EVALUATION SUBJECT:
RADIANT SHIELD AND GFP (GAS-FILLED PANEL) INSULATION AKA ATTIC ARMOR®

REPORT HOLDER:
Fi-Foil Company, Inc.
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CSI Division: 07 00 00 – THERMAL AND MOISTURE PROTECTION
CSI Section: 07 21 00 – Thermal Insulation

1.0 SCOPE OF EVALUATION

1.1 Compliance to the following codes & regulations:
- 2009 and 2006 International Building Code® (IBC)
- 2009 and 2006 International Residential Code® (IRC)
- 2009 and 2006 International Energy Conservation Code® (IECC)

1.2 Evaluated in accordance with:
- ICC-ES AC 02 – Acceptance Criteria for Reflective Insulation, approved June 2011, editorially revised April 2014
- ICC-ES AC 220 – Acceptance Criteria for Sheet Radiant Barriers, approved September 2010, editorially revised September 2013 *

**Applies only to Radiant Shield*

1.3 Properties assessed:
- Thermal Resistance
- Surface Burning Characteristics
- Permeability

2.0 PRODUCT USE

Radiant Shield, GFP are used as reflective insulation intended for use on walls and roofs in buildings of Types I, II, III, IV, and V construction, and comply with the following code sections: Section 719 of the 2009 and 2006 IBC, Section N1101 of the 2009 and 2006 IRC, and Sections C303 and R303 of the 2009 and 2006 IECC.

3.0 PRODUCT DESCRIPTION

3.1 Radiant Shield Radiant Shield is intended for use in walls, floors, and roofs.

Radiant Shield is a sheet radiant barrier comprised of two outer layers of aluminum foil laminated to a layer of woven polyethylene. Radiant Shield is available in both non-perforated and perforated versions and is available in 25.5 inches (648 mm), 48 inches (1,219 mm) and 51 inches (1,295 mm) wide rolls containing 500 square feet (46.5 m^2).

3.1.1 Radiant Shield has a flame-spread index of not more than 25 and a smoke-developed index of not more than 450 when tested in accordance with ASTM E84.

3.1.2 Radiant Shield non-perforated version has a water vapor permeance in accordance with Procedure A of ASTM E96 dry cup method at 73.4° F (23° C) of less than 1.0 perm (grains/ft^2·h·inch Hg). The material is a vapor retarder in accordance with ASTM C1313.

3.1.3 Radiant Shield perforated version has a water vapor permeance in accordance with Procedure B of ASTM E96 wet cup method at 73.4 ° F (23°C) of greater than or equal to 5.0 perms (grains/ft^2·h·inch Hg). The material is vapor transmitting in accordance with ASTM C1313.

3.1.4 Radiant Shield has a thermal emittance of less than 0.10 when measured in accordance with ASTM C1371.

3.2 GFP (Gas Filled Panel) Insulation aka Attic Armor ®

GFP (Gas Filled Panel) Insulation, aka Attic Armor ®, is intended for use in walls, floors, and roofs. GFP consists of two external aluminum foil / polymer laminates and five internal formulated, aluminum metalized films. When expanded with air or inert gases, the internal, low-emittance aluminum layers form a honeycomb structure. GFP specifically incorporates three methods of heat transfer: radiation, conduction, and convection. Standard panels of GFP are available in 16 inches (406 mm), 24 inch (610 mm) widths, 48 inch (1,219 mm) long; and a 24 inch (610 mm) x 24 inch (610 mm) panel of 48 inches (1,219 mm).

3.2.1 GFP (Gas Filled Panel) Insulation aka Attic Armor ® has a flame-spread index not more than 25 and a smoke-developed index of not more than 450 when tested in accordance with ASTM E84.

3.2.2 GFP (Gas Filled Panel) Insulation aka Attic Armor ® has a water vapor permeance of less than 1.0 perm (grains/ft^2·h·inch Hg) in accordance with Procedure A of ASTM E96 dry cup method at 70.9°F (21.6°C) and 40.6% relative humidity.

3.2.3 GFP (Gas Filled Panel) Barrier has a thermal emittance of less than 0.10 when measured in accordance with ASTM C1371.

3.2.4 GFP (Gas Filled Panel) Insulation aka Attic Armor has a critical radiant flux of less than 0.12 W/cm^2 when measured in accordance with ASTM E970.

4.0 DESIGN AND INSTALLATION

Radiant Shield, GFP shall be installed in accordance with the manufacturer's published installation instructions, this report and the applicable code. Where conflicts occur, the more restrictive shall govern.

5.0 LIMITATIONS

Radiant Shield, GFP described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, with the following conditions:

5.1 Installation shall comply with this report; the manufacturer's published installation instructions and the applicable code. In the event of a conflict between this report and the installation instructions, the more restrictive assumes governance.

5.2 Radiant Shield, GFP are manufactured in Auburndale, FL, under a quality control program with inspections by IAPMO R&T.

6.0 SUBSTANTIATING DATA

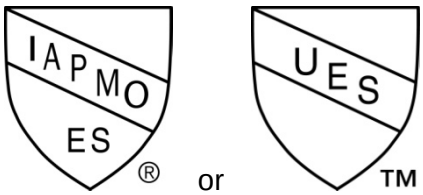
Data and test reports submitted for this report are from laboratories recognized as being in compliance with ISO/IEC 17025 and the following:

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Reflective Insulation (AC 02), approved June 2011, editorially revised April 2014.

6.2 Data on Radiant Shield only in accordance with the ICC-ES Acceptance Criteria for Sheet Radiant Barriers (AC 220), approved September 2010, editorially revised September 2013.

7.0 IDENTIFICATION

Radiant Shield and GFP are marked with one of the IAPMO Uniform ES Marks of Conformity and the Evaluation Report Number (ER-266).



IAPMO ER #266

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FLORIDA SUPPLEMENT

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1.0 SCOPE OF EVALUATION

- 2010 and 2007 Florida Building Code® (FBC)
- 2010 and 2007 Florida Residential Code® (FRC)
- 2010 and 2007 Florida Energy Conservation Code® (FECC)

1.2 Evaluated in accordance with:

- ICC-ES AC 02 – Acceptance Criteria for Reflective Insulation, approved June 2011, editorially revised April 2014

- ICC-ES AC 220 – Acceptance Criteria for Sheet Radiant Barriers, approved September 2010, editorially revised September 2013 *

  **Applies only to Radiant Shield*

1.3 Properties assessed:

- Thermal Resistance
- Surface Burning Characteristics
- Permeability

2.0 APPLICABILITY

2.1 FBC: All provisions of ER0266 referencing the 2009 and 2006 IBC shall apply to use under the 2010 and 2007 FBC respectively.

2.2 FRC: All provisions of ER0266 referencing the 2009 and 2006 IRC shall apply to use under the 2010 and 2007 FRC respectively.

2.3 FECC: All provisions of ER0266 referencing the 2009 and 2006 IECC shall apply to use under the 2010 and 2007 FECC respectively.

3.0 ADDITIONAL REQUIREMENTS

Evaluation to the high-velocity hurricane zone provisions in Section 1409 of the FBC, Building and Chapter 44 of the FBC, Residential is outside the scope of this report.

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).

4.0 SUBSTANTIATING DATA

Data and test reports submitted for this report are from laboratories recognized as being in compliance with ISO/IEC 17025 and the following:

4.1 Data in accordance with the ICC-ES Acceptance Criteria for Reflective Insulation (AC 02), approved June 2011, editorially revised April 2014.

4.2 Data on Radiant Shield only in accordance with the ICC-ES Acceptance Criteria for Sheet Radiant Barriers (AC 220), approved September 2010, editorially revised September 2013.