

## Technical Data Sheet | Type I, II, III, IV Construction

### Physical Properties

Property	VPC-HFO	Test
Aged Thermal Resistance (90 Day Aged)	1" - 7.6 per inch 3.5" - R-26	ASTM C518
Compression Strength	26.1 PSI	ASTM D1621
Density	2.2 lb/ft <sup>3</sup>	ASTM D1622
Air Permeance @ 75 PA	0.0002 L/S·m <sup>2</sup>	ASTM E2178
Closed-Cell Content	>90%	ASTM D2856
Water Absorption (% Volume)	.5 %	ASTM D2842
Water Vapor Permeance	40 Perms @ 2"	ASTM E96
Dimensional Stability	<10%	ASTM D2126
Tensile Strength	32 PSI	ASTM 1623
Standard Specification Meets Type II		ASTM C1029
UL Environment (Greenguard Gold)	Meets criteria	VOC Emissions

### Fire Test Results

NFPA 286	Thermal Barrier Compliant IBC / IRC	PASS
NFPA 259	Potential Heat	1953 Btu/ft <sup>2</sup> per inch
NFPA 285	Exterior Wall Systems	PASS
ASTM E 84	Surface Burning Characteristics, 4" thick	Class I
	Flame Spread Index	≤25
	Smoke Developed	≤450
AC 377 Appendix X	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)	>850°F (454°C)

### Approved Thermal Barrier Intumescent Coatings

DC 315	14 Wet Mills 9 Dry Film	115 SQFT/GAL
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### Florida Building Code 2020

2020 Florida Building Code Residential FL 39880  
 2020 Florida Building Code Building FL 39880

### Recycled and Renewable Content of VPC-HFO Resin

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

### Product Use and Design

Victory Polymers' new HFO product combines outstanding performance in an environmentally responsible formulation representing the cutting edge of spray foam insulation technology. This closed-cell spray applied foam VPC-HFO utilizes an EPA-approved next generation blowing agent which yields superior energy efficiency and durability while reducing moisture and air infiltration. This low VOC formulation emits no odor and cures rapidly allowing one hour jobsite re-entry and 2 hour jobsite re-occupancy at applicable ventilation rates.

VPC-HFO is a key component of a "systems approach" to proper building envelope construction. This formulation not only significantly minimizes heat transfer, but moisture gain and air leakage as well. Along with reducing energy consumption, the "green" formulation of VPC-HFO is designed to have as little environmental impact as possible in both its manufacture and usage.

The aged R-value of one inch is 7.6, two inches an R-15 and three and half inches a remarkable R-26. The VPC-HFO dramatically increases cost savings for your project as well as energy savings over time.

**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.

### Recommended Processing Parameters

It is the responsibility of the technician applying the product to properly interpret all equipment technical literature, particularly information relating to acceptable combinations of gun chamber size, proportioner output and pressurization of the materials. Note: optimum hose pressure and temperature may vary depending upon such factors as type of equipment being used, ambient and substrate conditions and the specific area of application for the product.

Application Parameters	VPC-HFO
Substrate Temperature	>40°F
Equipment Pressures	1,000 - 1,300 PSI
Preheat Temperature (A&B/Hose)	110° - 130°F
Drum Preheat Temperature (prior to use)	70° - 80°F
Storage Temperature (warehouse)	50° - 80°F

- 2:1 transfer pumps are recommended for transferring material from the container to the proportioner.
- CAUTION: Extreme care must be taken when removing and reinstalling drum transfer pumps so as NOT to reverse the "A" and "B" components.
- Do not circulate or mix other suppliers' "A" or "B" component into VPC-HFO containers.
- The plural component proportioner must be capable of supplying each component within ± 2% of the desired 1:1 mixing ratio by volume.

### Material Shelf Life:

When stored within the recommended temperature range, the product has a six (6) month shelf life

### LIMITATIONS

THIS PRODUCT MAY BE USED IN A THICKNESS OF 3 INCHES PER APPLICATION ONLY ON WOOD AND CONCRETE SUBSTRATES. SHEET ROCK, OR METAL THINNER THAN 22 GAUGE SHOULD RECEIVE AN APPLICATION OF 1 INCH FOR THE FIRST PASS. LOW VOLTAGE WIRING SHOULD NOT BE ENCASED IN A SINGLE 3 INCH PASS.

### 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. Applicators should limit the application of this product to no more than a thickness of 4" consensus per pass (after expansion) to avoid fire hazards (including spontaneous combustion) resulting from excessive heat generation. 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-HFO 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-HFO 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-HFO 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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