

## **DS 2025-052 – Richard Porter of CfiFOAM, Inc.**

**Issue:** Petitioner is seeking a declaratory statement to confirm the requirements of the 8<sup>th</sup> Edition (2023) Florida Building Code, Energy Conservation for testing R-value for foam-in-place insulation products.

### **Background:**

CfiFOAM, Inc. is a manufacturer of foam-in-place insulation products used to integrally-insulate the hollow cores of concrete block walls for both commercial and residential buildings.

Evaluation standards – 16 CFR Part 460, ASTM C518, UL 723, and ASTM E84

### **8<sup>th</sup> Edition (2023) Florida Building Code, Energy Conservation/Commercial Provisions**

#### **CHAPTER 2 [CE] DEFINITIONS**

**LABELED.** Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

**LISTED.** Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

**C303.1.1 Building thermal envelope insulation.** An R-value identification mark shall be applied by the manufacturer to each piece of building thermal envelope insulation 12 inches (305 mm) or greater in width. Alternately, the insulation installers shall provide a certification listing the type, manufacturer and R-value of insulation installed in each element of the building thermal envelope. For blown or sprayed insulation (fiberglass and cellulose), the initial installed thickness, settled thickness, settled R-value, installed density, coverage area and number of bags installed shall be listed on the certification. For sprayed polyurethane foam (SPF) insulation, the installed thickness of the areas covered and R-value of installed thickness shall be listed on the certification. For insulated siding, the R-value shall be labeled on the product's package and shall be listed on the certification. The insulation installer shall sign, date and post the certification in a conspicuous location on the job site.

**C303.1.1.1 Blown or sprayed roof/ceiling insulation.** The thickness of blown-in or sprayed roof/ceiling insulation (fiberglass or cellulose) shall be written in inches (mm) on

markers that are installed at least one for every 300 square feet (28 m<sup>2</sup>) throughout the attic space. The markers shall be affixed to the trusses or joists and marked with the minimum initial installed thickness with numbers not less than 1 inch (25 mm) in height. Each marker shall face the attic access opening. Spray polyurethane foam thickness and installed R-value shall be listed on certification provided by the insulation installer.

**C303.1.2 Insulation mark installation.** Insulating materials shall be installed such that the manufacturer's R-value mark is readily observable upon inspection.

**C303.1.4 Insulation product rating.** The thermal resistance (*R*-value) of insulation shall be determined in accordance with the U.S. Federal Trade Commission *R*-value rule (CFR Title 16, Part 460) in units of h • ft<sup>2</sup> • °F/Btu at a mean temperature of 75°F (24°C).

**C304.2 Testing of building materials thermal properties.**

**C304.2.1 Single materials.** If building material R-values or thermal conductivities are determined by testing, one of the following test procedures shall be used:

- a. ASTM C177
- b. ASTM C1363
- c. ASTM C518

For concrete, the oven-dried conductivity shall be multiplied by 1.2 to reflect the moisture content as typically installed.

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## **2023 Florida Building Code, Energy Conservation/Residential Provisions**

### **SECTION R303 MATERIALS, SYSTEMS AND EQUIPMENT**

**R303.1 Identification.** Materials, systems and equipment shall be identified in a manner that will allow a determination of compliance with the applicable provisions of this code.

**R303.1.1 Building thermal envelope insulation.**

**R303.1.1.1 Insulation product rating.** The thermal resistance (*R*-value) of insulation shall be determined in accordance with the U.S. Federal Trade Commission *R*-value rule (CFR Title 16, Part 460) in units of h • ft<sup>2</sup> • °F/Btu at a mean temperature of 75°F (24°C).

**R303.1.1.1.1** R-values referenced in Chapter 4 of this code refer to the R-values of the added insulation only. The R-values of structural building materials such as framing members, concrete blocks or gypsum board shall not be included.

**Exception:** R402.1.5 Total UA Alternative.

**R303.1.1.2 Building thermal envelope insulation markers.** An R-value identification mark shall be applied by the manufacturer to each piece of building thermal envelope insulation 12 inches (305 mm) or greater in width. Alternately, the insulation installers shall provide a

certification listing the type, manufacturer and R-value of insulation installed in each of the building thermal envelope. For blown or sprayed insulation (fiberglass and cellulose), the initial installed thickness, settled thickness, settled R-value, installed density, coverage area and number of bags installed shall be listed on the certification. For sprayed polyurethane foam (SPF) insulation, the installed thickness of the areas covered and R-value of installed thickness shall be listed on the certification. For insulated siding, the R-value shall be labeled on the product's package and shall be listed on the certification. The insulation installer shall sign, date and post the certification in a conspicuous location on the job site.

## **Federal Trade Commission**

### **16 CFR Part 460**

#### **Labeling and Advertising of Home Insulation: Trade Regulation Rule**

AGENCY: Federal Trade Commission.

**Date: January 1, 2025**

**Authority: 15 U.S.C. 41 et seq. (38 Stat. 717, as amended).**

**Source: 44 FR 50242, Aug. 27, 1979, unless otherwise noted.**

**Federal Register References: 44 FR 50242, 46 FR 22179, 46 FR 22180, 48 FR 31192**

**United States Code Reference: 15 U.S.C. 41et seq.**

**§ 460.5** R-value tests. R-value measures resistance to heat flow. R-values given in labels, fact sheets, ads, or other promotional materials must be based on tests done under the methods listed in paragraphs (a) through (d) of this section.

(a) All types of insulation except reflective insulation must be tested with ASTM C177–13, “Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus;” ASTM C518–17, “Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus;” ASTM C1363–11, “Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus” or ASTM C1114–06, “Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Thin-Heater Apparatus.” The tests must be done at a mean temperature of 75 degrees Fahrenheit and with a temperature difference of 50 degrees Fahrenheit plus or minus 10 degrees Fahrenheit. The tests must be done on the insulation material alone (excluding any airspace). R-values (“thermal resistance”) based upon heat flux measurements according to ASTM C177–13 or ASTM C518–17 must be reported only in accordance with the requirements and restrictions of ASTM C1045–07, “Standard Practice for Calculating Thermal Transmission Properties Under Steady-State Conditions.”

**§ 460.6 “Representative thickness” testing.** All tests except reflective insulation tests must be done at a representative thickness for every thickness shown in a label, fact sheet, ad, or other promotional material. “Representative thickness” means a thickness at which the R-value per unit will vary no more than plus or minus 2% with increases in thickness. However, if the thickness shown in your label, fact sheet, ad, or promotional material is less than the representative thickness, then you can test the insulation at the thickness shown.

[44 FR 50242, Aug. 27, 1979, as amended at 84 FR 20789, May 13, 2019]

**§ 460.13 Fact sheets.** If you are a manufacturer, you must give retailers and installers fact sheets for the insulation products you sell to them. Each sheet must contain what is listed here. You can add any disclosures that are required by federal laws, regulations, rules, or orders. You can add any disclosures that are required by State or local laws, rules, and orders, unless they are inconsistent with the provisions of this regulation. Do not add anything else. Each fact sheet must contain these items:

(a) The name and address of the manufacturer. It can also include a logo or other symbol that the manufacturer uses.

(b) A heading: “This is \_\_\_\_\_ insulation.” Fill in the blank with the type and form of your insulation.

(c) The heading must be followed by a chart:

(1) If § 460.12(b) requires a chart for your product's label, you must use that chart. For foamed-in-place insulations, you must show the R-value of your product at 3 1/2 inches. You can also show R-values at other thicknesses.

**§ 460.22 R-value claims for non-insulation products.** If you make an R-value claim for a product, other than a fenestration related product, that is not home insulation and is marketed in whole or in part to reduce residential energy use by slowing heat flow, you must test the product pursuant to § 460.5 using a test or tests in that section appropriate to the product. Any advertised R-value claims must fairly reflect the results of those tests. For the purposes of this section, fenestration-related products include windows, doors, and skylights as well as attachments for those products.

**§ 460.12 Labels.** If you are a manufacturer, you must label all packages of your insulation. The labels must contain:

(a) The type of insulation.

(b) A chart showing these items:

(1) For batts and blankets of any type: the R-value, length, width, thickness, and square feet of insulation in the package.

(2) For all loose-fill insulation: the minimum settled thickness, initial installed thickness, maximum net coverage area, number of bags per 1,000 square feet, and minimum weight per square foot at R-values of 13, 19, 22, 30, 38, and 49. You must also give this information for any additional R-values you list on the chart. Labels for these products must state the minimum net weight of the insulation in the package. You must also provide information about the blowing machine and machine settings used to derive the initial installed thickness information.

(3) For boardstock: the R-value, length, width, and thickness of the boards in the package, and the square feet of insulation in the package.

(4) For reflective insulation: The number of sheets; the number and thickness of the air spaces; and the R-value provided by that system when the direction of heat flow is up, down, and horizontal. You can show the R-value for only one direction of heat flow if you clearly and conspicuously state that the insulation can only be used in that application.

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#### **§ 460.18 Insulation ads.**

(a) If your ad gives an R-value, you must give the type of insulation and the thickness needed to get that R-value. Also, add this statement explaining R-values: “The higher the R-value, the greater the insulating power. Ask your seller for the fact sheet on R-values.”

(b) If your ad gives a price, you must give the type of insulation, the R-value at a specific thickness, the statement explaining R-values in paragraph (a) of this section, and the coverage area for that thickness. If you give the price per square foot, you do not have to give the coverage area.

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#### **Staff Analysis:**

##### **Question #1:**

Is it a requirement that our company test each of its products in accordance with the requirements outlined in 16 CFR 460 (FTC Rule 460) which requires testing to ASTM C 177 – 2013, or newer; ASTM C 518 – 2017, or newer; or ASTM C 1363 – 2011, or newer?

##### **Answer:**

Pursuant to sections C303.1.4 and R303.1.1.1 of the Florida Building Code, Energy Conservation, 8<sup>th</sup> Edition (2023), the thermal resistance (R-value) of the product in

question (“foam-in-place insulation”) must be determined in accordance with the U.S. Federal Trade Commission R-value rule (CFR Title 16, part 460.)

**Question #2:**

Is it a requirement that testing cannot be based on older outdated versions of these standards?

**Answer:**

This is a question of general applicability, not tied to the petitioner’s particular circumstances, and thus cannot be answered in this declaratory statement.

**Question #3:**

Is it a requirement that tests reflect results obtained at a 75-degree Fahrenheit mean test temperature?

**Answer:**

The answer to the Petitioner’s question is yes. Pursuant to sections C303.1.4 and R303.1.1.1 of the Florida Building Code, Energy Conservation, 8<sup>th</sup> Edition (2023), the thermal resistance (R-value) of the product in question must be determined in accordance with the U.S. Federal Trade Commission R-value rule (CFR Title 16, part 460) in units of  $h \cdot ft^2 \cdot ^\circ F/Btu$  at a mean temperature of 75°F (24°C).

**Question #4:**

Is it a requirement that the testing must be performed on a range of sample thickness, including 3 ½ inches, not just a single, 1” thick sample?

**Answer:**

Pursuant to section 460.13(c)(1) of 16 CFR 460, foamed-in-place insulation must show the R-value at 3 ½ inches, and may also show R-values at other thicknesses.

**Question #5:**

Is it a requirement that each product we supply must be supported by a current third-party certification or evaluation report from a nationally accredited agency that certifies the R-value tests are compliant with 16 CFR 460 (FTC Rule 460), and that the Rule’s requirements for product labels, fact sheets and other promotional materials are compliant as well?

**Answer:**

Pursuant to section R303.1.1.2, section C303.1.1 and the definition of “listed” of the Florida Building Code, Energy Conservation, 8<sup>th</sup> Edition (2023), the product in question

must be supported by certification listing and the installed thickness of the area covered, and the R-value of the installed thickness must be listed on the certification. The certification listing must be from an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed materials and whose listing states that the material/product meets identified standards or has been tested and found suitable for a specified purpose.

**Question #6:**

Is it a requirement that without a current third-party certification/evaluation report supported by current R-value test, the product is deemed not to comply with the Florida Building Code, Energy Conservation, and therefore, will not be approved to insulate either residential or commercial buildings in Florida?

**Answer:** See answer to question 2.

**Question #7:**

Is it a requirement that the testing and independent certification/ evaluation requirements apply to all building insulation products and manufacturers including:

- a. Foamed-in-place insulation that is spray-applied to the surface of concrete masonry walls or injected in the core cells of concrete masonry walls,
- b. Molded foam plastic insulation inserts or loose fill insulation installed on-site in the core cells of concrete masonry walls.
- c. Reflective foil insulation
- d. And pre-insulated concrete masonry wall systems that are marketed either in part or in whole on the basis of whole -wall thermal performance (R-value)?

**Answer:**

This is a question of general applicability, not tied to the petitioner's particular circumstances, and thus cannot be answered in this declaratory statement.