



VICTORY POLYMERS CORPORATION

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VPC-ONESTROKE SPRAY FOAM INSULATION

CSI Section:
07 21 00 Thermal Insulation

1.0 RECOGNITION

VPC-Onestroke Spray Foam Insulation has been evaluated for use as spray foam insulation complying with IBC Section 2603, IRC Section R316, 2018, 2015 and 2012 IECC Sections C303, C402, R303 and R402 and 2009 IECC Sections 303 and 402. The surface burning, physical properties and thermal resistance. of VPC-Onestroke Spray Foam Insulation complies to the intent of the following codes and regulations:

- 2018, 2015 and 2012 International Building Code® (IBC)
- 2018, 2015 and 2012 International Residential Code® (IRC)
- 2018, 2015 and 2012 International Energy Conservation Code® (IECC)

2.0 LIMITATIONS

Use of the VPC-Onestroke Spray Foam Insulation recognized in this report is subject to the following:

2.1 The insulation shall be installed in accordance with the manufacturer’s published installation instructions. It shall also be installed in accordance to this evaluation report and the applicable code, and if there are any conflicts between the manufacturer’s published installation instructions and this report, the more restrictive governs.

2.2 Except as indicated in Section 3.3.3 and Section 3.3.6 of this report or by the applicable code, the insulations shall be separated from the interior of the building by a code approved thermal barrier.

2.3 As noted in Section 3.3.3 and Section 3.3.6 of this report, the insulation shall not exceed the nominal density and thickness.

2.4 During installation the insulation and the surfaces to which it is applied shall be protected from exposure to weather.

2.5 The contractors that will be installing the insulations shall be certified by Victory Polymers Corporation.

2.6 Use of the insulation in areas of “very heavy” termite infestation shall be in accordance with the 2018 and 2015 IBC Section 2603.8, 2012 IBC Section 2603.9 or IRC Section 318.4, as applicable.

2.7 Labeling and jobsite certification of the insulation and coatings shall comply with IBC Section 2603.2, 2018 and 2015 IRC N1101.10 and N1101.10.1.1, 2012 IRC Section N1101.12 and N1101.12.1, and N1101.4.1, IECC Sections C303.1.1 and C303.1.2, as applicable.

2.8 The insulation is produced in Irondale, Alabama under a quality control program.

3.0 PRODUCT USE

3.1 General: When installed in accordance with Section 3.3 of this report, VPC-Onestroke Foam Insulation can be used in wall cavities, floor assemblies or ceiling assemblies, and in attic and crawl spaces as nonstructural thermal insulation material. The spray-applied foam plastic insulation is used in Type V-B construction under the IBC and in dwellings under the IRC.

3.2 Design: VPC-Onestroke Spray Foam Insulation shall comply with requirements in 2018, 2015 and 2012 IECC Sections C402.1 and R402.

3.2.1 DC315 Fireproof Paint: DC315 Fireproof Paint, recognized in [ER-499](#), is a water-based latex intumescent coating manufactured by International Fireproof Technology, Inc. and is supplied in 5-gallon (19 L) pails and 55-gallon (208 L) drums. When stored in factory-sealed containers at temperatures between 50°F (10°C) and 80°F (27°C), the coating has a shelf life of 12 months.

3.2.2 Flame Seal FS-IB™ Ignition Barrier: Flame Seal FS-IB™, recognized in an evaluation report issued by an ISO/IEC 17065 Product Certification Agency, is a water-based latex intumescent coating and is supplied in 5-gallon (19 L) pails and 55-gallon (208 L) drums. When stored in factory-sealed containers at temperatures between 60°F (16°C) and 80°F (27°C), the coating has a shelf life of 12 months.

3.2.3 Thermal Resistance (R-Values): VPC-Onestroke Spray Foam Insulation has a thermal resistance (R-Value at a mean temperature of 75°F (24°C) as shown in Table 1 of this report.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.





TABLE 1
Thermal Resistance (R-Value)^{1, 2}
(°F-ft²-h/BTU)

Thickness (inch)	R-Value
1	3.7
2	7.0
3	10
3.5	12
4	14
5	17
5.5	19
6	20
7	24
7.5	26
8	27
9	31
10	34
11	37
12	41
14	48
16	54
18	61

For SI: 1 inch = 25.4 mm, 1°F-ft²-h/Btu = 0.176 110 K·m²/W.

¹R-Values are calculated based on tested K values at 1-inch and 3.5-inch thicknesses.

²R-Values greater than 10 are rounded to the nearest whole number.

3.2.4 Air Permeance: When tested in accordance with ASTM E2178 at a minimum thickness of 4 inches (102 mm), VPC-Onestroke spray-applied foam plastic insulation has an air permeability of less than 0.02 L/s-m² at 75 Pa, meeting the definition of air-impermeable insulation in accordance with the IBC and IRC.

3.2.5 Surface Burning Characteristics: At a maximum thickness of 4 inches (102 mm) and a nominal density of 0.5 pcf (16 kg/m³), the VPC-Onestroke Spray Foam Insulation has a flame spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84. Thicknesses are not limited for ceiling cavities and wall cavities when covered by a code complying prescriptive thermal barrier, such as minimum ½-inch (12.7 mm) thick gypsum board.

3.3 Installation:

3.3.1 Installation General: The manufacturer’s published installation instructions for VPC-Onestroke Spray Foam Insulation and this report shall be available and strictly adhered to at all times on the jobsite during installation.

The spray foam insulation shall be spray-applied on the jobsite using a volumetric positive displacement pump in accordance with the manufacturer’s published installation instructions. The applied insulation shall be sprayed in multiple passes having a maximum thickness of 10 inches (254 mm) per pass up to the maximum insulation thickness specified in this report. The maximum in-service temperature for all areas shall not exceed 180°F (82°C). The spray-

applied foam plastic insulation shall not be used in electrical outlets or junction boxes or in continuous contact with rain or water. The spray-applied foam plastic insulation shall be sprayed onto a substrate that is protected and clean from any debris or weather related conditions during application.

3.3.2 Installation with a Prescriptive Thermal Barrier: VPC-Onestroke Spray Foam Insulation shall be separated from the interior by an approved thermal barrier of minimum ½ -inch thick (12.7 mm) gypsum wallboard or an equivalent thermal barrier. When installed in accordance with this section the spray foam may be any thickness when installed behind a prescriptive thermal barrier. The barrier shall comply with and installed in accordance with IBC Section 2603.4 or IRC Section R316.4, as applicable.

3.3.3 Installation with an Alternative Thermal Barrier Assembly: The thermal barrier required by IBC Section 2603.4 or IRC section R316.4 may be omitted when all of the following apply:

- a. The thickness of the VPC-Onestroke Spray Foam Insulation shall not exceed the values shown in Table 2; and
- b. The VPC-Onestroke Spray Foam Insulation is coated with a minimum thickness of DC-315 Fireproof Paint intumescent coating as described in Section 3.2.1 and Table 2 of this report. The coating shall be applied in accordance with the coating manufacturer’s instructions and this report. Surfaces to be coated shall be dry, clean and free of dirt, loose debris and other contaminants that could impact adhesion of the coating.

3.3.4 Installation for Attics and Crawl Spaces: When used in an attic or crawl space where entry is made only for service of utilities, VPC-Onestroke Spray Foam Insulation shall be installed in accordance with this section. The insulation shall be separated from the interior of the building by an approved thermal barrier as described in Sections 3.3.2 and 3.3.3 of this report, as applicable except as noted in Sections 3.3.5 or 3.3.6 of this report.

3.3.5 Installation with a Prescriptive Ignition Barrier: Where entry is made only for the service of utilities, VPC-Onestroke Spray Foam Insulation may be installed within attics or crawl spaces with an ignition barrier in accordance with IBC Section 2603.4.1.6, or IRC Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier shall be installed in a manner such that the foam plastic insulation is not exposed and is consistent with the requirements of the type of construction required by the applicable code.

3.3.6 Installation with an Alternative Ignition Barrier Assembly: When installation is in accordance this this section, the ignition barrier described in Section 3.3.5 of this report, and as required by Section 2603.4.1.6 of the IBC or Section R316.5.3 and R316.5.4 or the IRC, as applicable may be omitted.



3.3.6.1 General: When VPC-Onestroke Spray Foam Insulation is installed in attics and crawl spaces without a prescriptive ignition barrier, the following conditions apply:

- a. The thickness of the foam plastic insulation applied to the underside of the top of the space shall not exceed values noted in Table 3 of this report.
- b. The thickness of the foam plastic insulation applied to the vertical surfaces shall not exceed values noted in Table 3 of this report.
- c. Entry is only to service utilities in the attic or crawl space and no storage is permitted.
- d. Attic or crawl space areas cannot be interconnected.
- e. Air from the attic or crawl space cannot be circulated to other parts of the building.
- f. In accordance with 2018 IBC Section 1202.2, 2015 and 2012 IBC Section 1203.2 or IRC section R806, as applicable, attic ventilation is provided, as applicable.
- g. In accordance with 2018 IBC Section 1202.4, 2015 and 2012 IBC Section 1203.3 or IRC section R408.1, as applicable, crawl-space ventilation is provided, as applicable.
- h. In accordance with IMC (International Mechanical Code[®]) Section 701, combustion air is provided, as applicable.
- i. Fire-protective coating, noted in this report, is applied in accordance with Table 3.

3.3.7 Unvented Attics: VPC-Onestroke Spray Foam Insulation may be installed in unvented attic assemblies and unvented enclosed rafter assemblies in accordance with Section 1202.3 of the 2018 IBC, Section 1203.3 of the 2015 IBC or Section R806.5 of the 2015 and 2012 IRC, or Section R806.4 of the 2009 IRC, as applicable. A vapor retarder shall be installed as required in Section 1203.3 (4) or the 2015 IBC in Climate Zones 5, 6, 7 and 8.

4.0 PRODUCT DESCRIPTION

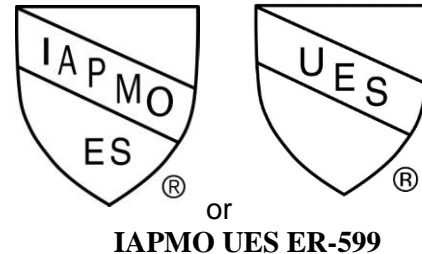
VPC-Onestroke Spray Foam Insulation is a spray-applied, polyurethane foam plastic and complies as a low-density insulation in accordance with Section 3.1.1 and Table 1 of AC377. The insulation is a two-component spray foam plastic with a nominal in-place density of 0.5 pcf (16 kg/m³).

The spray-applied insulation is mixed in the field by combining a polymeric isocyanate (A component) and a resin blend (B component). The liquid components shall be stored in 55-gallon (208 L) drums at temperatures between 50°F and 70°F (10°C and 21°C). When Component A and Component B are stored in factory-sealed containers at the recommended temperatures, the maximum shelf life is six months.

5.0 IDENTIFICATION

VPC-Onestroke Spray Foam Insulation containers are identified by the company name address and telephone

number, product name, use instructions, density, flame-spread and smoke-development indices, date of manufacture, and evaluation report number (ER-599). The identification may also include either of the IAPMO Uniform Evaluation Service Marks of Conformity. Either Mark of Conformity may be used as shown below:



6.0 SUBSTANTIATING DATA

- 6.1** Manufacturer's descriptive literature and installation instructions. Test results are from laboratories in compliance with ISO/IEC 17025.
- 6.2** Data in accordance with the Acceptance Criteria for Spray-applied Foam Plastic Insulation, ICC-ES AC377, dated April 2016, (editorially revised April 2018) including Appendix X.
- 6.3** Report of Flammability Testing in accordance with NFPA 286.
- 6.4** Report of Air Permeance based on ASTM E2178.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on VPC-Onestroke Spray Foam Insulation to assess its conformance to the codes shown in Section 1.0 of this report and documents the product's certification. Products are manufactured at the location noted in Section 2.8 of this report under a quality control program with periodic inspections under the supervision of IAPMO UES.

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For additional information about this evaluation report please visit www.uniform-es.org or email at info@uniform-es.org



**TABLE 2
ALTERNATIVE THERMAL BARRIER ASSEMBLIES**

Fire-Protective Coating/Covering			Maximum SPF Thickness (inch)	
Type	Minimum Thickness (mils)	Theoretical Application Rate	Walls and Vertical Surfaces	Ceiling and Overhead Surfaces
DC315	18 WFT (12 DFT)	0.8 gal/100 ft ²	10	12

For SI: 1 inch = 25.4 mm, 1 mil = 0.0254 mm

**TABLE 3
ALTERNATIVE IGNITION BARRIER ASSEMBLIES**

Fire-Protective Coating/Covering			Maximum SPF Thickness (inch)	
Type	Minimum Thickness (mils)	Theoretical Application Rate	Walls and Vertical Surfaces	Ceiling and Overhead Surfaces
DC315	4 WFT (3 DFT)	0.25 gal/100 ft ²	8	14
FS-IB	6 WFT (3DFT)	0.38 gal/100 ft ²	10	15

For SI: 1 inch = 25.4 mm, 1 mil = 0.0254 mm