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ESR-1566

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Reissued 07/2017
This report is subject to renewal 07/2018.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 21 00—THERMAL INSULATION
SECTION: 07 22 00—ROOF AND DECK INSULATION
SECTION: 07 25 00—WATER-RESISTIVE BARRIERS/WEATHER BARRIERS

REPORT HOLDER:

STAR R FOAM MANUFACTURING, INC.

1012 NORTH COMMERCE STREET
FORT WORTH, TEXAS 76164

EVALUATION SUBJECT:

STAR R FOAM INSULATION BOARDS

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 21 00—Thermal Insulation
Section: 07 22 00—Roof and Deck Insulation
Section: 07 25 00—Water-resistive Barriers/Weather Barriers

REPORT HOLDER:

STAR R FOAM MANUFACTURING, INC.
3220 EAST AVENUE F
ARLINGTON, TEXAS 76011
(800) 722-6218
www.starrfoam.com

EVALUATION SUBJECT:

STAR R FOAM INSULATION BOARDS

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 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)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Physical properties
- Surface burning characteristics
- Water resistance
- Thermal performance (*R*-value)
- Attic and crawl space installation
- Elimination of thermal barrier (roofing)
- Termite resistance

1.2 Evaluation to the following green code(s) and/or standards:

- 2016 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 2.5

2.0 USES

2.1 General:

The Star R Foam insulation boards are EPS foam plastic boards used as a general, nonstructural, thermal insulation material. The insulation boards may be installed in exterior walls; in wall cavities; in door cavities; as a component of classified roof assemblies; as architectural shapes; in attics and crawl spaces; as exterior perimeter insulation around concrete slab edges; on foundation walls or under flat concrete slab on grade construction, except in areas where the probability of termite exposure is “very heavy” as defined in 2015 IBC Section 2603.8 [2012 IBC Section 2603.9 (2009 IBC Section 2603.8)] and IRC Section R318.4. When used as the core of sandwich panels, the insulation boards must be specifically recognized in a current ICC-ES evaluation report on the sandwich panel. The insulation may be used as roof insulation as a component of a Class A, B or C roof covering system installed directly to steel decks when specifically recognized for such use in a current ICC-ES evaluation report or when installed as described in Section 4.6. The insulation may be used on the outside faces of exterior walls of Type V-B construction (IBC) and on structures constructed in accordance with the IRC.

2.2 STAR R Foam EPS Insulation Boards:

The Star R Foam expanded polystyrene (EPS) insulation boards may be used in roof covering assemblies when specifically recognized in the current ICC-ES report for the roof-covering system. The evaluation report for the roof covering material must recognize the expanded polystyrene foam plastic insulation as part of a Class A, B or C roof assembly tested in accordance with ASTM E108 or UL 790.

The Star R Foam EPS insulation boards may be used as a core material in doors that do not require a fire-resistance rating when installed in accordance with IBC Sections 2603.4.1.7 and 2603.4.1.8, IRC Sections R316.5.5 and R316.5.6.

2.3 STAR R Foam EIFS Grade (SWG) Insulation Boards:

The Star R Foam EIFS Grade (SWG) insulation boards are used as nonstructural thermal insulation as a component in exterior insulation and finish wall systems (EIFS). The insulation is used on the outside faces of exterior walls when an ASTM C578, Type I, expanded polystyrene foam plastic board is specified in a current ICC-ES evaluation report for an EIFS.

2.4 STAR R One-Coat Stucco Insulation Boards:

The Star R One-Coat Stucco insulation boards are used in one-coat cementitious exterior wall coating systems recognized in an evaluation report in which a generic ASTM C578, Type I or Type II, expanded polystyrene foam plastic board is specified.

2.5 Star R Gard Boards:

The Star R Gard boards may be used as an alternative to the water-resistive barriers specified in the IBC and IRC, when installed as set forth in Section 4.2. Star R Gard boards may be used as exterior perimeter insulation around concrete slab edges, on foundation walls or under flat concrete slab on grade construction, except in areas where the probability of termite exposure is "very heavy" as defined in 2015 IBC Section 2603.8 [2012 IBC Section 2603.9 (2009 IBC Section 2603.8)] and IRC Section R318.4.

The attributes of the Star R Gard boards used as an alterative water-resistive barrier have been verified as conforming to the requirements of (i) CALGreen Section 5.407.1; (ii) ICC 700-2015 Section 602.1.8, 11.602.1.8 and 12.6.602.1.8; (iii) ICC 700-2012 Section 602.1.8, 11.602.1.8 and 12.5.602.1.8; and (iv) ICC 700-2008 Section 602.9. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.0 DESCRIPTION

3.1 General:

Star R Foam insulation boards have a flame-spread index not exceeding 25 and a smoke-developed index not exceeding 450 when tested in accordance with ASTM E84. See Figure 1 for product descriptions.

3.2 Star R Foam EPS Insulation Boards:

Star R Foam EPS boards are molded closed-cell, expanded polystyrene foam plastic boards. The boards are available as Types I, II, VIII or IX boards complying with ASTM C578, and have densities and thermal resistance values as shown in Table 1. The boards are available in various lengths and widths and in thicknesses up to 5 inches (127 mm) with square, shiplap, or tongue-and-groove edges.

3.3 Star R Foam EIFS Grade (SWG) Insulation Board:

Star R Foam EIFS Grade (SWG) insulation boards have a minimum density of 0.90 pcf (14.4 kg/m^3). The boards comply as Type I in accordance with ASTM C578, and are available in various thicknesses up to 4 inches (127 mm) with square, shiplap, or tongue-and-groove edges. The boards have more restrictive requirements than the EPS board for conditioning, product dimensions, marking and packaging. For thermal resistance properties, see Table 1.

3.4 Star R One-Coat Stucco Insulation Board:

Star R One-coat Stucco boards are maximum $1^1/_2$-inch thick (38 mm), nominal 1.5 pcf density, EPS insulation boards with square, shiplap or tongue-and-groove edges. The boards are available in various lengths and widths. The boards comply as Type II in accordance with ASTM C578. For thermal resistance properties, see Table 1.

3.5 Star R Gard Board:

Star R Gard boards are maximum 4 inches thick (102 mm). The EPS insulation boards are ASTM C578, Type I, II, VIII or IX. The Star R Gard boards consist of an EPS foam plastic core with nominal 1 mil thick, nonperforated polypropylene (PP) film laminated to both faces. The Star R Gard boards have densities and thermal resistance values as shown in Table 1. The boards are 2 feet or 4 feet (610 mm or 1220 mm) wide by 8 feet (2438 mm) long, and have either square, shiplap or tongue-and-groove edges.

3.6 Star R Tape:

Star R Tape must be used with the Star R Gard boards when the board is used as an alternative water-resistive barrier as described in Section 4.2. The tape consists of a polyethylene backing with a rubber-based adhesive, and has a nominal thickness of 9 mils (0.23 mm) and a width of $1^7/_8$-inches (48 mm). The tape is supplied in 36-yard (33 m) rolls.

4.0 INSTALLATION

4.1 General:

Installation must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

Except as described in Section 4.4, the interior of the building must be separated from the insulation boards by an approved 15-minute thermal barrier as required in IBC Section 2603.4 or IRC Section R316.4 or R316.5. The installation of the insulation boards in areas of "very heavy" termite infestation probability must comply with 2015 IBC Section 2603.8 [2012 IBC Section 2603.9 (2009 IBC Section 2603.8)] or IRC Section R318.4, as applicable. A vapor retarder must be installed in accordance with IBC Section 1405.3 or 2015 and 2012 IRC Section R702.7 (2009 IRC Section R601). The insulation board may be applied to exterior faces of walls to a maximum thickness of $1^1/_2$ inches (38 mm), except insulation board thicknesses greater than $1^1/_2$ inches (38 mm) may be permitted if such installation is recognized in a current ICC-ES evaluation report on a wall covering. The attachment of finish materials over the insulation board must allow for a minimum 1-inch (25.4 mm) penetration of the fasteners into wood framing. Sheathing or a wall covering over the insulation must be structurally adequate to resist horizontal forces perpendicular to the wall. All walls must be braced in accordance with 2015 IBC Section 2308.6 [2012 and 2009 IBC Sections 2308.9.3 and 2308.12.4] or IRC Section R602.10, as applicable.

Insulation boards must not be used as a nailing base for finish materials or wall covering materials. Fasteners used to attach conventional wood, metal or plastic siding through insulation not exceeding a $1^1/_2$-inch (38 mm) thickness, must have sufficient length to penetrate 1 inch (25.4 mm) into structural wood framing or to protrude through structural sheathing or structural steel framing beneath. Attachment must comply with a current evaluation report for proprietary wall covering materials, or with the applicable code for code-described wall-covering materials.

When the insulation boards are applied over open framing, vertical butt joints must be over framing members. Vertical tongue-and-groove joints need not be over framing members, provided joints are staggered a minimum of one stud space from adjacent courses. For cementitious exterior wall coating systems, unbacked joints are permitted only when specified in the evaluation report on the cementitious exterior wall coating system.

4.2 Water-resistive Barrier—Star R Gard Boards:

4.2.1 General: When installed in accordance with this section, the Star R Gard boards may be used as an alternative to Type I felt complying with ASTM D226. The boards must be covered with an approved exterior wall covering.

When Star R Gard boards with square, shiplap, or tongue-and-groove joints along the long edges are installed vertically, the joints must occur over framing. When the long edges of boards are installed horizontally, the long edges must have tongue-and-groove, or shiplap joints as shown in Figure 1.

The Star R Gard boards are installed directly to framing and fastened to exterior framing spaced a maximum of 24 inches (610 mm) on center, except where further limited by the requirements for the wall covering. Fasteners used to attach the boards to framing must be either 6d ring shank nails with a 0.93-inch-diameter (24 mm) plastic washer, or 16-gage staples having a 1-inch-wide (25.4 mm) crown. The legs of the staple must penetrate through the boards into the frame at least 1 inch (25.4 mm). Joints between boards, corners created with the board and fastener locations must be taped with Star R tape centered over the joint, corner and fastener. Star R Gard boards must be installed with a corrosion-resistant weep screed. See Figure 2 for installation details.

For exterior plaster complying with IBC Section 2512 or 2015 IRC Section R703.7 [2012 and 2009 IRC Section R703.6], the length of the fasteners used to attach the lath must be proportionally increased based on the thickness of the Star R Gard boards. The increase in fastener length is to maintain penetration into framing that is equivalent to that of fasteners attaching the lath without insulation.

4.2.2 Penetrations: Flashing of flange-type window penetrations when Star R Gard boards are used as a water-resistive barrier must be accompanied by installation of flashing recognized in an ICC-ES evaluation report as complying with AC148, completely covering the framing sill and extending a minimum of 6 inches (51 mm) up the sides of the opening and approximately $1^1/_2$ inches beyond the face of the foam board at the front of the window opening. The flashing must be flush with the inside edge of the framing members on the inside of the wall. The flashing extending outside of the Star R Gard boards must be folded over the front face of the foam board. See Figure 2 for details.

Flashing of pipe penetrations must be accomplished by sealing around the pipe with sealant complying with ASTM A920, Type S, Grade NS, Use-NT, Use-A, Use-O. Flashing of other penetrating items must be in accordance with the wall covering manufacturer's published installation instructions.

4.3 Cementitious Exterior Wall Coatings:

Star R Gard boards and Star R One-Coat Stucco insulation boards may be used with cementitious exterior wall coatings when installed in accordance with this section (Section 4.3).

When used with a cementitious exterior wall coating recognized in an ICC-ES evaluation report, the Star R Gard boards are an alternative to 1-inch-thick (25.4 mm), 1.5 pcf density (24 kg/m^3), EPS foam plastic insulation specified in the ICC-ES evaluation report on the coating. When installed in accordance with Section 4.2, the Star R Gard boards may also be used as an alternative to Type I felt complying with ASTM D226. Star R Gard boards used in conjunction with stucco systems where the Star R Gard boards are not used as the water-resistive barrier, the Star R Gard boards are not required to be taped.

When used with ICC-ES–recognized cementitious exterior wall coatings, the Star R One-Coat Stucco boards are an alternative to 1-inch-thick (25.4 mm), 1.5 pcf density (24 kg/m^3), EPS foam plastic insulation specified in the ICC-ES evaluation report on the coating. The Star R One-Coat Stucco boards must be installed, with a water-resistive barrier, directly to open framing with blocked insulation board joints, or must be installed over solid sheathing. Conditions in the cementitious exterior wall coatings evaluation report for the foam plastic insulation, such as orientation, tongue-and-groove edges, square edges and taping, must be observed.

The cementitious exterior wall coating to be applied must be approved for use by the wall coating manufacturer.

Under the 2015 IBC, when application is over any wood-based sheathing, a water resistive barrier must be provided and must be one layer of Star R One-Coat Stuccor or Star R Gard insulation boards, having horizontal tongue-and groove edges as described in Section 3.4 or 3.5, respectively, over one layer one layer of water resistive barrier complying with ASTM E2556, Type I.

Under the 2012 and 2009 IBC, when application is over any wood-based sheathing, a water resistive barrier must be provided and must be one layer of the Star R One-Coat Stucco or Star R Gard insulation boards, having horizontal tongue-and-groove edges as described in Sections 3.4 or 3.5, respectively, over one layer of Grade D building paper having a minimum water-resistance rating of 60 minutes.

4.4 Special Uses—Attics and Crawl Spaces:

Star R Foam insulation boards, as described in Section 3.2, or Star R Gard boards, as described in Section 3.5, installed on either the exterior or interior side of framing, may be used on vertical surfaces in attics and crawl spaces without a covering being applied to the interior side of the foam plastic, provided all of the following conditions are met:

1. Attic ventilation is provided when required by IBC Section 1203.2 or IRC Section R806, as applicable.
2. Combustion air is provided that complies, as applicable, with Section 701 of the *International Mechanical Code*®, or IRC Section M1701.
3. Under-floor (crawl space) air ventilation is provided when required by 2015 IBC Section 1203.4 [2012 and 2009 IBC Section 1203.3] or IRC Section R408.1, as applicable.
4. Star R Foam EPS boards have a maximum density of 1 pcf (16 kg/m^3) and a maximum thickness of 4 inches (102 mm); or a maximum density of 2 pcf (32 kg/m^3) and a maximum thickness of 2 inches (51 mm); or a maximum density of 1.5 pcf (24 kg/m^3) and a maximum thickness of 2.6 inches (66 mm).
5. Star R Gard boards have a maximum density of 1 pcf (16 kg/m^3) and a maximum thickness of 1 inch (25.4 mm).

4.5 Star R Foam EIFS Grade (SWG) Insulation Board:

Type I Star R Foam EIFS Grade (SWG) insulation boards must be installed as part of an exterior cementitious wall covering, an EIFS system, or other proprietary wall system, when installation is in accordance with an ICC-ES evaluation report on the wall covering system.

4.6 Application Directly to Steel Roof Decks without a Thermal Barrier:

Under the IBC, Star R Foam EPS insulation boards may be used as components of a Class A, B or C roof covering installed on steel decks without a thermal barrier, when installed in accordance with this section (Section 4.6).

4.6.1 Materials:

4.6.1.1 Steel Deck: The steel roof decking must be minimum No. 22 gage [0.030 inch (0.76 mm)], $1^1/_2$-inch-deep (38 mm), unperforated, galvanized steel decking with flutes spaced a maximum of 6 inches (152 mm) on center. The deck must be welded or mechanically fastened to structural supports in accordance with the applicable code.

4.6.1.2 Foam Plastic Insulation: Star R Foam EPS boards are recognized for use on steel decks without a thermal barrier. The insulation boards may have maximum thicknesses up to 9 inches (229 mm) for Type I, 6 inches (152 mm) for Type II, 7.2 inches for Type VIII and $4^1/_2$ inches (114 mm) for Type IX.

4.6.1.3 Cover Board: When used, the cover board in the roof covering system must be either $^1/_4$-inch-thick (6.4 mm) Dens-Deck® roof board manufactured by Georgia-Pacific Corporation, or $^1/_2$-inch-thick (12.7 mm) wood fiberboard.

4.6.1.4 Roof Covering: The roof covering membrane must be either an EPDM or a thermoplastic membrane, recognized in a current ICC-ES evaluation report as part of a Class A, B or C roof covering system. The membrane must be mechanically attached, fully adhered, or ballasted. Thermoplastic membranes include polyvinyl chloride (PVC), modified PVC, chloro-sulphanated polyethylene (CSPE), and thermoplastic polyolefin (TPO). The membrane is limited to a maximum nominal thickness of 0.045 inch (1.14 mm). The evaluation report on the roof covering system must specify one of the following systems as the only classified roof covering system permitted:

a. A generic EPS insulation board having the same density and installed thickness as the roof insulation boards recognized in Section 4.6.1.2 of this report; the cover board described in Section 4.6.1.3; and the mechanically attached roof covering membrane described in Section 4.6.1.4, installed over the steel deck described in Section 4.6.1.1.

b. A generic EPS insulation board having the same density and installed thickness as the roof insulation boards recognized in Section 4.6.1.2; the mechanically attached roof covering membrane described in Section 4.6.1.4; and stone ballast installed over the steel deck described in Section 4.6.1.1.

4.6.2 Installation: The Star R Foam EPS roof insulation boards are loosely laid directly over the steel deck in single or multiple layers, to a maximum total thickness as noted in Section 4.6.1.2. The top layer of insulation must be placed so that the special wording required by Section 7.0, for roof coverings, is facing up. The optional cover board described in Section 4.6.1.3 must be laid over the insulation. The cover board is optional, depending on system requirements, when the method of attaching the roof is either mechanical fastening or adhesion. A cover board is not permitted in the system when the roof membrane is ballasted.

The method of attaching the roof covering, cover board or ballast, and insulation boards to the steel roof deck must be in accordance with the ICC-ES evaluation report on the roof covering membrane, and as described in Section 4.6.1.4.

4.6.3 Reroofing: New roofing must not be applied over existing roof covering systems as described in this report, since the fire performance of the systems is directly affected by the materials covering the foam plastic insulation. The components of the existing roofing that are to remain on the roof deck must be inspected to determine compliance with 2015 IBC Section 1511 [IBC Section 1510]. The existing roof covering membrane and, if necessary, the cover board must be removed before new roofing materials are installed. The new roofing materials must have characteristics specifically described in this report.

4.7 Termite Resistance: Star R foam insulation boards treated with Lanxess Preventol® TM-EPS Preservative insecticide is recognized for installation in areas subject to termites as noted in Table 2.

5.0 CONDITIONS OF USE

The Star R Foam EPS insulation boards described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0, subject to the following conditions:

5.1 The boards must be manufactured, identified and installed in accordance with this report, the manufacturer's published installation instructions and the applicable code. If there is a conflict between the manufacturer's published installation instructions and this report, this report governs.

5.2 Star R EPS insulation boards, EIFS Grade (SWG) insulation boards and One-Coat Stucco insulation boards must be covered with an approved exterior wall covering. A water-resistive barrier complying with IBC Section 1404.2 or IRC Section R703.2, as applicable, must be installed as specified for the approved assembly.

5.3 When the Star R Gard boards are installed on the exterior face of exterior walls as an alternative to the required water-resistive barrier, as described in Sections 4.2 and 4.3, the boards must be covered with an approved exterior wall covering.

5.4 The exterior wall covering spanning between wall framing members must provide the necessary structural resistance to wind and seismic forces.

5.5 Insulation boards must not be used as a nailing base for exterior siding materials. All nailing must be made through the insulation into the wall framing or structural sheathing as required by the siding manufacturer's published installation instructions or the applicable code.

5.6 Except as noted in Section 4.4, the insulation boards must be separated from the interior of the building with an approved 15-minute thermal barrier complying with IBC Section 2603.4 or IRC Section R316.4 or R316.5, as applicable.

5.7 Use of the foam plastic insulation in areas where the probability of termite infestation is "very heavy" must be in accordance with 2015 IBC Section 2603.8 [2012 IBC Section 2603.9 (2009 IBC Section 2603.8)] and IRC Section R318.4, as applicable.

5.8 For buildings in which the Star R Gard boards are used as a water-resistive barrier, all plans must be accompanied by drawings, consistent with the illustrations in this report, that include the following:

a. Installation at all openings, corners and insulation board terminations.

b. Location, configuration and method of sealing at fastener locations, of joints between boards and at corners.

c. Typical cross section, showing all components of the wall.

d. Typical wall pipe and window penetrations.

5.9 When the Star R Foam insulation boards are installed directly to a steel roof deck without a thermal barrier, the following conditions apply:

a. The insulation boards must be part of a Class A, B or C roof covering system as described in Section 4.6 of this report. The boards may be installed without the thermal barrier addressed in IBC Section 2603.4.1.5. The system is not permitted under the IRC.

b. Reroofing must be in accordance with Section 4.6.3.

5.10 The Star R Foam EPS insulation boards, Star R Foam EIFS Grade (SWG) insulation boards and Star R One-Coat Stucco insulation boards are produced in Anthony, Texas; Arlington, Texas; and Kingman, Arizona under a quality control program with inspections by ICC-ES.

5.11 The Star R Gard boards are produced in Anthony, Texas, Arlington, Texas, and Kingman, Arizona, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2015 (editorially revised May 2016).

6.2 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Sheathing Panels Used as Weather-resistive Barriers (AC71), dated February 2003 (editorially Revised January 2016).

6.3 Data in accordance with Section 3.1.7, exception 1, of ICC-ES Acceptance Criteria for Cementitious Exterior Wall Coatings (AC11), dated January 2013 (editorially revised December 2015).

6.4 Reports of room-corner fire tests in accordance with UL 1715.

6.5 Analysis of room corner fire tests.

6.6 Data in accordance with UL1256.

7.0 IDENTIFICATION

7.1 General:

Packages of insulation boards are labeled with the name and the address of the manufacturer (Star R Foam Manufacturing, Inc.); the product name; the date of manufacture; manufacturing location identification number (1149- Arlington, Texas; 1149D- Kingman, Arizona; and 1149B- Anthony, Texas); the nominal board density; the flame-spread index (25 or less); the smoke-developed index (450 or less); the thermal-resistance value (*R*-value); and the evaluation report number (ESR-1566). Boards greater than 1-inch-thick (25.4 mm) intended for use in attics or crawl spaces, in accordance with Section 4.4, are labeled on one edge with, “A/C”.

7.2 STAR R Foam EIFS Grade (SWG) Insulation Boards:

In addition to the identification described in Section 7.1, Star R Foam EIFS Grade (SWG) insulation boards are identified along one edge, and on both faces of one board from each package, with the name of the exterior coating (EIFS) company and the EIFS company’s evaluation report number.

7.3 STAR R One-Coat Stucco Boards:

In addition to the identification described in Section 7.1, STAR R One-Coat Stucco boards are identified along the short, square edge, with the board type (Type II); the nominal density (1.5 pcf); the Star R Foam name; and the evaluation report number (ESR-1566).

7.4 Star R Gard Boards:

In addition to the identification described in Section 7.1, packages of Star R Gard boards include a lot number. Also, the Star R Gard boards are identified on one face with the manufacturer’s name (Star R Foam); the product name (Star R Gard); the manufacturing location (Anthony, Texas; Fort Worth, Texas and Kingman, Arizona); and the evaluation report number (ESR-1566).

7.5 Star R Tape:

Rolls of Star R Tape are identified with the product name (Star R Tape); and the evaluation report number (ESR-1566).

7.6 Star R Foam Insulation Boards Treated with Preventol® TM-EPS Preservative Insecticide:

In addition to the identification described in Sections 7.1 through 7.5 Star R boards treated with Preventol TM-EPS Preservative Insecticide are labeled as shown in Figure 3.

TABLE 1—DENSITIES AND *R*-VALUES FOR INSULATION BOARDS

EPS CLASSIFICATION	NOMINAL DENSITY (pcf)	MINIMUM DENSITY (pcf)	*R*-VALUE PER 1-INCH THICKNESS AT 75°F [(hr-ft^2-°F)/Btu]
Type I	1.00	0.90	3.6
Type VIII	1.25	1.15	3.8
Type II	1.50	1.35	4.0
Type IX	2.00	1.80	4.2

For **SI:** 1 inch = 25.4 mm, 1 pcf = 16.02 kg/m^3, 1°F·ft^2·hr/Btu = 0.176 m^2·K/W, 1°F = 1.8°C+32.

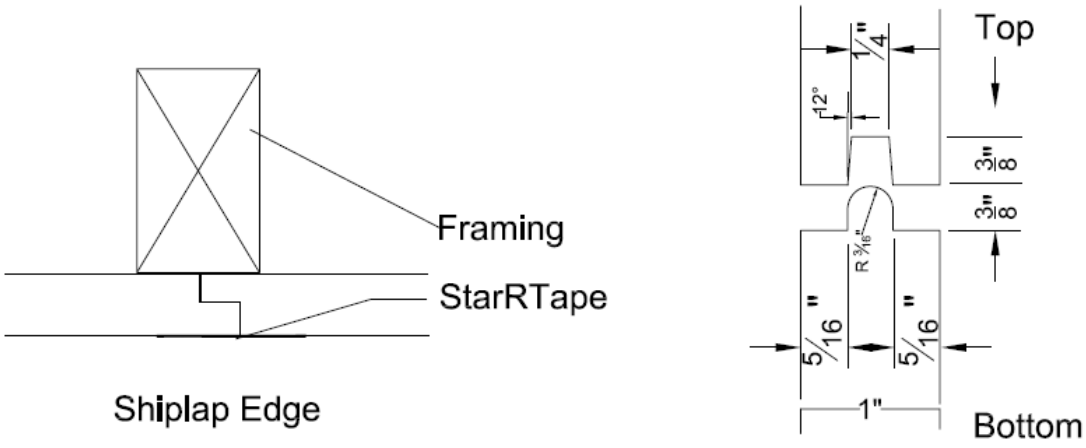

FIGURE 1—DESCRIPTION OF SHIPLAP AND TONGUE-AND-GROOVE EDGES

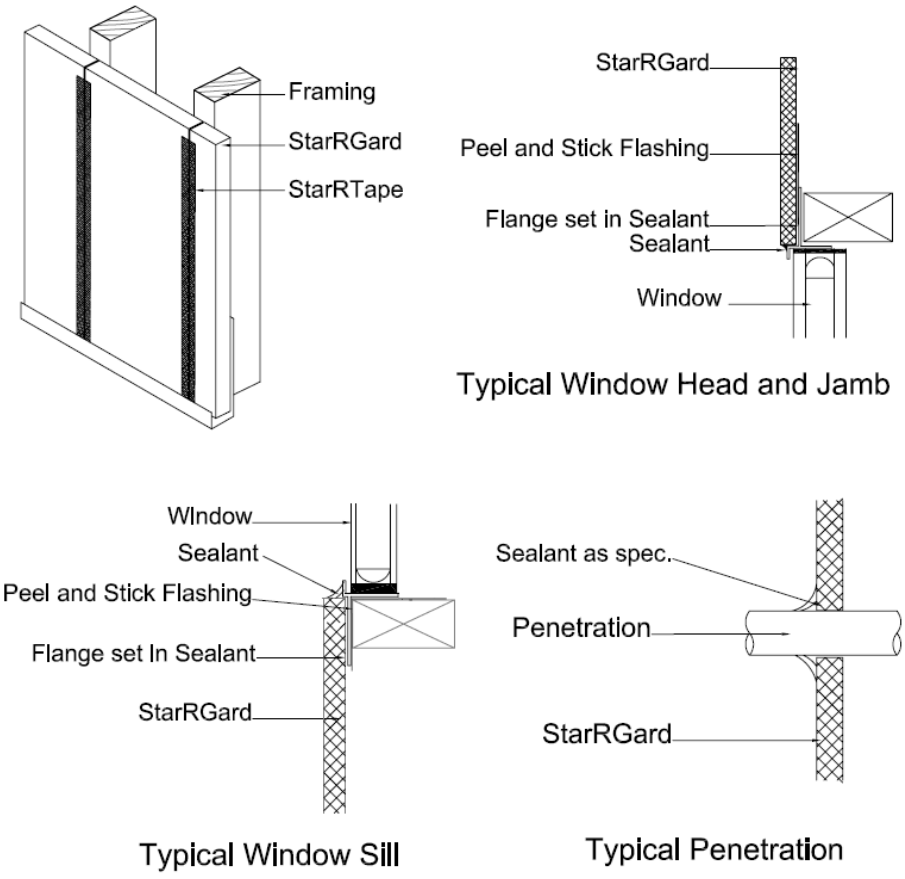

FIGURE 2—TYPICAL STARRGARD INSTALLATION

TABLE 2—MINIMUM DOSAGE LEVELS OF PREVENTOL® TM BY END USE

END USE	MINIMUM[1]
EPS Foam Used Above Ground Contact Low Hazard "None to Moderate" Termite Zones Per IRC Figure R301.2(6), IBC Figure 2603.8	100 ppm
EPS Foam Used Above Ground Contact Medium Hazard "Heavy to Very Heavy" Termite Zones Per IRC Figure R301.2(6), IBC Figure 2603.8 Formosan Termites	200 ppm
EPS Foam Used in Ground Contact/Below Ground Contact High Hazard "None to Very Heavy" Termite Zones Per IRC Figure R301.2(6), IBC Figure 2603.8 Formosan Termites	500 ppm

[1]The minimum dosage rate is expressed as ppm (parts per million) and is based on the final volume of molded EPS.

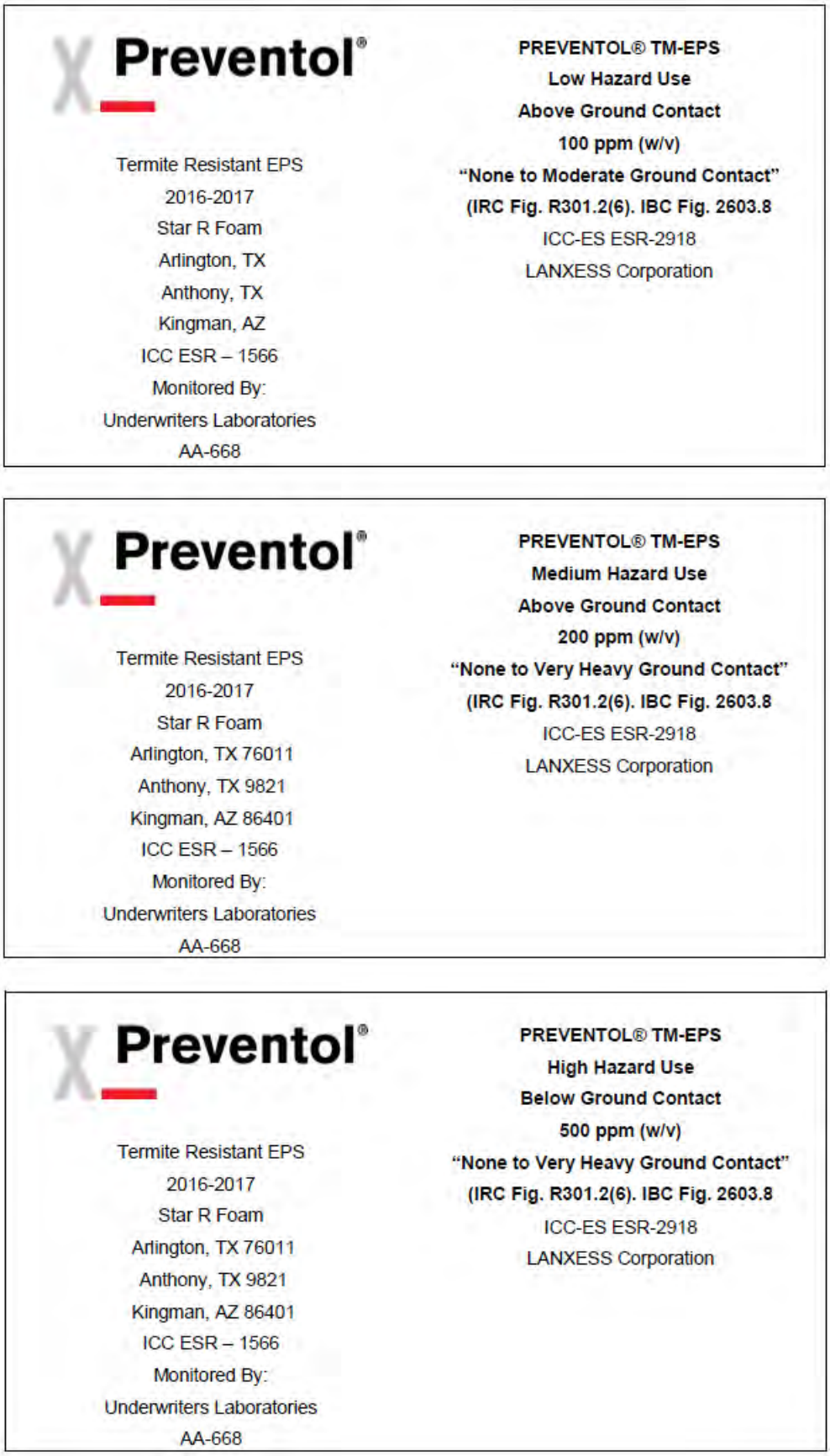

FIGURE 3—PREVENTOL® TM-EPS HAZARD USE LABEL