UNITED POLYMERS, LLC
1744 SOUTH LANE
MANDEVILLE, LOUISIANA 70471
888-973-9340

SUPREMESEAL 2.0 CLOSED CELL SPRAY-APPLIED FOAM PLASTIC INSULATION

CSI Section:
07 21 00 Thermal Insulation

1.0 RECOGNITION

SupremeSeal 2.0 closed cell spray-applied polyurethane foam plastic insulation described in this report has been evaluated for use as a thermal insulation. The physical properties, thermal resistance, surface burning characteristics, and attic and crawl space installations were evaluated for compliance with the following codes and regulations:

- 2021, 2018, and 2015 International Building Code® (IBC)
- 2021, 2018, and 2015 International Residential Code® (IRC)
- 2021, 2018, and 2015 International Energy Conservation Code® (IECC)
- 2023 Florida Building Code, Building (FBC, Building) – Supplement attached
- 2023 Florida Building Code, Residential (FBC, Residential) – Supplement attached
- 2023 Florida Building Code, Energy Conservation (FBC, Energy Conservation) – Supplement attached

2.0 LIMITATIONS

Use of SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation recognized in this report is subject to the following limitations:

2.1 The insulation and coating products shall be installed in accordance with the manufacturer's published installation instructions, this evaluation report, and the applicable code. If there are any conflicts between the manufacturer's published installation instructions and this report, the more restrictive shall govern.

2.2 In accordance with Sections 4.5.1 and 4.5.2 of this report, the insulation shall be separated from the interior of the building by a code-complying thermal barrier or ignition barrier as appropriate.

2.3 The insulation shall not exceed the nominal density and thickness for the installation conditions described in this report.

2.4 During and after application, the insulation shall be protected from exposure to weather.

2.5 The insulation shall be installed by professional spray polyurethane foam installers certified by United Polymers, LLC.

2.6 Use of the insulation in areas of "very heavy" termite infestation probability shall be in accordance with 2021, 2018, and 2015 IBC Section 2603.8 or IRC Section R318.4, as applicable.

2.7 Labeling and jobsite certification of the insulation and coatings shall comply with the following code sections as applicable:

- 2021, 2018, or 2015 IBC Section 2603.2
- 2021, 2018, or 2015 IRC Section R316.2
- 2021, 2018, or 2015 IRC Section N1101.10.1.1
- 2021, 2018, or 2015 IECC Section C303.1.1.1 or R303.1.1.1

2.8 Foam plastic used in plenums as interior finish or interior trim shall comply with Section 2603.7 of the IBC.

2.9 The insulation is produced in Mandeville, Louisiana.

3.0 PRODUCT USE

SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation complies with IBC Section 2603, IRC Section R316, and IECC Sections C303, C402, R303, and R402. When installed in accordance with Section 4.0 of this report, the foam plastic insulation may be used in wall cavities, floor assemblies or ceiling assemblies, and/or in attics and crawl spaces as nonstructural thermal insulation material. SupremeSeal 2.0 insulation is used in Type V construction under the IBC and in one- and two-family dwellings under the IRC.

4.0 PRODUCT DESCRIPTION

4.1 Properties: SupremeSeal 2.0 is a medium density, closed cell, spray-applied polyurethane foam plastic insulation in accordance with Section 301.1 and Table 2 of ICC 1100. The insulation has a nominal in-place density of 2.0 pcf (32.0 kg/m^3). The two-component spray foam plastic is produced in the field by combining a polymeric isocyanate (A component) and a polymeric resin (B component). The liquid components shall be stored in 55-gallon (208 L) drums at temperatures between 70°F and 80°F (21°C and 27°C). When Component A and Component B are stored in factory-sealed containers at the recommended temperatures, the maximum shelf life is six months.

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.

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4.2 Thermal Resistance (R-Values): SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation has a thermal resistance (R-Value) at a mean temperature of 75°F (24°C) as shown in Table 1 of this report.

TABLE 1
Thermal Resistance (R-Values)[1]
(°F•ft²•h/Btu)

Thickness (inch)	SupremeSeal 2.0
1	7.3
3.5	25
4	28
5.5	39
7.25	51
9.25	65
11	77
12	84

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

[1]R-Values are calculated based on tested K values at 1-inch and 4-inch thicknesses.

4.3 Surface Burning Characteristics: At a maximum thickness of 4 inches (102 mm) and a nominal density of 2.0 pcf (32 kg/m^3), SupremeSeal 2.0 insulation has a flame spread index of 25 or less and smoke-developed index of 450 or less when tested in accordance with ASTM E84. Greater thicknesses, depending on the end use, are recognized when installed in accordance with this report.

4.4 Fire-Protective Coatings and Coverings: Fire protective coatings, for use as alternative thermal barrier assemblies, shall be in accordance with Table 2 of this report, as applicable, and installed in accordance with Section 4.5 of this report.

4.5 Installations: SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation shall comply with one of the following requirements:

- 2021, 2018, and 2015 IECC Sections C402.1 (prescriptive)
- 2021, 2018, and 2015 IECC Section R402.1 (prescriptive)

The manufacturer's published installation instructions for SupremeSeal 2.0 insulation and this report shall be available on the jobsite during installation. Where conflicts occur, the most restrictive governs.

SupremeSeal 2.0 insulation shall be spray-applied on the jobsite using equipment specified in the manufacturer's published installation instructions. The maximum in-service temperature for all areas shall not exceed the maximum temperature stated in the manufacturer's published installation instructions. The insulation shall be sprayed onto a substrate that is protected and clean from any debris or weather-related conditions during and after application at a maximum thickness of 3 inches per pass and shall not be used in electrical outlets or junction boxes or in contact with rain, water, or soil.

4.5.1 Thermal Barrier

4.5.1.1 Application with a Prescriptive Thermal Barrier: SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation, at any thickness in ceiling cavities and in wall cavities, shall be separated from the interior by an approved thermal barrier of minimum ½-inch thick (12.7 mm) gypsum wallboard or equivalent 15-minute thermal barrier. The thermal barrier shall comply with and be installed in accordance with IBC Section 2603.4 or IRC Section R316., as applicable.

4.5.1.2 Alternative Thermal Barrier Assemblies: SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation may be installed without a thermal barrier as defined in Section 4.5.1 of this report when installed in accordance with Table 2 of this report and as referenced in IAPMO UES ER-499.

4.5.2 Installation in Attics or Crawl Spaces: SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation may be installed in attics or crawl spaces when installed in accordance with this section (Section 4.5).

When installed in attics or crawl spaces where entry is made only for the service of utilities, SupremeSeal 2.0 insulation may be installed in accordance with this section. SupremeSeal 2.0 insulation need not be surfaced with a thermal barrier, however, such attic and crawl space areas shall be separated from the interior of the building by a thermal barrier in accordance with Section 4.5.1 of this report.

4.5.2.1 Installation Using a Prescriptive Ignition Barrier: When installed within attics or crawl spaces where entry is made only for the service of utilities, SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation shall be covered with a prescriptive ignition barrier in accordance with IBC Section 2603.4.1.6 or IRC Sections R316.5.3 and R316.5.4, as applicable. The thickness of the spray foam is not limited when covered with a prescriptive ignition barrier.

Exception: The prescriptive ignition barrier may be omitted when installed in accordance with Section 4.5.2.2 of this report.

4.5.2.2 Installation Using an Alternative Ignition Barrier Assembly: SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation may be installed in attics and crawl spaces using an alternative ignition barrier assembly provided:

a. Entry is only to service utilities in the attic or crawl space and no storage is permitted.
b. Attic or crawl space areas shall not be interconnected.

c. Air from the attic or crawl space shall not be circulated to other parts of the building.
d. Attic ventilation is provided as required by 2021 and 2018 IBC Section 1202.2, 2015 IBC Section 1203.2, or IRC Section R806 except where air-impermeable insulation is permitted in unvented attics and shall comply with the following code sections as applicable:

For Unvented Attics:
- 2021 and 2018 IBC Section 1202.3
- 2015 IBC Section 1203.3
- IRC Section R806.5

Crawl space ventilation is provided as required by the following code sections as applicable:
- 2021 and 2018 IBC Section 1202.4
- 2015 IBC Section 1203.4
- IRC Section R408.1

e. The foam plastic insulation is limited to the maximum thickness and density tested as shown in Section 4.5.2.2.1 of this report.
f. In accordance with the Uniform Mechanical Code (UMC) Section 701.1 or IMC (International Mechanical Code®) Section 701, combustion air is provided.

4.5.2.2.1 Application without a Fire Protective Coating for Alternative Ignition Barrier Assembly: SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation may be applied without a fire-retardant or fire protective coating to the underside of roof sheathing or roof rafters and vertical surfaces of attics and in crawl spaces. When applied to the underside of the top of the space, the thickness of the SupremeSeal 2.0 insulation shall not exceed 10 inches (254 mm), and when applied to vertical surfaces, maximum thickness shall not exceed 6 inches (152 mm). The insulation may be installed in unvented attics as described in this section in accordance with 2021 and 2018 IBC Section 1202.3, 2015 IBC Section 1203.3, or IRC Section R806.5, as applicable.

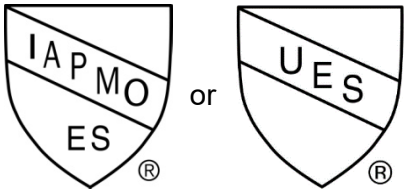
4.6 Vapor Retarder: SupremeSeal 2.0 closed-cell spray-applied polyurethane foam insulation has a vapor permeance of 0.45 perm, when applied at a minimum thickness of 2 inches (51 mm) and qualifies as a Class II vapor retarder as defined in IRC Section R202.

5.0 IDENTIFICATION

The spray foam insulation is identified with the following:

a. Manufacturer's name (United Polymers, LLC)
b. address and telephone number,
c. the product trade name (SupremeSeal 2.0)
d. use instructions
e. density, flame-spread and smoke-development indices
f. date of manufacture or batch/run number
g. thermal resistance values
h. the evaluation report number (ER-975)
i. the name or logo of the inspection agency

Either IAPMO UES Mark of Conformity may also be used as shown below:



IAPMO UES ER-975

6.0 SUBSTANTIATING DATA

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation, AC377, dated June 2023, including Appendix X.

6.2 Flammability Testing to NFPA 286, Standard Methods of Fire Tests for Evaluation Contribution of Wall and Ceiling Interior Finish to Room Fire Growth

6.3 Data in accordance with ICC 1100, Standard for Spray-applied Foam Plastic Insulation.

6.4 Test Reports are from laboratories in compliance with ISO/IEC 17025

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on SupremeSeal 2.0 to assess conformance to the codes and standards shown in Section 1.0 of this report and documents the product's certification. SupremeSeal 2.0 spray-applied polyurethane foam plastic insulation is manufactured at the location noted in Section 2.9 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

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

TABLE 2 - ALTERNATIVE THERMAL BARRIER ASSEMBLY

FIRE-PROTECTIVE COATING/COVERING[1]			MAXIMUM SPF THICKNESS (inch)	
TYPE	MINIMUM THICKNESS (mils)	THEORETICAL APPLICATION RATE (COATINGS ONLY)	WALLS AND VERTICAL SURFACES	CEILING AND OVERHEAD SURFACES
DC315 [2]	14 WFT (9 mils DFT)	0.87 gal/100 ft^2	5.5	9.5
Plus ThB[3]	14 WFT (9 mils DFT)	0.87 gal/100 ft^2	7	10

For **SI:** 1 inch = 25.4 mm, 1 gallon = 3.785 L, 1 ft^2 = 0.0929 m^2

[1] Fire-protective coatings and coverings shall be applied over all exposed SPF surfaces in accordance with the coating/covering manufacturer's instructions and this report.

[2] International Fireproof Technology, Inc, recognized in IAPMO UES ER-499.

[3] No Burn, Inc., recognized in IAPMO UES ER-305.

FLORIDA SUPPLEMENT

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07 21 00 Thermal Insulation

1.0 RECOGNITION

The SupremeSeal 2.0 closed cell spray-applied foam plastic insulation as evaluated and represented in IAPMO UES Evaluation Report ER-975 and with changes as noted in this supplement is a satisfactory alternative for use in buildings built under the following codes (and regulations) including locations in the High-velocity Hurricane Zone:

- 2023 Florida Building Code, Building, (FBC, Building)
- 2023 Florida Building Code, Residential (FBC, Residential)
- 2023 Florida Building Code, Energy Conservation (FBC, Energy Conservation)

2.0 LIMITATIONS

Use of SupremeSeal 2.0 closed cell spray-applied foam plastic insulation recognized in this report is subject to the following limitations:

2.1 The clearance between the foam insulation installed above grade and exposed earth shall be in accordance with Section 2603.8 of the FBC, Building or Section R318.8 of the FBC, Residential.

2.2 Verification shall be provided that a quality assurance agency audits the manufacturer's quality assurance program and audits the production quality of products in accordance with Section (5)(d) of Florida Rule 61G20-3.008. The quality assurance agency shall be approved by the Commission (or the building official when the report holder does not possess an approval by the Commission).

2.3 This supplement expires concurrently with ER-975.