



## SES FOAM, LLC SES 0.5 SPRAY FOAM INSULATION

### CSI Section: 07 21 00 Thermal Insulation

#### 1.0 RECOGNITION

SES 0.5 Spray Foam Insulation has been evaluated for use as spray foam insulation complying with IBC Section 2603, IRC Section R316, 2015 and 2012 IECC Sections C303, C402, R303 and R402 and 2009 IECC Sections 303 and 402. SES 0.5 Spray Foam Insulation evaluated in this report is a satisfactory alternative to the following codes and regulations:

- 2015, 2012 and 2009 International Building Code® (IBC)
- 2015, 2012 and 2009 International Residential Code® (IRC)
- 2015, 2012 and 2009 International Energy Conservation Code® (IECC)
- 2014 Florida Building Code, Building (2014 FBC, Building) and 2014 Florida Building Code, Residential (FBC, Residential) – See Page 6 for the supplement.

#### 2.0 LIMITATIONS

Use of the SES 0.5 Spray Foam Insulation recognized in this report are subject to the following:

**2.1** The insulation shall be installed in accordance with the manufacturer's published installation instruction. 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 3.3.4.2 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 3.3.4.2 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 SES Foam, LLC.

**2.6** Use of the insulation in areas of "very heavy" termite infestation shall be in accordance with the 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** Labeling and jobsite certification of the insulation and coatings shall comply with IBC Section 2603.2, 2015 IRC N1101.10 and N1101.10.1.1, 2012 IRC Section N1101.12 and N1101.12.1, 2009 IRC Section N1101.4 and N1101.4.1, IECC Sections C303.1.1 and C303.1.2, as applicable.

**2.8** The insulation produced at SES Foam, LLC, located in St. Louis, Missouri shall be under a quality control program with inspections by Quality Control Consultants, LLC.

#### 3.0 PRODUCT USE

**3.1 General:** When installed in accordance with Section 3.3 of this report, SES 0.5 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:** SES 0.5 Spray Foam Insulation shall comply with requirements in 2015 and 2012 IECC Sections C402.1 and R402, or 2009 IECC Section 402, as applicable.

**3.2.2 Air Permeability:** When tested in accordance with ASTM E2178 at a minimum thickness of 3.5 inches (89 mm), SES 0.5 Spray Foam Insulation is classified as an air-impermeable insulation in accordance with Section 1203.3 of the 2015 IBC, and Section R806.5 of the 2015 and 2012 IR or Section R806.4 of the 2009 IRC, as applicable.

**3.2.3 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.

**3.2.4 Thermal Resistance (R-Values):** SES 0.5 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.



**TABLE 1**  
**Thermal Resistance (R-Value)<sup>1,2</sup>**  
**(°F·ft<sup>2</sup>·h/BTU)**

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·ft<sup>2</sup>·h/Btu = 0.176 110 K·m<sup>2</sup>/W.

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

<sup>2</sup>R-Values greater than 10 are rounded to the nearest whole number.

**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/m<sup>3</sup>), the SES 0.5 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 SES 0.5 Spray Foam Insulation and this report shall be available and strictly adhered to at all times on the jobsite during installation.

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:** SES 0.5 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 without a Prescriptive Thermal Barrier:** 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 SES 0.5 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 SES 0.5 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 3.2.3 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, SES 0.5 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:** Where entry is made only for the service of utilities, SES 0.5 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 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 without a Prescriptive Ignition Barrier:** When installation is in accordance this this section, the 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:** When SES 0.5 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 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.

**3.3.4.3 Attics and Crawl Spaces:** SES 0.5 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 SES 0.5 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.

**3.3.4.4 Unvented Attics:** SES 0.5 Spray Foam Insulation may be installed in unvented attic assemblies and unvented enclosed rafter assemblies in accordance with 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.

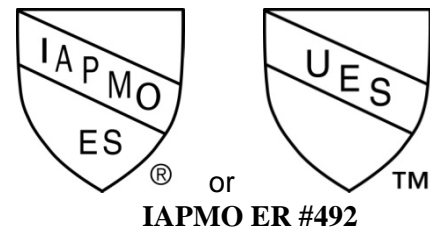
#### 4.0 PRODUCT DESCRIPTION

SES 0.5 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/m<sup>3</sup>).

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

SES 0.5 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, the name or logo of the inspection agency (Quality Control Consultants, LLC) and evaluation report number (ER-492). The spacer identification may also include the IAPMO Uniform Evaluation Service Mark 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, AC377, dated April 2016.
- 6.3 Report of Flammability Testing in accordance with NFPA 286.
- 6.4 Report of Air Permeance based on ASTM E2178.

#### 7.0 CONTACT INFORMATION

**SES Foam, LLC**  
4008 Louetta Road #538  
Spring, Texas 77388  
(713) 239-0252  
[www.sesfoam.com](http://www.sesfoam.com)



## 8.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on Cascadia Clip® Fiberglass Thermal Spacers to assess their conformance to the codes shown in Section 1.0 of this report and documents the product's certification.

**Brian Gerber, P.E., S.E.**  
Vice President, Technical Operations  
Uniform Evaluation Service

**Richard Beck, PE, CBO, MCP**  
Vice President, Uniform Evaluation Service

**GP Russ Chaney**  
CEO, The IAPMO Group

For additional information about this evaluation report please visit  
[www.uniform-es.org](http://www.uniform-es.org) or email at [info@uniform-es.org](mailto:info@uniform-es.org)



## FLORIDA SUPPLEMENT

### SES 0.5 SPRAY FOAM INSULATION

#### CSI Section: 07 21 00 Thermal Insulation

#### 1.0 RECOGNITION

SES 0.5 Spray Foam Insulation evaluated in IAPMO UES Evaluation Report ER-492 is a satisfactory alternative to the following codes and regulations:

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

#### 2.0 LIMITATIONS

**2.1** Installation of spray foam insulation in exterior walls of one-story buildings located in High-Velocity Hurricane Zones shall comply with Section 2612.3.2.3 of the Florida Building Code, Building.

**2.2** Installation of spray foam insulation in exterior walls of multistory buildings located in High-Velocity Hurricane Zones shall comply with Section 2612.3.2.4 of the Florida Building Code, Building.

**2.3** 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 R318.6 of the Florida Building Code, Residential, as applicable.

**2.4** 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](http://www.uniform-es.org) or email at [info@uniform-es.org](mailto:info@uniform-es.org)

**SES Foam, LLC**  
4408 Louetta Road, #538  
Spring, Texas 77388  
[www.sesfoam.com](http://www.sesfoam.com)