VPC-50 NF

Open-Cell | Finished Foam | Code Compliance Research Report: ESR-4657

Technical Data Sheet

Physical Properties

Property	VPC-50 NF	Test
Density	0.45 – 0.65 lb/ft^3	ASTM D 1622
Aged Thermal Resistance (R-value @ 1 inch)	3.7 ft^{2}h°F/BTU	ASTM C 518
Air Permeance @ 75 Pa @ 3.5"	< 0.02 L/sm^2	ASTM E 283
Water Vapor Permeance	33 perms	ASTM E 96
Water Absorption (% by volume)	> 60%	ASTM D 2842
Compressive Strength	2.4 psi	ASTM D 1621
Tensile Strength	3.1 psi	ASTM D 1623
Dimensional Stability (158°F (70°C) 97% RH, 28 days, vol. %)	< 5%	ASTM D 2126
Open-Cell Content	> 95%	ASTM D 2842
Fungi Resistance	Pass, with no growth	ASTM C 1338
Sound Transmission Coefficient	41	ASTM E 90
Noise Reduction Coefficient	.10	ASTM C 423

Fire Test Results

ASTM E 84	Surface Burning Characteristics, 6" thick	Class I
	Flame Spread Index	< 25
	Smoke Developed	< 450
AC 377 Appendix X	≤ 12" in ceilings ≤ 8" in walls	Meets Requirements
NFPA 286	Thermal Barrier — Compliant with the 2009, 2012, 2015 & 2018 IBC and IRC, as an interior finish without a 15-minute thermal barrier when a DC315 or equivalent product is applied at recommended mils thickness. DC315 applied at 18 mil thickness wet and 12 mill thickness dry.	Pass

Thermal Barrier Approvals

Approved Intumescent Coatings

DC315™	Manufactured by:	International Fireproof Technology, Inc
	Application Rates:	18 Wet Mils - 12 Dry Mils
FS-IB™	Manufactured by:	Flame Seal Products Inc.
	Application Rates:	14 Wet Mils - 9 Dry Mils

Ignition Barrier

VPC-50 NF meets the requirements of ICCES AC377 Appendix X for use in attics and crawlspace without a prescriptive ignition barrier.

Approved Intumescent Coatings

DC315™	Manufactured by:	International Fireproof Technology, Inc
	Application Rates:	4 Wet Mils - 3 Dry Mils
FS-IB™	Manufactured by:	Flame Seal Products Inc.
	Application Rates:	4 Wet Mils - 3 Dry Mils

Product Use and Design

VPC-50 NF is an advanced insulation system specifically engineered for virtually all residential applications. The system is a two-component, light density, polyurethane foam part "A" (ISO) and a blended part "B" (RESIN) formulated to mix one-to-one by volume, and designed for spray application. It replaces and gives superior performance over traditional insulation materials including fiberglass and loose-fill products like cellulose, while offering ease of application for trained spray foam insulation technicians. VPC-50 NF contains ZERO ozone-depleting blowing agents.

Recommended Product Applications

VPC-50 NF is extremely versatile, and can be applied to interior and exterior walls, vented and un-vented attics, un-vented attic assemblies, and between floors and ceilings.

Reactivity Profile

Cream Time: 1 – 2 seconds

Tack Free Time: 4 – 10 seconds

Liquid Component Properties[1]

Property	A-PMDI Isocyanate	VPC-50 NF
Color	Brown	Amber
Viscosity @ 77°F (25°C)	180 – 220 cps	175 cps
Specific Gravity	1.24	1.10
Shelf Life of Unopened Drum Properly Stored	12 months	6 months
Storage Temperature	50 – 100°F (10 – 38°C)	50 – 100°F (10 – 38°C)
Mixing Ratio (Volume)	1.1	1.1

Recommended Processing Conditions[2]

Initial Primary Heater Setpoint Temperature	120 – 145°F	49 – 63°C
Initial Hose Heat Setpoint Temperature	≤ 135°F	≤ 57°C
Initial Processing Setpoint Pressure	1,100 – 1,500 psi	7,584 – 10,342 kPa
Substrate & Ambient Temperature	> 30°F	> -1°C
Moisture Content of Substrate	≤ 19%	≤ 19%
Moisture Content of Concrete	Concrete must be cured, dry and free of dust and from release agents.	

1 See SDS for more information.

2 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-50 NF within specification.

Additional Information

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.

Victory Polymers' VPC-50 NF 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-50 NF must be sprayed at a minimum thickness of 3" 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-50 NF should not be used in contact with bulk water, below grade or to cover flexible ductwork.

Disclaimer

The information herein is to assist customers in determining whether our products are suitable for their applications. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent inferred. All patent rights are reserved. The foam product is combustible and must be protected in accordance with applicable codes. Protect from direct flame and spark contact, around hot work for example. The exclusive remedy for all proven claims is replacement of our materials.