



## STARRFOAM MANUFACTURING

### STARRFOAM INSULATION BOARDS AND INSULATED SHEATHING

#### CSI Section:

07 21 00 Thermal Insulation

07 22 00 Sheathing

07 25 00 Water-resistive barriers

#### 1.0 RECOGNITION

StarRgard and StarRgard Plus Insulation Boards and StarRStruc and StarRStruc Plus Insulated Sheathing described in this report have been evaluated for use as foam plastic insulation in accordance with Section 2603 of the IBC and Section R316 of the IRC, and as water-resistive barriers in accordance with Section 1403.2 of the IBC and Section R703.2 of the IRC. The physical, surface burning, water resistance, and thermal resistance properties of StarRgard Plus, StarRStruc and StarRStruc Plus comply with the intent of the provisions of the following codes and regulations:

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

#### 2.0 LIMITATIONS

Use of the StarRgard and StarRgard Plus Insulation Boards and StarRStruc and StarRStruc Plus Insulated Sheathing recognized in this report are subject to the following limitations:

**2.1** StarRgard, StarRgard Plus, StarRStruc and StarRStruc Plus shall be installed in accordance with the applicable code, the manufacturers installation instructions, and this report. Where there is a conflict, the most restrictive requirements shall govern.

**2.2** In areas of “Very Heavy” termite infestation probability, protection against termites is required in accordance with IBC Section 2603.8 or IRC Section R318.4.

**2.3** The structural performance of StarRStruc and StarRStruc Plus was not evaluated and is not part of the scope of recognition of this report.

**2.4** The surface burning characteristics for the fibrous panel portion of the StarRStruc and StarRStruc Plus was not evaluated and is not part of the scope of recognition of this report.

**2.5** All perforations, panel joints, and fastener locations shall be sealed using self-adhered flashing tape complying with AAMA 711.

**2.6** StarRFoam Insulated Sheathing and Insulation Boards used on the exterior side of exterior walls shall be covered with approved exterior wall coverings.

**2.7** The insulated sheathing and insulation boards shall not be used as a nailing base for exterior wall coverings. Siding fasteners shall penetrate through the StarRFoam Sheathing or Boards and into the framing members.

**2.8** StarRgard, StarRgard Plus, StarRStruc and StarRStruc Plus are manufactured in Arlington, Texas.

#### 3.0 PRODUCT USE

StarRgard and StarRgard Plus Insulation Boards and StarRStruc and StarRStruc Plus Insulated Sheathing are for use as insulated water-resistive barrier and sheathing panels in Type V Construction under the IBC and buildings constructed in accordance with the IRC.

##### 3.1 Installation

All StarRgard, StarRgard Plus, StarRStruc, and StarRStruc Plus panel edges shall be backed by framing. The panels shall be installed using minimum 16-gauge staples having 1/2-inch (12.7 mm) or 1-inch (25.4 mm) crowns, or minimum 11-gauge roofing nails. The fasteners shall penetrate into the framing members at least 1 inch (25.4 mm). Joints between the boards and all fastener locations shall be sealed with flashing tape meeting the requirements of AAMA 711.

**3.1.1 Installation of StarRgard and StarRgard Plus:** StarRgard and StarRgard Plus panels shall be fastened at 12 inches (305 mm) on center along all framing members.

**3.1.2 Installation of StarRStruc and StarRStruc Plus:** StarRStruc and StarRStruc Plus insulated sheathing shall be installed with the fibrous-panel side of the sheathing against the framing and the foam plastic insulation side facing the exterior. StarRStruc and StarRStruc Plus shall be fastened at 3 inches on-center (76 mm) around the panel perimeter and at 6 inches on-center (152 mm) in the field.

##### 3.2 Design

**3.2.1 Thermal Barrier:** Insulation boards and insulated sheathing noted in this report are required to be separated from the interior of the building by a thermal barrier complying with Section 2603.4 of the IBC or Section R316.4 of the IRC.





**3.2.2 Water-resistive Barrier:** The StarRgard and StarRgard Plus Insulation Boards, and StarRStruc and StarRStruc Plus Insulated Sheathing, with all joints and perforations sealed using approved flashing tape, meet the requirements of Exception 2 of Section 1402.2 of the 2018 IBC (Exception 2 of Section 1403.2 of the 2015 and 2012 IBC).

**3.2.3 Thermal resistance:** R-values for StarRgard, StarRgard Plus, StarRStruc and StarRStruc Plus are shown in Table 1 of this report.

### 3.2.4 Surface Burning Characteristics:

**3.2.4.1** StarRgard and StarRgard Plus exhibit a flame spread index of less than 25 and a smoke-developed index of less than 450 when tested in accordance with the requirements of ASTM E84.

**3.2.4.2** StarRStruc and StarRStruc Plus exhibit a flame spread index of less than 25 and a smoke developed index of less than 450 on the insulated side of the panel when tested in accordance with the requirements of ASTM E84.

## 4.0 PRODUCT DESCRIPTION

**4.1 StarRgard:** StarRgard is an EPS rigid thermal insulation board with a 1.0-mil-thick polypropylene film laminated to each face. The EPS is formed into Type I, VIII, II, IX, XIV and XV rigid thermal insulation boards. StarRgard qualifies as a water-resistive barrier when installed as directed. StarRgard boards are white in color, 8 feet long, available in widths of 2 feet and 4 feet, and in thicknesses ranging from ½ inch to 4 inches. See Table 1 for EPS type, density, and thermal resistance. The EPS board is recognized by an approved evaluation entity for use as a foam plastic insulation and is specified in the approved quality assurance manual.

**4.2 StarRgard Plus:** StarRgard Plus Insulation Boards are manufactured using BASF Neopor® EPS beads formed into Types I, VIII, II, II (1.45) and IX rigid thermal insulation boards. The insulation boards have a 1.0-mil-thick polypropylene film laminated to each face. StarRgard Plus qualifies as a water-resistive barrier when installed as directed. The Neopor® board is recognized by an approved evaluation entity for use as a foam plastic insulation and is specified in the approved quality assurance manual. StarRgard Plus boards are gray in color, 4 feet wide, and available in lengths ranging from 4 feet to 10 feet and thicknesses ranging from ¼-inch to 4 inches. See Table 1 for EPS Type, density, and thermal resistance.

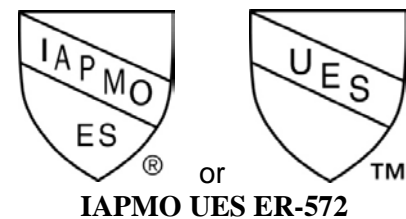
**4.3 StarRStruc:** StarRStruc Insulated Sheathing is a minimum 0.075-inch-thick (1.9 mm) fibrous panel with a minimum 1-inch-thick Type I EPS StarRgard Insulation

Board laminated to the outside. When used with the fibrous panel consisting of laminated plies of cellulosic fibers to make StarRStruc Insulated Sheathing, the EPS StarRgard Insulation Board is marked with the StarRStruc logo.

**4.4 StarRStruc Plus:** StarRStruc Plus Insulated Sheathing is a minimum 0.075-inch-thick (1.9 mm) fibrous panel consisting of laminated plies with cellulosic fibers with a minimum 1-inch-thick Type I Neopor® EPS StarRgard Plus Insulation Board laminated to the outside. When used with the fibrous panel to make StarRStruc Plus Insulated Sheathing, the EPS StarRgard Plus Insulation Board is marked with the StarRStruc Plus logo.

## 5.0 IDENTIFICATION

StarRgard, StarRgard Plus, StarRStruc and StarRStruc Plus are identified with the manufacturer's name, the product name, the EPS type, density, and thickness, the IAPMO ES Mark of Conformity and the evaluation report number (ER-572). Either Mark of Conformity may be used as follows:



## 6.0 SUBSTANTIATING DATA

The following data was reviewed, evaluated and used to establish recognition of StarRgard, StarRgard Plus, StarRStruc, and StarRStruc Plus for the uses described in Section 1.0. The test reports are from laboratories in compliance with ISO/IEC 17025.

- 6.1** Manufacturer's Literature and Installation Instructions.
- 6.2** Data in accordance with Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2015, editorially revised October 2017.
- 6.3** Data in accordance with Acceptance Criteria for Foam Plastic Sheathing Panels used as Water-resistive Barriers (AC71), dated February 2003, editorially revised January 2018.
- 6.4** Reports of testing for thermal resistance in accordance with ASTM C518.
- 6.5** Reports of testing in accordance with ASTM E331 to qualify the panels as a water-resistive barrier.



## 7.0 CONTACT INFORMATION

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## 8.0 STATEMENT OF RECOGNITION:

This report describes the results of research carried out by IAPMO Uniform Evaluation Service on StarRFoam's StarRgard, StarRgard Plus, StarRStruc and StarRStruc Plus to assess conformance to the codes listed in Section 1.0 of this report and serves as documentation of the product certification. Products are manufactured at the location noted in Section 2.8 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

**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)

**TABLE 1 – EPS BOARD DENSITY AND THERMAL RESISTANCE**

Product	EPS Type	ASTM C578 Designation	Minimum Density of EPS (pcf)	Thermal Resistance °F·ft <sup>2</sup> ·hr/BTU per inch of thickness @ 75°F
StarRgard	1.0 pcf	Type I	0.9	4.0
	1.25 pcf	Type VIII	1.15	4.1
	1.50 pcf	Type II	1.35	4.4
	2.0 pcf	Type IX	1.8	4.6
	2.5 pcf	Type XIV	2.4	4.5
	3.0 pcf	Type XV	3.0	4.5
StarRgard Plus	Neopor®	Type I	0.9	4.3
		Type VIII	1.15	4.5
		Type II	1.35	4.5
		Type II (1.45)	1.45	4.6
		Type IX	1.80	4.6
StarRStruc	1.0 pcf	Type I	0.9	4.0
StarRStruc Plus	Neopor	Type I	0.9	4.3

For SI: 1 inch = 25.4 mm, 1°F·ft<sup>2</sup>·h/BTU=0.176110 K·m<sup>2</sup>/W, 1 pcf=16 kg/m<sup>3</sup>