

BASF Technical Product Data

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SKYTITE® C1-2.8 Series (ELASTOSPRAY® 81285 and FE 348-2.8) SPRAY POLYURETHANE FOAM ROOFING INSULATION ICC-ES ESR-2298



DESCRIPTION:

SKYTITE C1-2.8 is an HFC-blown, Zero Ozone-Depleting (Zero-ODP), spray polyurethane foam (SPF) system designed for roofing applications. SKYTITE C1-2.8 is compatible with most common construction materials, but can only be processed with ELASTOSPRAY® 8000A Isocyanate.

TYPICAL PROPERTIES⁽¹⁾

PROPERTY	METHOD	VALUE
Resin:		
Specific Gravity @ 70°F	ASTM D 1638	1.18
Viscosity @ 70°F (cps)	Brookfield	500 – 800
Cured Foam:		
Mix Ratio (volume:volume)	1:1	
Density(pcf)	ASTM D 1622	2.7 – 2.9
Thermal Resistance (aged)		
k-factor (Btu in/ft ² hr °F)	ASTM C 518	0.158
R-value (ft ² hr °F/Btu in) ⁽²⁾	Calculated	6.3/in
Compressive Strength (psi)	ASTM D 1621	50 +/- 5% [^]
Tensile Strength (psi)	ASTM D 1623	60 – 80
Shear Strength (psi)	ASTM C 273	40 – 60
Closed Cell Content (%)	ASTM D 6226	>90
Water Vapor Transmission – Permeability (perm-inch)	ASTM E 96	0.9
Surface Burning Characteristics:		
Flame Spread Index ⁽³⁾	UL 723	55
Smoke Developed Index	UL 723	>500
Flame Spread Value (FSV)	CAN/ULC-S102	340
Smoke Developed Value (SDV)	CAN/ULC-S102	565

ADDITIONAL TESTING, APPROVALS & CERTIFICATIONS:

- UL723 Listing with UL⁽³⁾
- UL 263 / CAN/ULC-S101 P-Design Assemblies Classified for Fire Resistance
- UL 1256
- CAN/ULC-S102 Listing with UL/ULC
- ASTM C1029 Type III
- FM APPROVALS Class 1 FM4470 / FM 4880
 - Concrete decks, Recover decks and Steel decks
- UL 790 Listings for Roof Assemblies – Exterior Fire Non-Combustible Decks
 - Class A up to Unlimited thickness of SPF
 - Up to Unlimited Incline available
 - Silicone, Acrylic and Urethane coating options
 - Granules at 35 lbs per 100 ft² depending on configuration
- Combustible Decks
 - Class B at 1 inch (min) SPF thickness
 - Silicone, Acrylic and Urethane coating options
 - Up to 1 : 12 Incline available
 - Granules at 35 lbs per 100 ft² depending on configuration
- Florida Building Code Approval FL 1493.1
- Miami-Dade County Approvals
 - NOA 12-0404.01 Spray Polyurethane Foam over Wood Decks
 - NOA 12-1024.01 Spray Polyurethane Foam over Steel Decks
 - NOA 12-1024.02 Spray Polyurethane Foam over Recover Decks
 - NOA 12-1024.03 Spray Polyurethane Foam over Concrete Decks
- GREENGUARD and GREENGUARD Gold Certification for VOC emissions
- Texas Department of Insurance (TDI) Product Evaluation RC-291



(1) These physical property values are typical for this material as applied at our development facility under controlled conditions. SPF performance and actual physical properties will 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. Physical property specifications should be determined from actual production material.

The above data was collected from samples prepared using the following equipment configuration:

- Gusmer® H-20/35 proportioner set at 1:1 volume ratio with 50 ft of heated delivery hose
- Gusmer® GX-7 spray-gun configured with a #1 mix module and #70 PCD and/or GAP spray-gun configured with a #1 mix chamber
- Process temperature settings: Isocyanate 120-125°F; Resin 130-135°F; Hose 130°F
- P rocess pressure: 1000 psig minimum while spraying

Please contact your local Sales or Technical Representative for specific questions regarding SKYTITE C1-2.8 properties, approvals, or certifications.

(2) The data chart shows the R-value of this insulation. "R" means resistance to heat flow. The higher the R-value, the greater the insulating power. Compare insulation R-values before you buy. There are other factors to consider. The amount of insulation will depend upon the climate, the type and size of your house, and the fuel use patterns and family size. If you buy too much insulation it will cost you more than what you will save on fuel. To achieve proper R-values, it is essential that this insulation be installed properly.

(3) This numerical flame spread rating does not reflect hazards presented by this or any other material under actual fire conditions. Polyurethane foam systems should not be left exposed in interior applications and must be protected by a minimum 15-minute thermal barrier or other code-compliant material as allowed by applicable building code(s) and Code Officials. Building Codes provide guidelines representing minimum requirements. Further information is available at www.iccsafe.org. Consult all Authorities Having Jurisdiction (AHJ) over an area for additional or specific requirements prior to beginning any project.

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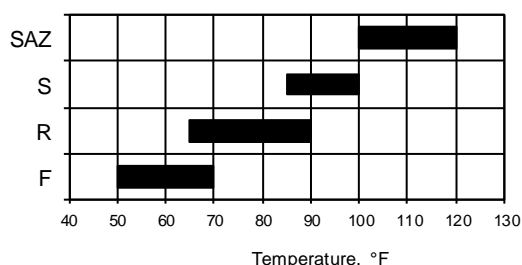
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GENERAL INFORMATION:

SKYTITE C1-2.8 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.

SKYTITE C1-2.8 is available in several reactivity “grades”: SAZ (Slow Arizona), S (Slow), R (Regular) and F (Fast). Some suggested ambient temperature ranges for each of the reactivity grades is included below:

Suggested Ambient Temperature Ranges



CAUTIONS AND RECOMMENDATIONS:

SKYTITE C1-2.8 is designed for an application rate of ½ inch minimum to 1½ inches maximum per pass. Once installed and material has cooled it is possible to add additional applications in order to increase the overall installed thickness of SPF. Thicker installations are allowed based on large scale testing. Please see ESR-2298 for additional information. This application procedure is in compliance with the Spray Polyurethane Foam Alliance (SPFA).

SKYTITE C1-2.8 is NOT designed for use as an INTERIOR insulation system. BASF offers a separate line of products for interior insulation 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. SKYTITE C1-2.8 should NOT be installed in these types of constructions unless the structure was designed by a design professional for specific use as cold storage.

SKYTITE C1-2.8 is designed for installation to most standard construction materials such as wood, wood-based products, plastics, metal and concrete. Applications can be done at approximately 50°F and warming using special cold weather application techniques. Please consult a BASF Representative for further information about applications using our liquid compounds.

In addition to reading and understanding the MSDS, 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 the following documents published by Spray Polyurethane Foam Alliance (SPFA):

AX-171 Course 101-R Chapter 1: Health, Safety and Environmental Aspects of Spray Polyurethane Foam and Coverings
www.spraypolyurethane.org

and 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.

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 SKYTITE C1-2.8 or any polyurethane foam.

SHELF LIFE AND STORAGE CONDITIONS:

SKYTITE C1-2.8 Series has a shelf life of approximately (3) months from the date of manufacture when stored in original, unopened containers at 50-80°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: These products can be used to prepare a variety of polyurethane products. Polyurethanes are organic materials and must be considered combustible.