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# ICC-ES Report

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**ESR-3571**

Valid: 02/15 to 02/16

**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**

**SECTION: 07 21 00—THERMAL INSULATION**

**GAF**

**1 CAMPUS DRIVE  
PARSIPPANY, NEW JERSEY 07054**

**EVALUATION SUBJECT:**

**ENERGYGUARD™ POLYISO INSULATED SHEATHING**



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## ICC-ES Evaluation Report

**ESR-3571\***

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### DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

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

#### REPORT HOLDER:

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#### EVALUATION SUBJECT:

#### EnergyGuard™ POLYISO INSULATED SHEATHING

### 1.0 EVALUATION SCOPE

#### Compliance with the following codes:

- 2012 and 2009 *International Building Code*® (IBC)
- 2012 and 2009 *International Residential Code*® (IRC)
- 2012 and 2009 *International Energy Conservation Code*® (IECC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)<sup>†</sup>

<sup>†</sup>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:

- Surface-burning characteristics
- Thermal resistance
- Water vapor transmission

### 2.0 USES

The EnergyGuard™ Polyiso Insulated Sheathing is used as thermal insulation applied in or on walls and ceilings of Type V-B construction in Use Group R buildings under the IBC and in buildings constructed under the IRC.

### 3.0 DESCRIPTION

#### 3.1 General:

The EnergyGuard™ Polyiso Insulated Sheathing has a closed-cell, rigid polyisocyanurate foam plastic core, bonded on both sides with an aluminum foil and kraft paper laminate. The foam plastic core has a maximum density of 2.0 pcf (32.0 kg/m<sup>3</sup>). The insulation has square edges and is available in various lengths and widths and in thicknesses between 1/2 inch and 2 inches (12.7 and

51 mm). The insulation board meets the requirements for classification as a Type I, Class 1 material in accordance with ASTM C1289.

#### 3.2 Surface-burning Characteristics:

The foam core of EnergyGuard™ Polyiso Insulated Sheathing has a flame-spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 (UL723) at a maximum thickness of 2 inches (51 mm).

#### 3.3 Thermal Resistance, R-values:

EnergyGuard™ Polyiso Insulated Sheathing has thermal resistance (R-values) at a mean temperature of 75°F (24°C) as shown in Table 1.

#### 3.4 Vapor Retarder:

At a minimum thickness of 1 inch (25.4 mm), the insulation board has a vapor permeance of less than 0.1 perm [5.7 x 10<sup>-12</sup> kg/Pa x s x m<sup>2</sup>] when tested in accordance with ASTM E96 (Desiccant Method), and qualifies as a Class I vapor retarder.

### 4.0 DESIGN AND INSTALLATION

#### 4.1 General Installation:

EnergyGuard™ Polyiso Insulated Sheathing must be installed in accordance with the GAF published installation instructions, the applicable code and this report. The manufacturer's published installation instructions must be available on the jobsite at all times during installation.

At a maximum thickness of 2 inches (51 mm), EnergyGuard™ Polyiso Insulated Sheathing may be used as nonstructural insulating material where separated from the interior of the building by a 15-minute thermal barrier as described in Section 5.6. The insulation boards are installed with the long edge of the board parallel to the framing member, with the board edge centered on the framing member. The printed face of the board must be visible and the edges of the board in contact with each other. For exterior and interior wall applications, the insulation boards must be attached with galvanized ring shank nails with minimum 3/8-inch-diameter heads or staples with minimum 1-inch-diameter (25.4 mm) plastic caps. Fasteners must be long enough to penetrate the substrate a minimum of 3/4 inch (19.1 mm). The fasteners must be spaced a maximum of 16 inches (406 mm) on center in the field and 12 inches (305 mm) on center on the perimeter. Penetrations and board seams must be sealed in accordance with the manufacturer's installation instructions.

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The wall covering must be structurally adequate to resist transverse loads. For exterior wall covering applications, fasteners for insulation board thicker than 1½ inches (38 mm) must be considered for lateral resistance to ensure support for the exterior wall coverings. All walls must be braced in accordance with IBC Sections 2308.9.3 and 2308.12.4 or IRC Section R602.10, as applicable.

#### 4.2 Attics and Crawl Spaces:

When EnergyGuard™ Polyiso Insulated Sheathing is installed within attics and crawl spaces, where entry is made only for service of utilities, an ignition barrier must be installed in accordance with IBC Section 2603.4.1.6 or IRC Section R316.5.3 or R316.5.4, as applicable. The ignition barrier must be consistent with the requirements for the type of construction required by the applicable code, and must be installed in such a manner such that the foam plastic insulation is not exposed.

#### 5.0 CONDITIONS OF USE

The EnergyGuard™ Polyiso Insulated Sheathing described in this report complies with, or is suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 Use of the insulation board to resist structural loads is outside the scope of this report. The walls must be braced in accordance with the requirements of the applicable code.
- 5.3 The insulation board must not be used as a nailing base for exterior siding materials. All nailing must be into the wall framing as required by the siding manufacturer's instructions or the applicable code.
- 5.4 Jobsite certification and labeling of the insulation must comply with 2012 IRC Section N1101.12 or 2009 IRC

Section N1101.4; and 2012 IECC Section C303.1 or R303.3 or 2009 IECC Section 303.1, as applicable.

- 5.5 Use of insulation in areas where the probability of termite infestation is "very heavy" must be in accordance with 2012 IBC Section 2603.9, 2009 IBC Section 2603.8 or IRC Section R318.4, as applicable. In these areas, the insulation must not be installed on the exterior of the foundation walls or below floor slabs on grade or in contact with soil. Also, in these areas, there must be a clearance of at least 6 inches (152 mm) between the foam plastic insulation and exposed earth.
- 5.6 When the insulation board is used in interior applications, the interior of the building must be separated from the insulation boards with an approved thermal barrier as required in IBC Section 2603.4 or IRC Section R316.4.
- 5.7 When installed on the exterior surface of an exterior wall, a water-resistive barrier complying with the requirements of the applicable code must be provided.
- 5.8 EnergyGuard™ Polyiso Insulated Sheathing insulation boards are manufactured by GAF in Statesboro, Georgia and Gainesville, Texas, under a quality control program with inspections by ICC-ES.

#### 6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2012 (editorially revised August 2013).

#### 7.0 IDENTIFICATION

The EnergyGuard™ Polyiso Insulated Sheathing insulation boards described in this report are identified by a label on the board or on the packaging material bearing the manufacturer's name (GAF), the plant code or address, the product name, the flame spread and smoke developed indices, and the evaluation report number (ESR-3571).

TABLE 1—THERMAL RESISTANCE (R-VALUES)

THICKNESS (inches)	R-VALUE [(°F-ft <sup>2</sup> -hr)/Btu] at 75°F MEAN TEMPERATURE
½	3.6
¾	4.9
1	6.1
1¼	7.6
1½	8.9
1¾	10.3
2	11.7

For SI: 1 inch = 25.4 mm; 1°F-ft<sup>2</sup>-hr/BTU = 0.176 K-m<sup>2</sup>/W.