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XTREMESEAL 0.5 LX SPRAY FOAM INSULATION

CSI Section:
07 21 00 Thermal Insulation

1.0 RECOGNITION

XtremeSeal 0.5 LX 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 physical properties, thermal resistance, surface burning characteristics, air permeability, alternate thermal barrier assemblies and attic and crawl space installations were evaluated for compliance with the following codes and regulations:

- 2018, 2015, 2012 and 2009 International Building Code® (IBC)
- 2018, 2015, 2012 and 2009 International Residential Code® (IRC)
- 2018, 2015, 2012 and 2009 International Energy Conservation Code® (IECC)
- 2017 and 2014 Florida Building Code, Building (FBC, Building) and 2017 and 2014 Florida Building Code, Residential (FBC, Residential) – supplement attached.

2.0 LIMITATIONS

Use of the XtremeSeal 0.5 LX Spray Foam Insulation recognized in this report is subject to the following limitations:

- 2.1** The insulation 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 3.3.3 and 3.3.6 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 installation the insulation and the surfaces to which it is applied shall be protected from exposure to weather.

2.5 The insulation shall be installed by professional spray polyurethane foam installers approved by XtremeSeal, LLC.

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 2009 IBC Section 2603.8, or IRC Section 318.4, as applicable.

2.7 When required by the applicable code, a vapor retarder shall be installed.

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

- 2018, 2015, 2012 or 2009 IBC Section 2603.2
- 2018, 2015, 2012 or 2009 IRC Section R316.2
- 2018, 2015 IRC Section N1101.10.1.1
- 2012 IRC Section N1101.12.1.1
- 2009 IRC Section N1101.4.1
- 2018, 2015 or 2012 IECC Sections C303.1.1.1 or R303.1.1.1
- 2009 IECC Section 303.1.1.1

2.9 Foam Plastic used in plenums as interior finish or interior trim under the 2018 edition IBC shall comply with Section 2603.7.

2.10 The insulation shall be produced by XtremeSeal in St. Louis, Missouri.

3.0 PRODUCT USE

3.1 General: When installed in accordance with Section 3.3 of this report, XtremeSeal 0.5 LX Foam Insulation can be used in wall cavities, floor assemblies or ceiling assemblies, and/or 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: XtremeSeal 0.5 LX Spray Foam Insulation shall comply with requirements in 2018, 2015 and 2012 IECC Sections C402.1 and R402, or 2009 IECC Section 402, as applicable.

3.2.1 Air Permeability: When tested in accordance with ASTM E2178 at a minimum thickness of 3.5 inches (89 mm), XtremeSeal 0.5 LX Spray Foam Insulation is classified as an

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.





air-impermeable insulation in accordance with Section 1202.3 of the 2018 IBC, Section 1203.3 of the 2015 IBC, Section R806.5 of the 2018, 2015 and 2012 IRC or Section R806.4 of the 2009 IRC, as applicable.

3.2.2 DC-315 Fireproof Paint: DC-315 Fireproof Paint 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.

3.2.3 Thermal Resistance (R-Values): XtremeSeal 0.5 LX 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.

Thickness (inch)	R-Value
1	3.7
2	7.3
3	11
3.5	13
4	14
5	18
5.5	20
6	21
7	25
7.5	27
8	29
9	32
10	36
11	39
12	43

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 3.5-inch thicknesses.

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

3.2.4 Surface Burning Characteristics: At a maximum thickness of 4 inches (102 mm) and a nominal density of 0.5 pcf (16 kg/m³), the XtremeSeal 0.5 LX 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 XtremeSeal 0.5 LX Spray Foam insulation and this report shall be available on the jobsite during installation. Where conflicts occur, the most restrictive governs.

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: XtremeSeal 0.5 LX 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 15-minute 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 prescriptive 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 XtremeSeal 0.5 LX Spray Foam Insulation shall not exceed 10 inches (254 mm) on walls and other vertical surfaces and 12 inches (305 mm) on ceilings and other horizontal and overhead surfaces; and
- b. The XtremeSeal 0.5 LX Spray Foam Insulation is coated with a minimum 18 mils (0.46 mm) wet film thickness (12 mils (0.3 mm) dry film thickness) or DC-315 Fireproof Paint intumescent coating as described in Section 3.2.2 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 in Attics or Crawl Spaces: When used in an attic or crawl space where entry is made only for service of utilities, XtremeSeal 0.5 LX 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.

3.3.5 Installation with a Prescriptive Ignition Barrier: When installed within attics or crawl spaces where entry is made only for the service of utilities, XtremeSeal 0.5 LX Spray Foam Insulation, at a maximum of 4 inches (102 mm) thick 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.



3.3.6 Installation with an Alternative Ignition Barrier Assembly: When installation is in accordance with this section, the prescriptive ignition barrier specified 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: XtremeSeal 0.5 LX Spray Foam Insulation may be installed in attics and crawl spaces using an alternative ignition barrier assembly provided:

- a. The thickness of the foam plastic insulation applied to the underside of the top of the space shall not exceed 12 inches (305 mm).
- b. The thickness of the foam plastic insulation applied to the vertical surfaces shall not exceed 10 inches (254 mm).
- 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 IBC Section 1203.2 or IRC Section R806, as applicable, attic ventilation is provided, as applicable.
- g. In accordance with 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.

3.3.6.2 Attics and Crawl Spaces: XtremeSeal 0.5 LX Spray Foam Insulations may be spray-applied in attics to the underside of roof sheathing, roof rafters and vertical surfaces, and in crawl spaces to the underside of floors and vertical surfaces as described in this section.

When applied to the underside of the top of the space, the thickness of the XtremeSeal 0.5 LX Spray Foam Insulation shall not exceed 12 inches (304 mm), and when applied to vertical surfaces maximum thickness shall not exceed 10 inches (254 mm). The Spray Foam Insulation must be coated with 4 mils (0.1 mm) wet film thickness (2.7 mils) dry film thickness (0.07 mm) of DC-315 Fireproof Paint as described in Section 3.2.3.

3.3.6.3 Unvented Attics: XtremeSeal 0.5 LX 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 2018, 2015, and 2012 IRC, or Section R806.4 of the 2009 IRC, as applicable. A vapor retarder shall be installed as required in Section 1202.3(4) of the 2018 IBC or Section 1203.3 (4) of the 2015 IBC in Climate Zones 5, 6, 7 and 8.

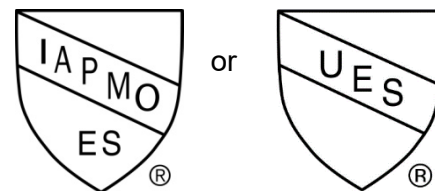
4.0 PRODUCT DESCRIPTION

XtremeSeal 0.5 LX Spray Foam Insulation is a spray-applied, polyurethane foam plastic and complies as 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

XtremeSeal 0.5 LX Spray Foam Insulation containers are identified by the manufacturer's name (**SES Foam, LLC**) address and telephone number, product name, use instructions, density flame-spread and smoke-development indices, date of manufacture, thermal resistance values, the name or logo of the inspection agency (Quality Control Consultants, LLC) and evaluation report number (ER-538). The spacer identification may also include the IAPMO Uniform Evaluation Service Mark of Conformity. Either Mark of Conformity may be used as shown below:



IAPMO UES ER-538

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, AC377, dated April 2016 (Editorially revised in April 2018).
- 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 XtremeSeal 0.5 LX Spray Foam Insulation to assess their conformance to the codes shown in Section 1.0 of this report and documents the product's certification. Products are manufactured at locations noted in Section 2.10 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 at info@uniform-es.org



FLORIDA SUPPLEMENT

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1.0 RECOGNITION

XtremeSeal 0.5LX Spray Foam Insulation evaluated in IAPMO UES Evaluation Report ER-538 is a satisfactory alternative to the following codes and regulations:

- 2017 and 2014 Florida Building Code, Building (FBC, Building)
- 2017 and 2014 Florida Building Code, Residential (FBC, Residential)

2.0 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, as applicable.

2.2 Verification shall be provided that a quality assurance agency audits the manufacturers 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).

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