

UL Evaluation Report



UL ER1306-03

Issued: April 25, 2018

Visit UL's On-Line Certifications Directory: www.ul.com/erdirectory for current status of Report.

UL Category Code: ULEX

CSI MasterFormat®

DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION

Sub-level 2: 07 21 00 – Thermal Insulation

Sub-level 3: 07 21 13 – Board Insulation

Sub-level 2: 07 22 00 – Roof and Deck Insulation

Sub-level 3: 07 22 16 – Roof Board Insulation

COMPANY:

GAF
1 Campus Dr.
Parsippany NJ 07054
www.gaf.com

1. SUBJECT: EnergyGuard™ Polyiso Insulation, EnergyGuard™ Ultra Polyiso Insulation, EnergyGuard™ HD Polyiso Insulation, and EnergyGuard™ HD Plus Polyiso Insulation

2. SCOPE OF EVALUATION

- 2018, 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
- ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), Approved June 2015 (Editorially revised October 2017)
- ICC ES Acceptance Criteria for Quality Documentation (AC10), dated January 2018

The products were evaluated for the following properties:

- Roofing Systems for Exterior Fire Exposure (ANSI/UL790)
- Surface Burning Characteristics (ANSI/UL723, ASTM E84)
- Roof Deck Construction Material With Resistance to Internal Fire Exposure (ANSI/UL1256)
- Approval Standard for Class 1 Roof Covers (FM4450)
- Physical Properties (ASTM C1289)

3. REFERENCED DOCUMENTS

- ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), Approved June 2015 (Editorially revised October 2017)
- ICC ES Acceptance Criteria for Quality Documentation (AC10), Dated January 2018
- ASTM C1289-16a, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- ANSI/UL790, Standard Test Methods for Fire Tests of Roof Coverings, Eighth Edition including revisions through July 29, 2014
- ANSI/UL723 (ASTM E84), Test for Surface Burning Characteristics of Building Materials, Tenth Edition, including revisions through August 12, 2013
- ANSI/UL1256, Standard Fire Test of Roof Deck Constructions, Fourth Edition including revisions through July 17, 2013
- FM4450, Class 1 Insulated Steel Deck Roofs, Dated 1989 with Supplements through July 1992
- FM4470, Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction, Dated June 2012

4. USES

EnergyGuard™ Polyiso Insulation, EnergyGuard™ Ultra Polyiso Insulation, EnergyGuard™ HD Polyiso Insulation, and EnergyGuard™ HD Plus Polyiso Insulation roofing insulation panels described in this Report are used as above-deck roof insulation as a component of classified roofing assemblies as specified in Chapter 15 of 2018, 2015, 2012 and 2009 IBC and Chapter 9 of the 2018, 2015, 2012 and 2009 IRC.

5. PRODUCT DESCRIPTION

5.1 General:

The insulations covered under this Report are faced, closed-cell, rigid polyisocyanurate foam core boards, and qualify for use under Section 1508 of the 2018, 2015, 2012 and 2009 IBC and Section R906 of the 2018, 2015, 2012 and 2009 IRC.

5.1.1 EnergyGuard™ Polyiso Insulation: The polyisocyanurate core is faced on each side with a glass-fiber reinforced cellulosic felt facer and is classified as Type II, Class 1, Grade 2 in accordance with ASTM C1289. The product is available in thicknesses from 0.5 inch to 4.0 inches and board sizes 4x4 ft and 4x8 ft.

5.1.2 EnergyGuard™ Ultra Polyiso Insulation: The polyisocyanurate core is faced on each side with a coated glass-fiber mat facer and is classified as Type II, Class 2, Grade 2 in accordance with ASTM C1289. The product is available in thicknesses from 0.5 inch to 4.0 inches and board sizes 4x4 ft and 4x8 ft.

5.1.3 EnergyGuard™ HD Polyiso Insulation: The high density polyisocyanurate core is faced on each side with a coated glass facer and is classified as Type II, Class 4, Grade 1 in accordance with ASTM C1289. The product is available in a thickness of 0.5 inch and board sizes 4x4 ft and 4x8 ft.

5.1.4 EnergyGuard™ HD Plus Polyiso Insulation: The high density polyisocyanurate core is faced on each side with a coated glass facer and is classified as Type II, Class 4, Grade 2 in accordance with ASTM C1289. The product is available in a thickness of 0.5 inch and board sizes 4x4 ft and 4x8 ft.

5.2 The foam core for EnergyGuard™ Polyiso Insulation and EnergyGuard™ Ultra Polyiso Insulation have a flame-spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ANSI/UL 723 (ASTM E84) at a maximum thickness of 4 inches and a maximum density of 2.1 pounds per cubic foot, in accordance with Section 2603.3 of the 2018, 2015, 2012 and 2009 IBC and Section R316.3 of the 2018, 2015, 2012 and 2009 IRC.

EnergyGuard™ HD Polyiso Insulation and EnergyGuard™ HD Plus Polyiso Insulation have a flame-spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ANSI/UL 723 (ASTM E84) at a maximum thickness of 0.5 inches and a maximum density of 5.0 pounds per cubic foot and 6.0 pounds per cubic foot, respectively, in accordance with Section 2603.3 of the 2018, 2015, 2012 and 2009 IBC and Section R316.3 of the 2018, 2015, 2012 and 2009 IRC.

5.3 The roof insulation panels have thermal resistance values (*R*-value) as shown in Table 1, when tested at a mean temperature of 75°F.

6. INSTALLATION

6.1 General:

The products described in this report must be installed in accordance with the applicable code, this Report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at all times on the jobsite during installation.

6.2 Roof Insulation:

The products described in this report must be installed in accordance with Section 1508.2 of the 2018, 2015, 2012 and 2009 IBC or Section R906.2 of the 2018, 2015, 2012 and 2009 IRC.

The products described in this report may be installed on steel decks without a thermal barrier in accordance with Section 2603.4.1.5 of the 2018 and 2015 IBC when installed as part of a UL Classified Class A, B or C roof covering system as described in 6.2.1, and as part of a UL Classified Roof Deck Construction described in 6.2.2. Or, the products described in this report may be installed on steel decks without a thermal barrier in accordance with Section 2603.4.1.5 of the 2012 and 2009 IBC when installed as part of a Class A, B or C roof-covering assembly described in UL Evaluation Report [ER1306-01](#) or [ER1306-02](#).

6.2.1 Class A, B or C Roof covering Systems:

Refer to UL's On-Line Certification Directory for UL Classified Roofing Systems ([TGfU](#)) incorporating EnergyGuard™ Polyiso Insulation, EnergyGuard™ Ultra Polyiso Insulation, EnergyGuard™ HD Polyiso Insulation, and EnergyGuard™ HD Plus Polyiso Insulation roof insulation panels under UL File R1306.

6.2.2 Roof Deck Constructions:

The products described in this report have been tested as part of a UL Classified Roof Deck Construction in accordance with ANSI/UL 1256. Refer to the UL Roof Deck Construction Materials Certification information for File R1306, Foamed Plastic ([TJBX](#)) and UL Roof Deck Construction Nos. [120](#) and [123](#) for applicable coverage and details of the Roof Deck Constructions covered by this report. The fire classified constructions are only applicable when the assembly is constructed in accordance with the published constructions.

7. CONDITIONS OF USE

The insulations covered under this Report comply with, or are suitable alternatives to, what is specified in those codes listed in Section 2 of this Report, subject to the following conditions:

- 7.1 Materials and methods of installation shall comply with this Report and the manufacturer's published installation instructions. In the event of a conflict between the installation instructions and this Report, this Report governs.
- 7.2 GAF EnergyGuard™ Polyiso Insulation, EnergyGuard™ Ultra Polyiso Insulation, EnergyGuard™ HD Polyiso Insulation, and EnergyGuard™ HD Plus Polyiso Insulation shall be installed by professional roofing contractors trained and approved by the manufacturer.
- 7.3 The insulation boards must be separated from the interior of the building by an approved thermal barrier in accordance with Section 2603.4.1.5 of the IBC or Section R316.5.2 of the IRC, as applicable, except as described in Section 6.2 of this Report.
- 7.4 For a listing of applicable UL Certifications for the products described in this report, see the UL Online Certification Directory for the following categories:
 - See UL Online Certification Directory for Roofing Systems in accordance with ANSI/UL 790 ([TGfU](#)).
 - See UL Online Certification Directory for products evaluated as part of roof deck constructions in accordance with ANSI/UL 1256, Foamed Plastic ([TJBX](#)):
 - Roof Deck Construction No. [120](#)
 - Roof Deck Construction No. [123](#)
- 7.5 Above-deck thermal insulation board shall comply with the applicable standards listed in Section 1508.2 of 2018, 2015, 2012 and 2009 IBC or Section R906.2 of 2018, 2015, 2012 and 2009 IRC.
- 7.6 The foamed plastic insulations covered under this Report are produced under the UL LLC Classification and Follow-Up Service Program, which includes audits in accordance with quality elements of ICC-ES Acceptance Criteria for Quality Documentation, AC10.

8. SUPPORTING EVIDENCE

- 8.1 Data in accordance with ICC-ES Acceptance Criteria for Foam Plastic Insulation, AC12.
- 8.2 Manufacturer's descriptive product literature, including installation instructions.
- 8.3 UL Classification reports in accordance with ANSI/UL 790 and ANSI/UL 1256. See UL Product Certification Categories, (TGFU) and (TJBX), respectively.
- 8.4 Data in accordance with ANSI/UL 723, ASTM E108, ASTM C1289, FM4470 and FM4450.
- 8.5 Documentation of quality system elements in accordance with ICC-ES Acceptance Criteria for Quality Documentation, AC10.

9. IDENTIFICATION

The insulations covered under this Report are identified by a marking bearing the Report holder's name (GAF), the plant identification, the product designation, the UL Classification Mark, and the Evaluation Report number UL ER1306-03. The validity of the Evaluation Report is contingent upon this identification appearing on the product or UL Classification Mark certificate.

10. USE OF UL EVALUATION REPORT

- 10.1 The approval of building products, materials or systems is under the responsibility of the applicable authorities having jurisdiction.
- 10.2 UL Evaluation Reports shall not be used in any manner that implies an endorsement of the product, material or system by UL.
- 10.3 The current status of this report, as well as a complete directory of UL Evaluation Reports may be found at UL.com via our On-Line Certifications Directory:

www.UL.com/database

Table 1 – Thermal Resistance Values (R-Values)

Thickness, Inches	R-Value (°F.ft ² .h/Btu at 75°F Mean Temperature)	
	EnergyGuard™ Polyiso Insulation and EnergyGuard™ Ultra Polyiso Insulation	EnergyGuard™ HD Polyiso Insulation and EnergyGuard HD Plus Polyiso Insulation
0.5	-	2.3
1.0	5.7	-
2.0	11.4	-
4.0	23.1	-

(For SI: 1 lb/ft³ = 16.018 kg/m³, 1°F-ft²-hr/BTU = 0.176 K-m²/W.

© 2018 UL LLC

This UL Evaluation Report is not an endorsement or recommendation for use of the subject and/or product described herein. This Report is not the UL Listing or UL Classification Report that covers the subject product. The subject product's UL Listing or UL Classification is covered under a separate UL Report. UL disclaims all representations and warranties whether express or implied, with respect to this Report and the subject or product described herein. Contents of this Report may be based on data that has been generated by laboratories other than UL that are accredited as complying with ISO/IEC Standard 17025 by the International Accreditation Service (IAS) or by any other accreditation body that is a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA). The scope of the laboratory's accreditation shall include the specific type of testing covered in the test Report. As the accuracy of any non-UL data is the responsibility of the accredited laboratory, UL does not accept responsibility for the accuracy of this data