VPC-CC SuperYield

Closed-Cell | Finished Foam | Compliance Research Report: ESR-4334

Technical Data Sheet | Type I, II, III, IV, V-B Constuction

Physical Properties

ASTM D 1622	Core Density	2.17 lb/ft^3
ASTM C 518	Aged Thermal Resistance (R-value @ 1 inch)	6.9 ft^{2}h°F/BTU
ASTM E 283	Air Leakage @ 75 Pa @ 1"	< 0.02 L/sm^2
ASTM E 2178	Air Permeance @ 75 Pa @ 1"	< 0.02 L/sm^2
ASTM E 2357	System Air Leakage Rating @ 1" Exfiltration Infiltration	75 Pa (1.75 pcf)
ASTM E 96	Water Vapor Permeance 1.1" Class II vapor barrier	< 1 perm
ASTM D 2842	Water Absorption (volume)	0.87%
ASTM D 1621	Compressive Strength	23.1 PSI
ASTM D 1623	Tensile Strength	53.7 PSI
ASTM D 2126	Dimensional Stability @158°F 97%R.H.	4.14 % Volume Change
VOC Emissions	UL Environment (Greenguard Gold)	Meets criteria
ASTM C 1338	Fungi Resistance	No fungal growth
ASTM D 6226	Closed Cell Content	93.1%
ASTM C 1029	Standard Specification	

Fire Test Results

NFPA 286	Thermal Barrier Compliant with 2009,2012,2015 & 2018 IBC / IRC	PASS
NFPA 259	Potential Heat	1953 Btu/ft2 per inch
NFPA 285	Exterior Wall Systems	PASS
ASTM E 84	Surface Burning Characteristics, 4" thick Flame Spread Index Smoke Developed	Class I 0–5 350–400
AC 377 Appendix X	Ignition Barrier – Compliant with 2009, 2012 & 2015 IBC and IRC, and ICC-ES AC-377 Appendix X, for use in attics and crawlspaces without a prescriptive ignition barrier or intumescent coating.	PASS
ASTM D 1929	Ignition Properties (spontaneous ignition temperature)	1,010°F (543°C)

Product Use and Design

VPC-CC SuperYield is a two-component, closed-cell, spray-applied, rigid polyurethane foam system. This product uses recycled plastic materials and rapidly renewable soy oils. VPC-CC SuperYield complies with the intent of the International Code Council's residential and commercial building codes and is commonly used as a thermal insulation, air barrier, vapor retarder, and water-resistive barrier in above grade, below grade, interior and exterior applications.

Recommended Product Applications: Walls, Metal Walls and Ceilings, Floors, Unvented Crawl Spaces, Concrete Slabs, Cold Storage, Unvented Attics, Vented Attics, Vented Crawl Spaces, Ducts, Freezers, Ceilings, Piping, Foundations, Tanks and Coolers.

Florida Building Code

2017 Florida Building Code Residential
2017 Florida Building Code Building

Approved Thermal Barrier Intumescent Coatings

DC 315	14 Wet Film 9 Dry Film	115 SQFT/GAL
No-Burn	16 Wet Film 11 Dry Film	100 SQFT/GAL

Reactivity Profile

Cream Time	Gel Time	Tack Free Time	End of Rise
0 – 1 seconds	2 seconds	3–4 seconds	3–4 seconds

Recycled and Renewable Content of VPC-CC SuperYield Resin

Finished Foam Renewable and Recycled Content	22.7%
Polyol Renewable Content	8%
Polyol Recycled Content	37.4%

Liquid Component Properties*

Property	VPC-SuperYield ISO-A	VPC-CC SuperYield B Resin
Color	Brown	Blue
Viscosity @ 77°F (25°C)	180–220 cps	Summer – 250–350 cps Winter – 200–300 cps
Specific Gravity	1.24	Summer – 1.17–1.21 Winter – 1.20–1.22
Shelf Life of Unopened Drum Properly Stored	12 months	6 months
Storage Temperature	50-100°F (10-38°C)	59-77°F (15-25°C)
Mixing Ratio (volume)	1:1	1:1

*See SDS for more information.

Recommended Processing Conditions*

Initial Primary Heater Setpoint Temperature	Summer 100–105°F Winter 95–100°F	Summer 38–41°C Winter 35–38°C
Initial Hose Heat Setpoint Temperature	Summer 100–105°F Winter 95–100°F	Summer 38–41°C Winter 35–38°C
Initial Processing Setpoint Pressure	1,200–1,400 PSI	8,274–9,653 kPa
Substrate & Ambient Temperature	Summer > 50°F Winter > 15°F	Summer > 10°C Winter > -12°C
Moisture Content of Substrate	≤19%	≤19%
Moisture Content of Concrete	Concrete must be cured, dry, and free of dust and form release agents.	

* Foam application temperatures and pressures can vary widely depending on temperature, humidity, elevation, substrate, equipment, and other factors. While processing, the applicator must continuously observe the characteristics of the sprayed foam and adjust processing temperatures and pressures to maintain proper cell structure, adhesion, cohesion, and general foam quality. It is the sole responsibility of the applicator to process and apply VPC-CC SuperLift within specification.

General Requirements

Equipment must be capable of delivering the proper ratio (1:1 by volume) of polymeric isocyanate (PMDI) and polyol blend at adequate temperatures and spray pressures. Substrate must be at least 5 degrees above dew point, with best processing results when ambient humidity is below 80%. Substrate must also be free of moisture (dew or frost), grease, oil, solvents, and other materials that would adversely affect adhesion of the polyurethane foam. Applicators should limit the application of this product to no more than a thickness of 2" (50mm) per pass (after expansion) to avoid fire hazards (including spontaneous combustion) resulting from excessive heat generation. A second 2" (50mm) layer may be applied immediately after the first one has fully risen. If subsequent passes are needed, applicators should wait until the core temperature of the foam has dropped below 100°F to allow any reaction heat to dissipate from the prior applications before attempting to reapply the product.

VPC-CC SuperYield must be separated from the interior of the building by an approved thermal barrier or an approved finish material equivalent to a thermal barrier in accordance with applicable codes. VPC-CC SuperYield must be sprayed at a minimum thickness of 1" per pass. This product must not be used when the continuous service temperature of the substrate or foam is below -60°F (-51°C) or above 180°F (82°C). VPC-CC SuperYield should not be used to cover flexible ductwork.

Disclaimer

The data presented herein are not intended for use by non-professional applicators, or those persons who do not purchase or utilize this product in the normal course of their business. The potential user must perform any pertinent tests in order to determine the product's performance and suitability in the intended application, since final determination of fitness of the product for any particular use is the responsibility of the buyer.

It is the responsibility of the applicator to thoroughly understand all equipment technical information and safe operating procedures that pertain to spray polyurethane foam application.

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