

## SKYTITE® C3-2.8 Series Spray Polyurethane Foam Roofing Insulation ICC-ES ESR-2298

### DESCRIPTION:

**SKYTITE C3-2.8** is two-component, closed-cell spray polyurethane foam system utilizing an EPA-approved, \*Zero Ozone-Depleting (Zero-ODP) blowing agent with extremely low (less than 1) global warming potential, which is designed for exterior roofing applications. **SKYTITE C3-2.8** is compatible with most common construction materials but can only be processed with ELASTOSPRAY® 8000A Isocyanate.

REACTIVITIES AVAILABLE	AMBIENT TEMPERATURE RANGE
SKYTITE C3-2.8F	50°F to 75°F
SKYTITE C3-2.8R	65°F to 90°F
SKYTITE C3-2.8S	85°F to 120°F

### TYPICAL PROPERTIES <sup>(1)</sup>

PROPERTY	METHOD	VALUE
<b>Resin:</b>		
Specific Gravity @ 70°F	ASTM D 1638	1.18
Viscosity @ 70°F (cps)	Brookfield	200 – 500
<b>Cured Foam:</b>		
Mix Ratio (volume: volume)	1:1	
Density (pcf)	ASTM D 1622	2.7 – 2.9
Thermal Resistance (aged)		
k-factor (Btu in/ft <sup>2</sup> hr. °F)	ASTM C 518	0.161
R-value (ft <sup>2</sup> hr. °F/Btu in) <sup>(2)</sup>	Calculated	6.2/in
Compressive Strength (psi)	ASTM D 1621	45 +/- 5%
Tensile Strength (psi)	ASTM D 1623	90 - 110
Shear Strength (psi)	ASTM C 273	40 – 60
Closed Cell Content (%)	ASTM D 6226	>90
Water Vapor Transmission – Permeability (perm-inch)	ASTM E 96	0.95
Surface Burning Characteristics:		
Flame Spread Index <sup>(3)</sup>	E84/UL 723	<75
Flame Spread Value (FSV)	CAN/ULC-S102 including -S127	<500

(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 equipment configurations pertinent to lab conditions. Parameters can be obtained upon request by calling 800-706-1712.

### ADDITIONAL TESTING, APPROVALS & CERTIFICATIONS:

- FM Approvals Class 4470 for Class 1 & Non-Combustible Roof Decks
- ASTM E84 Listing with QAI<sup>(3)</sup>
- ASTM C1029 Type III
- Miami-Dade County NOAs (21-0309.04, 22-0413.07, 22-0413.08)
- UL-790 for Roof Assemblies – Exterior Fire
  - Non-Combustible Decks
    - Class A up to 4-inch thickness of SPF
    - Up to a 3-inch Incline available
    - Acrylic and Silicone coating options
    - Granules at 40 lbs. per 100 ft<sup>2</sup> depending on configuration
  - Combustible Decks
    - Class B at 1½ inch (min) SPF thickness
    - Silicone and Acrylic coating options
    - Granules at 40 lbs. per 100 ft<sup>2</sup> depending on configuration
- ASTM E108 for Roof Assemblies – Exterior Fire
  - Non-Combustible Decks
    - Class A up to 4-inch thickness of SPF
    - Up to ½ inch Incline available with Acrylic coating options
    - Up to 1½ inch Incline available with Silicone coating options
    - Granules at 30 lbs. per 100 ft<sup>2</sup> depending on configuration
  - Combustible Decks
    - Class B at 1½ inch (min) SPF thickness
    - Silicone and Acrylic coating options
    - Up to ½: 12 Incline available
    - Granules at 30 lbs. per 100 ft<sup>2</sup> depending on configuration

Please contact your local Sales or Technical Representative for specific questions regarding **SKYTITE C3-2.8** 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](http://www.iccsafe.org). Consult all Authorities Having Jurisdiction (AHJ) over an area for additional or specific requirements prior to beginning any project.

\* Complies with Montreal protocol and the US Environmental Protection Agency's (EPA) Significant New Alternatives Program (SNAP) according to Clean Air Act of 1990 that evaluates ozone-depleting substances.



# SKYTITE C3-2.8® SERIES SPRAY POLYURETHANE FOAM ROOFING INSULATION

## GENERAL INFORMATION:

SKYTITE C3-2.8 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 C3-2.8 has an estimated theoretical yield range of 3,100 – 3,300 board feet per set. Actual coverage 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.

## CAUTIONS AND RECOMMENDATIONS:

SKYTITE C3-2.8 is designed for an application rate of ½ inch minimum to 1½ inch 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. This application procedure is in compliance with the Spray Polyurethane Foam Alliance (SPFA).

SKYTITE C3-2.8 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 C3-2.8 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 C3-2.8 is designed for installation to most standard construction materials such as wood, wood-based products, plastics, metal and concrete. SKYTITE C3-2.8 has performed successfully when sprayed onto wood substrates down to 50°F using special cold weather application techniques. For heat sink-materials such as metal or concrete, SKYTITE C3-2.8 can be sprayed onto substrates down to 60°F, using a flash pass method. BASF recommends the use of mock-ups 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.

**Important Material Preparation Note:** Product should be stored at 50-80°F. Materials should be prepared for processing by being warmed to 70°F minimum at least 24 hours prior to installation and maintained at 70°F during the install process.

EQUIPMENT SETTING GUIDELINES– SKYTITE C3-2.8 SERIES		
Climate	A side, B side, Hose Temp (Adjust in +/- 5° increments)	Proportioner set pressure (Spraying pressure)
Colder	120°F – 135°F	1150 – 1450 psi (900 – 1200 psi)
Warmer	110°F – 125°F	1150 – 1450 psi (900 – 1200 psi)

BASF SPF systems are formulated to produce foam with physical properties representative of our published data sheets within the factory set tolerances of commercially available fixed ratio proportioner units.

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 American Chemistry Council / Center for the Polyurethanes Industry (CPI)

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 an appropriate 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 C3-2.8 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:

SKYTITE C3-2.8 S reactivity has a shelf life of approximately (3) months and SKYTITE C3-2.8 F and R reactivities have a shelf life of (5) 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.