EPS Industry Alliance

1298 Cronson Boulevard
Suite 201
Crofton, MD 21114

phone 800.607.3772
fax 410.451.8343

info@epsindustry.org
www.epsindustry.org

Innovative solutions for a sustainable future

September 6, 2016

Donald S. Clark, Secretary
Federal Trade Commission Constitution Center
400 7th Street SW, 5th Floor
Suite 5610 Annex B
Washington, DC 20024

Re: 16 CFR part 460 R-value Rule Review—File No. R811001
Labeling and Advertising of Home Insulation – Advance Notice of Proposed Rulemaking

Dear Mr. Clark:

Subsequent to submission of comments from the EPS Industry Alliance on June 6, 2016, the Department of Energy Office of Energy Efficiency and Renewable Energy issued a Notice of Proposed Rulemaking specifically addressing amendments to the test procedures for walk-in coolers and freezers (10 CFR Parts 429 and 431, Federal Register, Volume 81, No.159, P 54926, August 17, 2016). The test procedures under consideration for amendment by the DOE include procedures for assessing the R-value of the same insulation materials subject to the FTC R-value Rule (hereinafter the Rule).

Currently, DOE regulations 10 CFR Parts 429 and 431 do not address the loss of R-value over time and do not require, as the FTC R-value Rule does, that insulation be labeled to reflect the full effect of aging. The Department of Energy regulations prescribe that foam shall be tested in its final chemical form. For foam produced as a board stock, "final chemical form means after extrusion and ready for assembly into a panel." In contrast, the current R-value Rule requires that, "[f]or polyurethane, polyisocyanurate, and extruded polystyrene, the [R-value] tests must be done on samples that fully reflect the effect of aging on the product's R-value."

EPS-IA is planning to submit comments to DOE recommending they adopt test practices that recognize and appropriately account for long term thermal resistance (LTTR) for insulation materials that experience thermal drift over time. In the case of walk-in freezers and coolers, it is evident that a lack of regulatory guidelines to addresses LTTR will result in an abuse of R-value claims. This is demonstrated in two technical bulletins published by XPS foam insulation manufacturers (attached), interpreting the DOE test specifications as a license to publish a *"Fresh R-Value"* reflecting C518 test results for foam samples tested within hours of completing the manufacturing process. They also provide data for a "180-Day R-value" which is out of date in that it ignores the current recognized LTTR test method. The "Fresh" R-value indicates the R-value is 42% higher when tested 'fresh' off the extrusion line as compared to the results on samples tested after minimal aging.

The cited R-value claims may appear to comply with the DOE rule, they are nonetheless potentially misleading. Although the 'fresh' R-value could be interpreted to comply with 10CFR Parts 429 and 431 – having taken a very literal interpretation of the language "after extrusion and ready for assembly"— the published R-value of 8.1 per inch at 20°F and 7.2 per inch at 55°F, is not the thermal resistance that will be delivered to the consumer.

It is clear from the evidence submitted that such insulation materials have reduced R-value over time. As noted in EPS-IA's June 6th comments, and in further recognition of the need to account for LTTR, we appreciate the opportunity to provide additional evidence in support of EPS-IA's request that the R-value Rule elevate the ASTM C1303 test method to a legal requirement.

Sincerely,

EPS INDUSTRY ALLIANCE

Walter A. Reiter, III
EPS Industry Alliance
Deputy Director

Attachments

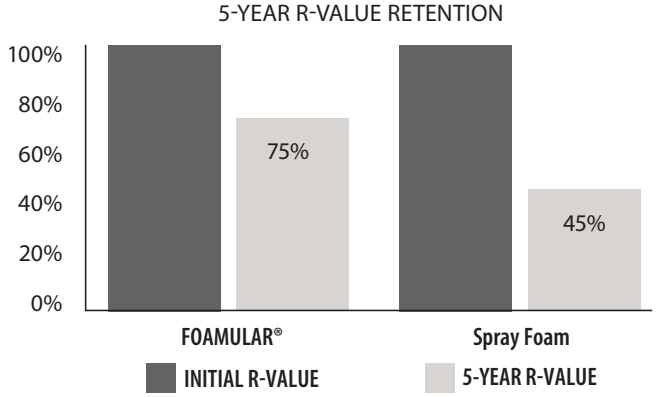
MEETS NEW FEDERAL REQUIREMENTS UP TO R-8 AT 1"

FOAMULAR®

Extruded Polystyrene Insulation for Walk-in Coolers and Freezers

MAINTAINS A HIGHER R-VALUE THAN SPRAY FOAM

Important news—Owens Corning FOAMULAR® extruded polystyrene meets the requirements of the Energy Independence and Security Act of 2007 and upcoming federal regulations. It achieves recommended R-values—both initially and over time—for virtually all walk-in cooler and freezer insulating needs including walls, ceilings and doors. Each product is manufactured to comply with ASTM C 578.



Testing conducted by the U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory.

OFFERS EXCEPTIONAL MOISTURE RESISTANCE, HELPS PREVENT MOLD GROWTH

FOAMULAR extruded polystyrene insulation is a closed-cell insulation made using the exclusive Owens Corning HYDROVAC® manufacturing process. *FOAMULAR* insulation's resistance to water absorption and water vapor transmission allows it to maintain a high thermal resistance through the life of the walk-in cooler or freezer unit. *FOAMULAR* is hydrophobic; the closed-cell structure and lack of voids in *FOAMULAR* increases the foam's resistance to moisture penetration compared to other types of insulation materials such as spray foam and EPS. This minimizes one of the items required for mold growth—water.

IMPROVES ENERGY EFFICIENCY

The ultimate objective of the insulation in walk-in coolers and freezers is to improve energy efficiency. Obtaining and maintaining the highest possible R-value at a given thickness is key to achieving the designed energy efficiency over the life of the unit. The *HYDROVAC* process ensures a consistent closed-cell structure that is free of voids, maintains R-value, and is hydrophobic—all keys in maintaining R-value for the 20+ years of operation.

MEETS CURRENT AND FUTURE ENERGY STANDARDS

According to the Energy Independence and Security Act of 2007: *"Each walk-in cooler or walk-in freezer manufactured on or after January 1, 2009, shall contain wall, ceiling, and door insulation of at least R-25 for coolers and R-32 for freezers, except…"*

In a typical "walk-in" manufacturing process, which utilizes 4" walls in freezers and coolers, Owens Corning *FOAMULAR* extruded polystyrene insulation meets the federal regulations noted above.

In addition to these standards, the Energy Independence and Security Act of 2007 also mandates energy consumption levels:

"No later than January 1, 2012, the Secretary shall publish performance-based standards for walk-in coolers and walk-in freezers that achieve the maximum improvement in energy that the Secretary determines is technologically feasible and economically justified."

Owens Corning's *HYDROVAC* manufacturing process ensures that *FOAMULAR* extruded polystyrene insulation maintains its peak R-value, resulting in energy savings which can help walk-in coolers and freezers meet future federal requirements.

FOAMULAR® INSULATION PHYSICAL PROPERTIES TABLE

	ASTM METHOD	
"FRESH" R-VALUE @ 20°F (°F x ft²x h/btu)	C 518	8.1 PER INCH
"FRESH" R-VALUE @ 55°F (°F x ft²x h/btu)	C 518	7.2 PER INCH
180-DAY R-VALUE @ 20°F (°F x ft²x h/btu)	C 518	5.7 PER INCH
180-DAY R-VALUE @ 55°F (°F x ft²x h/btu)	C 518	5.3 PER INCH
COMPRESSIVE STRENGTH, MIN. (LB/IN²)+	D 1621	25
WATER ABSORPTION, MAX. (% BY VOLUME)++	C 272	0.10
WATER VAPOR PERMEANCE, MAX. (PERM)*	E 96	1.1
WATER AFFINITY	–	HYDROPHOBIC
WATER CAPILLARITY	–	NONE

+ Value at yield or 10%, whichever occurs first.
++ Properties shown are representative values for 1" thick material.
* Actual water vapor permeance for 1" thick material, value decreases as thickness increases.

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www.owenscorning.com

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Raise the Standard for Reliable Performance Today ... and Tomorrow

STYROFOAM™ Brand Panel Core Extruded Polystyrene Insulation for Walk-in Coolers and Freezers

Panel photo courtesy of AmeriKooler, Inc.

Reliable Thermal Efficiency

STYROFOAM™ Brand Extruded Polystyrene Foam has provided energy-efficient performance in a wide range of applications for more than 60 years. From enormous walk-in coolers and freezers, refrigerated warehouses and other temperature-controlled environments to portable units, STYROFOAM™ Brand Extruded Polystyrene Foam provides reliable thermal efficiency to help keep perishables at just the right temperature.

The Energy Independence and Security Act (EISA) of 2007 and upcoming federal regulations have raised R-value requirements for insulations used in the manufacture of walk-in coolers and freezers. STYROFOAM™ Brand Panel Core Foam meets the new EISA standards and federal requirements for higher R-values.

Exceptional Moisture Resistance

STYROFOAM™ Brand Panel Core 20 Extruded Polystyrene Foam is a closed-cell high-performance core material manufactured to comply with ASTM C578. Dow's proprietary extrusion process enables precise control of parameters such as density, cell size and cell orientation, and also helps the insulation maintain a consistent R-value over time, for excellent long-term performance.

- Closed-cell structure prevents the foam from absorbing water, key to helping maintain insulating properties in high-humidity and high-moisture conditions
- Hydrophobic, void-free structure of the foam minimizes potential for mold growth
- Planed surfaces with tight dimensional tolerances enable highly uniform boards to ensure long-term panel integrity

In advance of U.S. and Canadian regulations under the Montreal Protocol, Dow has developed a new foaming agent technology for STYROFOAM™ Brand Insulation products that is non-ozone depleting. The next-generation foaming agent technology allows Dow to manufacture STYROFOAM™ Brand Insulation with a zero ozone-depletion potential and cut foaming agent greenhouse gas emissions in half from Dow's production of STYROFOAM™ Brand Insulation in North America. Both the existing and new formulations of STYROFOAM™ Brand Panel Core foams meet the new EISA insulation requirements.

Performance at the Core

According to the EISA of 2007, *"Each walk-in cooler or walk-in freezer manufactured on or after January 1, 2009, shall contain wall, ceiling and door insulation of at least R-25 for coolers and R-32 for freezers ..."*

Energy-efficient STYROFOAM™ Brand Panel Core 20 Foam meets the EISA requirements of a typical "walk-in" panel thickness of 4" for freezer and cooler walls.

Choosing the right core foam material requires looking beyond today's mandates and considering even more stringent requirements that may lie ahead. Select STYROFOAM™ Brand Panel Core Insulation to achieve long-term energy efficiency for your walk-in coolers and freezers.

TYPICAL PROPERTIES OF STYROFOAM™ BRAND PANEL CORE 20 FOAM

PROPERTY AND TEST METHOD	VALUE
"Fresh" R-Value(1), ASTM C518	
At 20°F, °F•ft²•h/Btu	8.1
At 55°F, °F•ft²•h/Btu	7.2
180-Day Aged R-Value(1), ASTM C518	
At 20°F, °F•ft²•h/Btu	5.7
At 55°F, °F•ft²•h/Btu	5.3
Compressive Strength(1), (2), ASTM D1621, psi, min.	20.0
Water Absorption(1), ASTM C272, % by volume, max.	0.3
Water Vapor Permeance(1), ASTM E96, perm, max.	1.5
Water Affinity	Hydrophobic
Water Capillarity	None

(1) Properties reported are for 1" STYROFOAM™ Brand products engineered to have the values shown here.
(2) Value at yield or 10 percent, whichever occurs first.

Learn more about STYROFOAM™ Brand Panel Core 20, 30 and 40 products at www.dowbuildingsolutions.com.

The Dow Chemical Company . Dow Building Solutions . 200 Larkin . Midland, MI 48674
Technical Information: 1-866-583-BLUE (2583) . **Sales Information:** 1-800-232-2436 . **www.dowbuildingsolutions.com**

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