

# SKYTITE® C3-3.0 Series Closed-cell Spray Foams

## EXTERIOR ROOFING AND INSULATION MATERIAL

### Description:

**SKYTITE C3-3.0** is two-component, closed-cell spray polyurethane foam insulation system utilizing an EPA-approved, zero ozone-depleting (Zero-ODP) blowing agent with extremely low (less than 1) global warming potential (low-GWP). **SKYTITE C3-3.0** is designed for exterior roofing applications, and is compatible with most common construction materials but can only be processed with ELASTOSPRAY® 8000A Isocyanate.

REACTIVITIES AVAILABLE	AMBIENT TEMPERATURE RANGE
SKYTITE C3 - 3.0 F	50°F to 75°F
SKYTITE C3 - 3.0 R	65°F to 90°F
SKYTITE C3 - 3.0 S	85°F to 120°F

### Physical Properties <sup>(1)</sup>

PROPERTY	METHOD	SKYTITE C3- 3.0
<b>Resin</b>		
Specific Gravity at 70°F	ASTM D1638	1.18
Viscosity at 70°F (cps)	Brookfield	200 – 500
<b>Cured Foam</b>		
Mix Ratio (volume: volume)		1:1
Density, (pcf)	ASTM D1622	2.9-3.0
Closed Cell Content (%)	ASTM D6226	>90
Thermal Resistance <sup>(2)</sup> (Aged)		
K-factor (Btu in/ft <sup>2</sup> hr. °F)	ASTM C518 (Calculated)	0.161
R-value (ft <sup>2</sup> hr °F/Btu in)		6.2/ inch
Compressive Strength (psi) <sup>(3)</sup>	ASTM D1621	50 +/- 5%
Tensile Strength (psi) <sup>(3)</sup>	ASTM D1623	90 - 110
Thermal and Humidity Aging 158°F / 97% RH / 168 hrs	ASTM D2126 (% Calculated)	-1.4%
<b>Water Vapor Transmission</b>		
Permeability (perm-inch)	ASTM E96	1.02
	(Calculated)	<1.0 Perms @ 1.25" (Class II Vapor Retarder)
<b>Surface Burning Characteristics</b>		
Flame Spread Index	E84/UL 723	<75
Flame Spread Value	CAN/ULC-S102 including -S127	<500

(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.

## Additional Testing, Compliance, and Certifications:

- FM Approvals Class 4470 for Class 1 & Non-Combustible Roof Decks
- International Code Council – Evaluation Service Report ICC-ESR-2298
- ICC-1100, ASTM C1029 Type III and ASTM D7425 compliant
- Florida Building Code Product Approval FL47111 (FBC 2023)
- Miami-Dade County NOAs: 21-0309.04, 22-0413.07, 22-0413.08, 23-1018.06
- UL 1256/ULC S126 compliant
  
- Selected Assemblies from UL’s Roofing Systems’ Directory (Full list available at UL Product IQ):
  - 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 A 1/2 in. incline, min. 1.5 in. SPF, min. 1.0 in. Polyiso boards option, Acrylic coating option, Granules
      - 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 C3-3.0 properties, approvals, listed assemblies or certifications.*

## Product Overview:

SKYTITE C3-3.0 is a spray polyurethane foam (SPF) system intended for roofing 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 C3-3.0 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.

### Installation recommendations and precautions:

SKYTITE C3-3.0 is designed for an application rate of 1/2 inch minimum to 1 1/2 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.

SKYTITE C3-3.0 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 C3-3.0 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 C3-3.0 is designed for installation to most standard construction materials such as wood, wood-based products, plastics, metal and concrete. SKYTITE C3-3.0 has performed successfully when sprayed onto wood substrates down to 50°F using special cold weather application techniques such as flash passes. For heat sink-materials such as metal or concrete, SKYTITE C3-3.0 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. **The maximum operating temperature for BASF spray foam chemistries is 180°F.**

**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 70-75°F during the install process.

### EQUIPMENT PROCESSING PARAMETERS:

Conditions	Side A, Side B, Hose Temperature (Adjust in ± 3°F increments)	Proportioner set Pressure ( <b>Spray pressure</b> )
<b>Cold</b>	<b>120 – 135 °F</b>	1250 – 1550 psi <b>(1000 – 1300 psi)</b>
<b>Warmer</b>	<b>110 – 125 °F</b>	1250 – 1550 psi <b>(1000 – 1300 psi)</b>

**Caution** - Failure to follow the application precautions, safety data sheet (SDS) information as well as accepted industry practices ([www.spraypolyurethane.org](http://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 American Chemistry Council / Center for the Polyurethanes Industry (CPI).

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 an appropriate trash receptacle.

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.

**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 C3-3.0 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 C3-3.0 S reactivity has a shelf life of approximately (3) months and SKYTITE C3-3.0 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.

#### **TECHNICAL ASSISTANCE**

For more detailed information, contact Inside Technical Support at:

Toll-Free: 1-800-706-0712, Option 2

Email: [spf.techsales@basf.com](mailto:spf.techsales@basf.com)

Website: <https://spf.basf.com/>

[Technical Document Resource Center](#)

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TDS-CCF-203-SKY-3.0

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