If resin drum is <85°F, recirculate/blanket heat until resin material is 85 – 95°F.
- **If resin drum is ≥85°F, no recirculation or blanket heating is necessary.**

STEP 3: Maintain medium speed mixing of resin throughout application process.

- When mixing is halted for more than 30 minutes, repeat STEPS 1 – 3 and spray off-target for 30 seconds before proceeding to install SPF.
- Material may separate in the hose if left unattended for extended period without pressure and temperature. If so, bleed material back into drum until the line is filled with homogenous resin mix. Then repeat Steps 1 – 3 and spray unwanted product off-target until producing suitable material.

Refer to the ENERTITE X Open-cell Spray Foam Application Guide for more detailed preparation and application guidelines.

DO NOT MIX ENERTITE X WITH ANY OTHER PRODUCTS

⁽¹⁾ These physical property values and data are typical for SPF material as applied at a development facility and from samples prepared using equipment configurations pertinent to controlled lab conditions. SPF performance and actual physical properties may vary with differences in application (i.e., ambient conditions, process equipment and settings, material throughput, etc.). As a result, these published properties should be used as guidelines solely for the purpose of evaluation.

⁽²⁾ The physical property chart shows the R-value of this spray foam insulation. "R" refers to resistance to heat flow. The higher the R-value, the greater the insulating power. Refer to Installation Card and fact sheet on R-values.

⁽³⁾ Using a conversion factor of 1 L/s* m² = 0.196850394 cfm/ft², the value <0.02 L/s* m² = <0.00393 cfm/ft²

ENERTITE® X OPEN-CELL SPRAY FOAM INSULATION

GENERAL INFORMATION:

ENERTITE X is a spray polyurethane foam (SPF) system intended for installation by qualified contractors trained in the processing and application of SPF systems, as well as the plural-component polyurethane dispensing equipment required to do so. Contractors and applicators must comply with all applicable and appropriate storage, handling, processing and safety guidelines. BASF technical service personnel should be consulted in all cases where application conditions are questionable.

ENERTITE X has an estimated theoretical yield of 14,000 – 17,000 board feet per set. Actual yield performance can be in excess of or below the referenced estimated theoretical range based on factors affecting density including, however, not limited to multiple lifts, substrate texture, substrate temperature, overspray loss, windy conditions, altitude, container residue, equipment characteristics & temperatures, applicator technique, etc. For help estimating yield for this and other spray foams, please consult Spray Polyurethane Foam Alliance's SPFA-121 SPF Estimating Reference Guide.

INSTALLATION RECOMMENDATIONS AND CAUTIONS:

ENERTITE X is designed for an application rate of ½ inch to 6 inches per pass. Proper cooling or dwell time will allow for optimal results between passes (5 minutes per max pass applied). Once installed and material has cooled, it is possible to add additional applications in order to increase the overall installed thickness of SPF.

ENERTITE X is NOT designed for use as an EXTERIOR roofing system. BASF offers a separate line of products for exterior roofing applications. For more information, please contact your sales representative.

Cold-storage structures such as coolers and freezers demand special design considerations with regard to thermal insulation and moisture-vapor drive. ENERTITE X should NOT be installed in these types of constructions unless the structure was designed by a design professional for specific use as cold storage.

ENERTITE X is designed for installation in most standard construction configurations using common materials such as wood and wood products, metal and concrete. ENERTITE X has performed successfully when sprayed onto wood substrates down to 45°F using special cold weather application techniques. For heat sink-materials such as metal or concrete, ENERTITE X can be sprayed onto substrates down to 55°F, using a flash pass method. BASF recommends the use of mockups or sample spray before starting the full-scale project. This will provide an opportunity to see how all materials are installed and evaluate their properties prior to proceeding.

Please consult a BASF Representative for further information about applications using our liquid compounds.

Foam plastic materials installed in walls or ceilings may present a fire hazard unless protected by an approved, fire-resistant thermal barrier with a finish rating of not less than 15 minutes as required by building codes. Rim joists/header areas, in accordance with the IRC and IBC, may not require additional protection. Foam plastic must also be protected against ignition by code prescribed or properly tested materials in attics and crawl spaces. See relevant Building Codes and www.iccsafe.org for more information.

Conditions	A-, B-side, and Hose Temperatures (adjust ± 3° increments)	Proportioner set pressure (psi) (Spraying pressure)
Colder	140 – 150°F	1150 – 1500 (900 – 1300)
Warmer	125 – 150°F	1150 – 1500 (900 – 1300)

Caution - Failure to follow the application precautions, safety data sheet (SDS) information as well as accepted industry practices (www.spraypolyurethane.org) may result in unwanted foam physical properties and applications that may not provide the desired results. This also includes unwanted health risks such as possible respiratory issues, sensitization or eye irritations for applicators and workers located in the area being sprayed. A full understanding of the foam processing and all safety risks must be completed before spraying.

In addition to reading and understanding the SDS, all contractors and applicators must use appropriate respiratory, skin and eye Personal Protective Equipment (PPE) when handling and processing polyurethane chemical systems. Personnel should review related industry and best practice documents published by organizations such as Spray Polyurethane Foam Alliance (SPFA), OSHA, Spray Foam Coalition (SFC) and complete the American Chemistry Council's online Spray Polyurethane Foam Chemical Health & Safety Training course at www.spraypolyurethanefoam.org/training.

Also the following document is available from the Center for the Polyurethanes Industries (CPI): *Model Respiratory Protection Program for Compliance with the Occupational Safety and Health Administration's Respiratory Protection Program Standard 29 C.F.R. §1910.134*

As with all SPF systems, improper application techniques should be avoided. Examples of improper application techniques include, but are not limited to excessive thickness of SPF, off-ratio material and spraying into or under rising SPF. Potential results of improperly installed SPF include: dangerously high reaction temperatures that may result in fire and offensive odors that may or may not dissipate. Improperly installed SPF must be removed and replaced with properly installed materials. LARGE MASSES of SPF should be removed to an outside safe area, cut into smaller pieces and allowed to cool before discarding into any trash receptacle.

Odor level of spray polyurethane foam is dependent on proper application using the recommended processing parameters and proper ventilation.

All areas that are sprayed incorrectly or result in A only material, B only material, improperly mixed or off ratio materials, too thick of an application or too quick of a thickness build up, are to be removed and replaced with properly processed spray foam. All cleaning solvents and others materials are to be captured and properly disposed of and not left at the job site.

SPF insulation is combustible. High-intensity heat sources such as welding or cutting torches must not be used in contact with or in close proximity to ENERTITE X or any polyurethane foam. The insulation must not be used in areas that have a maximum service temperature greater than 180°F(82°C).

SHELF LIFE AND STORAGE CONDITIONS:

ENERTITE X has a shelf life of approximately six (6) months from the date of manufacture when stored in original, unopened containers at 50-85°F. As with all industrial chemicals, this material should be stored in a covered, secure location and never in direct sunlight. Storage temperatures above the recommended range will shorten shelf life. Storage temperatures above the recommended range may also result in elevated headspace pressure within packages.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY:

The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are only intended for sale to industrial and commercial customers. Customer assumes full responsibility for quality control, testing and determination of suitability of products for its intended application or use. We warrant that our products will meet our written liquid component specifications. We make no other warranty of any kind, either express or implied, by fact or law, including any warranty of merchantability or fitness for a particular purpose. Our total liability and customers' exclusive remedy for all proven claims is replacement of nonconforming product and in no event shall we be liable for any other damages.

While descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, they are provided for guidance only. Because many factors may affect processing or application/use, BASF recommends that the reader make tests to determine the suitability of a product for a particular purpose prior to use. No warranties of any kind, either expressed or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth, or that the products, designs, data or information may be used without infringing the intellectual property rights of others. In no case shall the descriptions, information, data or designs provided be considered a part of BASF's terms and conditions of sale. Further the descriptions, designs, data, and information furnished by BASF hereunder are given gratis and BASF assumes no obligation or liability for the description, designs, data or information given or results obtained, all such being given and accepted at the reader's risk.

Warning Polyurethanes are organic materials and must be considered combustible.