



**FI-FOIL COMPANY, INC.**  
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## AA-2 VAPOR SHIELD (PERFORATED VERSION)

### CSI Section:

07 21 00 – Thermal Insulation

### 1.0 RECOGNITION

AA-2 Vapor Shield (Perforated Version) recognized in this report has been evaluated for use as reflective insulation in concealed wall cavities in buildings of Type III, IV, or V construction in the IBC, and any construction type allowed by the IRC. The thermal resistance, surface burning characteristics, and permeability properties of the AA-2 Vapor Shield (Perforated Version) comply with the intent of the provisions of the following codes and regulations:

- 2018, 2015, 2012, 2009, and 2006 International Building Code (IBC®)
- 2018, 2015, 2012, 2009, and 2006 International Residential Code (IRC®)
- 2018, 2015, 2012, 2009, and 2006 International Energy Conservation Code (IECC®)
- 2020 Florida Building Code, Building (FBC, Building) – Attached Supplement
- 2020 Florida Building Code, Residential (FBC, Residential) – Attached Supplement
- 2020 Florida Building Code, Energy Conservation (FBC, Energy Conservation) – Attached Supplement

### 2.0 LIMITATIONS

Use of the AA-2 Vapor Shield (Perforated Version) recognized in this report is subject to the following limitations:

**2.1** AA-2 Vapor Shield (Perforated Version) shall be installed in accordance with the applicable code, the manufacturer's published installation instructions, and this report. Where conflicts occur, the more restrictive governs.

**2.2** AA-2 Vapor Shield (Perforated Version) installed in concealed wall cavities within buildings allowed by the IRC or in buildings of Type III, IV, or V construction as defined by the IBC, shall be installed behind and in substantial contact with the unexposed surface of the wall as per Sections 720.2.1 of the 2018, 2015 and 2012 IBC, 719.2.1 of the 2009 IBC, 2006 IBC, and R302.10.1 of the IRC.

**2.3** Use of the AA-2 Vapor Shield (Perforated Version) in air ducts is beyond the scope of this report.

**2.4** Recognition of AA-2 Vapor Shield (Perforated Version) is limited to installation only within a ¾-inch thick (19.1 mm) concealed wall cavity.

**2.5** The structural design and detailing of the wall assembly for the AA-2 Vapor Shield (Perforated Version) described in Section 3.3.1.1 of this report shall be performed by a registered design professional when required by the applicable codes.

**2.6** AA-2 Vapor Shield (Perforated Version) recognized in this report is produced in Auburndale, Florida.

### 3.0 PRODUCT USE

**3.1 General:** AA-2 Vapor Shield (Perforated Version) is used as reflective insulation in concealed wall cavities in buildings of Type III, IV, or V construction under the IBC, and any construction type allowed by the IRC. AA-2 Vapor Shield (Perforated Version) complies with the following: Section 720 of the 2018, 2015 and 2012 IBC; Section 719 of the 2009 and 2006 IBC; Section N1101 of the 2018, 2015, 2012, 2009, and 2006 IRC; and Sections C303 and R303 of the 2018, 2015, 2012, 2009 or 2006 IECC.

**3.2 Installation:** Installation instructions for AA-2 Vapor Shield (Perforated Version) are supplied with the product and/or are available on the Fi-Foil Company, Inc. website [Installation Instructions for AA2-Vapor-Shield](#).

### 3.3 Design:

**3.3.1** The AA-2 Vapor Shield (Perforated Version) R-value shown in Section 3.3.1.1 of this report is for the added insulation which includes the adjacent reflective air spaces. The R-values of structural building materials such as framing members, concrete blocks, or gypsum boards are not included.

**3.3.1.1** AA-2 Vapor Shield (Perforated Version) is installed in a ¾-inch thick (19.1 mm) wall cavity formed by nominal 1-inch (25.4 mm) by 2-inch (50.8 mm) wood furring strips spaced either at 16 inches or 24 inches (406 and 610 mm) on center. The AA-2 Vapor Shield (Perforated Version) was tested with the kraft paper side stapled to the furring strips, facing the interior (hot side) and the aluminum foil side facing the exterior (cold side). The reflective insulation in this configuration tested in accordance with ASTM C1363 and ASTM C1224 with heat flow in the horizontal direction yielded an R-value of 4.1 hr ft<sup>2</sup> °F/Btu, at a mean temperature of 75°F (24°C). Refer to Figure 1 for additional details.



3.3.2 AA-2 Vapor Shield (Perforated Version) has a minimum water vapor permeance of 5.0 perms (grains/ft<sup>2</sup>-h-inch Hg) when tested in accordance with ASTM E96 desiccant method at 73.4° F (23°C) and complies as a vapor-permeable membrane in accordance with the IBC and IRC.

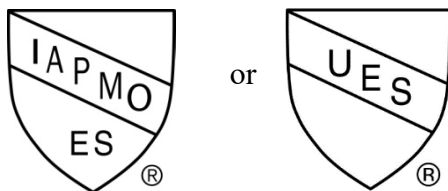
3.3.3 AA-2 Vapor Shield (Perforated Version) has a thermal emittance no greater than 0.10 when measured in accordance with ASTM C1371 and complies as a low-emittance surface in accordance with the IBC.

### 4.0 PRODUCT DESCRIPTION

AA-2 Vapor Shield (Perforated Version) is a multi-layer reflective insulation recognized for use in a ¾-inch thick (19.1 mm) concealed wall cavity. The insulation is available in either rolls of 16 inches (406 mm) or 24 inches (610 mm) wide containing 500 square feet (46.5 m<sup>2</sup>) each. The inner layer is aluminum foil with a minimum 0.00035-inch (0.00889 mm) thickness and the outer layer is natural kraft paper of 35 pounds (15.9 kg) with internal expanders. The internal expanders separate the kraft paper from the foil creating approximately two ⅜ -inch (9.5 mm) reflective air space between the layers.

### 5.0 IDENTIFICATION

AA-2 Vapor Shield (Perforated Version) is packaged with a label bearing the manufacturer's name (Fi-Foil Company, Inc.), the thermal resistance (R-value), and the Evaluation Report Number (ER-291) to identify the product recognized in this report. Either of the IAPMO Uniform ES Marks of Conformity may also be used as shown below:



IAPMO UES ER-291

### 6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Reflective Insulation (AC02), approved June 2011, editorially revised May 2019.

6.2 Test reports for emittance, humidity resistance, adhesive performance, and fungi resistance testing were submitted in accordance with ASTM C1224. Thermal resistance test reports were submitted in accordance with ASTM C1363 and Section 9.7 of ASTM C1224.

6.3 Test reports are from laboratories in compliance with ISO/IEC 17025.

### 7.0 STATEMENT OF RECOGNITION:

This report describes the results of research completed by the IAPMO Uniform Evaluation Service on AA-2 Vapor Shield (Perforated Version) to assess its conformance to the codes listed in Section 1.0 and serves as documentation of the product certification. The products are manufactured at the location noted in Section 2.6 of this report under a quality control program with periodic inspections under the supervision of IAPMO UES.

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)



**FIGURE 1 - AA-2 Vapor Shield (Perforated Version)**



## FLORIDA SUPPLEMENT

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### AA-2 VAPOR SHIELD (PERFORATED VERSION)

**CSI Section:**

**07 21 00 – Thermal Insulation**

#### 1.0 RECOGNITION

AA-2 Vapor Shield (Perforated Version) recognized in ER-291 and this supplemental report has been evaluated for use as reflective insulation intended for use in concealed wall cavities. The thermal resistance, surface burning characteristics, and permeability properties of the AA-2 Vapor Shield (Perforated Version) comply with the intent of the provisions of the following codes and regulations:

- 2020 Florida Building Code, Building (FBC, Building)
- 2020 Florida Building Code, Residential (FBC, Residential)
- 2020 Florida Building Code, Energy Conservation (FBC, Energy Conservation)

#### 2.0 LIMITATIONS

Use of the AA-2 Vapor Shield (Perforated Version) recognized in this supplement is subject to the following limitations:

**2.1 FBC, Building:** All provisions in ER-291 referencing the 2018 IBC shall apply to use under the 2020 FBC, Building. In addition, compliance with Section 720 of the FBC, Building, or Section R302 of the FBC, Residential, and C303 or R303 of the FBC, Energy Conservation, shall be observed as applicable.

**2.2 FBC, Residential:** All provisions in ER-291 referencing the 2018 IRC shall apply to use under the 2020 FBC, Residential respectively, along with Section 720 of the FBC, Building, or Section R302 of the FBC, Residential, and C303 or R303 of the FBC, Energy Conservation, as applicable.

**2.3 FBC, Energy Conservation:** All provisions in ER-291 referencing the 2018 IECC shall apply to use under the 2020 FBC, Energy Conservation respectively, along with Section 720 of the FBC, Building, or Section R302 of the FBC, Residential, and C303 or R303 of the FBC, Energy Conservation, as applicable.

**2.4** The reflective insulation may be used in high-velocity hurricane zones (HVHZ) provided the provisions in Chapter 14 of the FBC, Building or Chapter 44 of the FBC, Residential are observed.

**2.5** Verification shall be provided that a quality assurance agency audits the manufacturer's 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).

**2.6** This supplement expires concurrently with ER-291.

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)