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SUPREMESEAL 500 AND SUPREMESEAL 750 OPEN CELL SPRAY-APPLIED FOAM PLASTIC INSULATIONS

CSI Section:
07 21 00 Thermal Insulation

1.0 RECOGNITION

SupremeSeal 500 and SupremeSeal 750 open cell spray-applied polyurethane foam plastic insulations recognized in this report have been evaluated for use as a nonstructural thermal insulating material in Type V construction under the IBC and one- and two-family dwellings constructed under the IRC. The surface burning characteristics and physical and thermal properties comply with the intent of the provisions of 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 500 and SupremeSeal 750 recognized in this report is subject to the following limitations:

2.1 The insulations shall be installed in accordance with the applicable code, the manufacturer's published installation instructions, and this report. Where there is a conflict, the most restrictive requirements shall govern.

2.2 SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations shall be installed by contractors certified by United Polymers, LLC.

2.3 When SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations are used in areas where, in the likelihood termite infestation is "very heavy," they shall be installed in accordance with IBC Section 2603.8 or IRC Section R318.4, as applicable.

2.4 Jobsite labeling and certification of the insulations shall comply with the IRC Section N1101.10 and IECC Sections C303.1.1 and C303.1.2, as applicable.

2.5 Where applicable, SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations shall be installed with a vapor retarder in accordance with the applicable code.

2.6 Except as indicated in Section 3.3.3.2 or by the applicable code, the insulations shall be separated from the interior of the building by a code approved thermal barrier.

2.7 During installation, the insulations and the surfaces to which they are applied shall be protected from exposure to weather.

2.8 Use of SupremeSeal 500 and SupremeSeal 750in fire-resistance rated assemblies is beyond the scope of this report.

2.9 The insulations recognized in this report are produced in Mandeville, Louisiana**.**

3.0 PRODUCT USE

3.1 General: SupremeSeal 500 and SupremeSeal 750 are open cell spray-applied polyurethane foam plastic (SPF) insulations and are used as a nonstructural thermal insulating material in Type V construction under the IBC and dwellings under the IRC. The insulations comply with IBC Section 2603; IRC Section R316; and IECC Sections C303, C402, R303; and R402.

3.2 Design:

3.2.1 Surface Burning Characteristics

3.2.1.1 SupremeSeal 500: SupremeSeal 500 open-cell polyurethane foam plastic insulation, at a maximum thickness of 4 inches (102 mm) and a nominal density of 0.5 pcf (8.0 kg/m^3), 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.

3.2.1.2 SupremeSeal 750: SupremeSeal 750 open-cell polyurethane foam plastic insulation, at a maximum thickness of 4 inches (102 mm) and a nominal density of 0.8 pcf (12.8 kg/m^3), 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.

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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3.2.2 Thermal Resistance

3.2.2.1 SupremeSeal 500: For uses in accordance with the IECC or other codes, SupremeSeal 500 open-cell 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—
SupremeSeal 500Thermal Resistance (R-Values)[1]

Thickness (inch)	**R-Value** (°F•ft²•hr/Btu)
1.0	4.1
3.5	13
4.0	14
5.5	20
7.5	27
9.5	34
11.5	42
14	51

SI: 1 inch = 25.4 mm; 1 °F•ft²•hr/Btu = 0.176 °K•m²•hr/W
[1]R-values are calculated based on tested k-factors at 1- and 3.5-inch thicknesses.

3.2.2.2 SupremeSeal 750: For uses in accordance with the IECC or other codes, SupremeSeal 750 open-cell 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 2 of this report.

TABLE 2—
SupremeSeal 750Thermal Resistance (R-Values)[1]

Thickness (inch)	**R-Value** (°F•ft²•hr/Btu)
1.0	4.2
4.0	15
5.5	21
7.5	29
9.5	36
11.5	44
14	53

SI: 1 inch = 25.4 mm; 1 °F•ft²•hr/Btu = 0.176 °K•m²•hr/W
[1]R-values are calculated based on tested k-factors at 1- and 3.5-inch thicknesses.

3.3 Installation:

3.3.1 Installation General: SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations shall be installed in accordance with the manufacturer's published installation instructions and this report. A copy of these instructions and this evaluation report shall be available on the jobsite at all times during installation.

3.3.2 Application: SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations shall be applied using spray equipment specified by United Polymers, LLC. The insulations shall be sprayed in multiple passes having a maximum thickness of 6 inches (152 mm) per pass at the required conditions between passes, up to the maximum insulation thickness specified in this report.

3.3.3 Thermal Barrier:

3.3.3.1 Application with a Prescriptive Thermal Barrier: SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations shall be separated from the interior of the building by an approved thermal barrier of $^1/_2$-inch-thick (12.7 mm) gypsum wallboard or an equivalent 15-minute thermal barrier complying with and installed in accordance with the applicable code. When installed in accordance with this section, the spray foams may be any thickness when installed behind a prescriptive thermal barrier.

3.3.3.2 Application with an Alternative Thermal Barrier Assembly: SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations and coating may be spray-applied to the interior facing of walls and ceilings and may be left exposed as an interior finish without a prescribed 15-minute thermal barrier. The thickness of SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations applied to the ceiling or other horizontal assembly shall not exceed 14 inches (355.6 mm). The thickness of the foam plastic applied to vertical wall surfaces shall not exceed 8 inches (203.2 mm). The foam plastic shall be covered on all surfaces with DC315 intumescent coating at a minimum wet film thickness of 18 mils (12 mils dry film thickness), at a rate of 1.1 gallons (4.2 L) per 100 square feet (9.2 m²). The coating shall be applied over the SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations 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 substances that could interfere with adhesion of the coating.

3.3.4 Attics and Crawl Spaces:

3.3.4.1 Application with a Prescriptive Ignition Barrier: When SupremeSeal 500 and SupremeSeal 750 spray-applied polyurethane foam plastic insulations are installed within attics or crawl spaces where entry is made only for service of utilities, an ignition barrier shall be installed in accordance with IBC Section 2603.4.1.6 and IRC Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier shall be consistent with the requirements for the type of construction required by the applicable code and shall be installed in a manner so that the foam plastic insulation is not exposed. SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations, as described in this section, may be installed in unvented attics in accordance with IRC Section R806.4. The attic or crawl space area shall be separated from the interior of the building by an approved 15-minute thermal barrier as described in Section 3.3.3 of this report. When installed with a prescriptive ignition barrier in

accordance with this section, the thickness of the spray foam insulation is not limited.

3.3.4.2 Application with an Alternative Ignition Barrier Assembly: Where the spray-applied insulation is installed in accordance with the following conditions apply, the prescriptive ignition barrier as required in Section 3.3.4.1 is not required:

a) Entry to the attic or crawl space is to service utilities, and no storage is permitted.
b) There are no interconnected attic or crawl space areas.
c) Air in the attic or crawl space is not circulated to other parts of the building.
d) Attic ventilation is provided when required by 2021 or 2018 IBC Section 1202.2, 2015 IBC Section 1203.2, or IRC Section R806. Under-floor (crawl space) ventilation is provided when required by 2021 or 2018 IBC Section 1202.3, 2015 IBC Section 1203.3, or IRC Section R408.1, as applicable.
e) Combustion air is provided in accordance with International Mechanical Code® Section 701.
f) Alternative ignition barrier assembly is applied as shown in Table 5.

3.3.4.3 Use on Attic Floors: SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam insulations may be installed at a maximum thickness of 14 inches (355.6 mm) between joists of the attic floor. The insulations shall have an ignition barrier applied on the surface meeting the requirements of Sections 3.3.4.1 or 3.3.4.2 and shall be separated from the area beneath the attic by an approved thermal barrier.

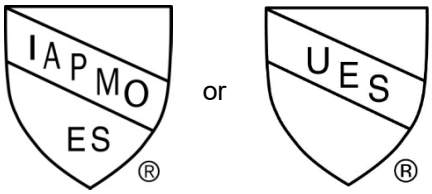
4.0 PRODUCT DESCRIPTION

4.1 SupremeSeal 500 Insulation: SupremeSeal 500 is a two-part low-density spray-applied, open-cell polyurethane foam plastic insulation having a nominal density of 0.5 pcf (8.0 kg/m^3). The two components of the insulation are polymeric isocyanate (A-Component) and proprietary resin (B-Component, SupremeSeal 500).

4.2 SupremeSeal 750 Insulation: SupremeSeal 750 is a two-part low-density spray-applied, open-cell polyurethane foam plastic insulation having a nominal density of 0.8 pcf (12.8 kg/m^3). The two components of the insulation are polymeric isocyanate (A-Component) and proprietary resin (B-Component, SupremeSeal 750).

5.0 IDENTIFICATION

SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations' components are identified by the United Polymers name and trademark, product name address; the product trade name (SupremeSeal 500 and SupremeSeal 750); the lot number; the flame spread and smoke developed indices; mixing instructions; the shelf life; the expiration date; and the IAPMO Uniform ES Evaluation Report number (ER-974). Either IAPMO UES Mark of Conformity may also be used as shown below:



IAPMO UES ER-974

6.0 SUBSTANTIATING DATA

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation, (AC377), Approved April 2020, (Editorially Revised July 2020), including Appendix X.

6.2 Reports of Flammability Testing in accordance with NFPA 286.

6.3 Test reports are from laboratories in compliance with ISO/IEC 17025.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on United Polymer's SupremeSeal 500 and SupremeSeal 750 open-cell spray-applied polyurethane foam plastic insulations to assess conformance to the codes shown in Section 1.0 of this report and serves as documentation of the products 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.

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

TABLE 4
ALTERNATIVE THERMAL BARRIER ASSEMBLIES[1]

SPRAY FOAM INSULATION	FIRE-PROTECTIVE COATING/COVERING			MAXIMUM SPF THICKNESS (inch)	
	TYPE	MINIMUM THICKNESS (mils)	THEORETICAL APPLICATION RATE	WALLS AND VERTICAL SURFACES	CEILING AND OVERHEAD SURFACES
SupremeSeal 500	DC315[2]	18 WFT (12 DFT)	1.1 gal/100 ft^2	8	14
SupremeSeal 750	DC315[2]	18 WFT (12 DFT)	1.1 gal/100 ft^2	8	14

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

TABLE 5
ALTERNATIVE IGNITION BARRIER ASSEMBLIES[1]

SPRAY FOAM INSULATION	FIRE-PROTECTIVE COATING/COVERING			MAXIMUM SPF THICKNESS (inch)	
	TYPE	MINIMUM THICKNESS (mils)	THEORETICAL APPLICATION RATE	WALLS AND VERTICAL SURFACES	CEILING AND OVERHEAD SURFACES
SupremeSeal 500	DC315[2]	6 WFT (4 DFT)	0.38 gal/100 ft^2	9.5	14
SupremeSeal 500	Plus ThB[3]	4 WFT (3 DFT)	0.25 gal/100 ft^2	10	14
SupremeSeal 750	DC315[2]	6 WFT (4 DFT)	0.38 gal/100 ft^2	9.5	14
SupremeSeal 750	Plus ThB[3]	4 WFT (3 DFT)	0.25 gal/100 ft^2	10	14

For SI: 1 inch = 25.4 mm, 1 mil = 0.0254 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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SUPREMESEAL 500 AND
SUPREMESEAL 750
OPEN CELL SPRAY-APPLIED FOAM
PLASTIC INSULATIONS

CSI Section:
07 21 00 Thermal Insulation

1.0 RECOGNITION

The SupremeSeal 500 and SupremeSeal 750 open cell spray-applied foam plastic insulations as evaluated and represented in IAPMO UES Evaluation Report ER-974 and with changes as noted in this supplement is a satisfactory alternative for use in buildings built under the following codes (and regulations):

- 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 500 and SupremeSeal 750 open cell spray-applied foam plastic insulations recognized in this report are subject to provisions of the 2021 IBC and 2021 IRC as noted in this report and the following limitations:

2.1 The clearance between the foam insulations 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-974.