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Federal Trade Commission
Office of the Secretary
Constitution Center
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Annex B
Washington, DC
20024

XPSA Comments to 16 CFR Part 460 – R-value Rule Review, File No. R811001

The Extruded Polystyrene Foam Association (XPSA), which is a trade association representing manufacturers of extruded polystyrene foam (XPS) insulation products and the industry’s raw material suppliers, welcomes the opportunity to provide these comments on Federal Trade Commission’s 16 CFR Part 460 - Labeling and Advertising of Home Insulation: Trade Regulation Rule.

XPSA regular members (The Dow Chemical Company, Owens Corning, and Kingspan Insulation) collectively manufacture more than 95 percent of all XPS destined for use in the North American market. XPSA promotes the benefits that accrue to society from appropriate use of XPS foam insulation applications.

XPSA provides these specific comments on certain sections of the proposed rulemaking:

Page 7 Section III A. General Regulatory Review Questions

1. *Need: Is there a continuing need for the Rule? Why or Why not?*

Yes, there is a continuing need for the Rule. It is still needed to regulate the industry and minimize deceptive thermal claims and to regulate emerging technologies.

The Rule protects consumers by setting an even playing field by which insulation manufacturers report and advertise the performance of their products. This allows comparative information and assurances to consumers in their insulation choice. It is so helpful in the residential market that it is also used voluntarily by most of the commercial market and is referenced in the International Energy Conservation Code, the national model energy code adopted by most states.

2. *Benefits and Costs to Consumers: What benefits, if any, has the Rule provided to consumers, and does the Rule impose any significant costs to consumers?*

It is imperative that we maintain a level “playing field” for insulation products and customer confidence in the performance of these products. While some cost incurred by manufacturers is passed onto the customer, this cost more than covers the damage of exaggerated claims and unrealized performance of faulty claims and testing.

3. *Benefits and Costs to Industry Members: What benefits, if any has the Rule provided to businesses, and does the Rule impose any significant costs, including costs of compliance, on businesses, including small businesses?*

Industry members have accepted the cost of compliance to the Rule and agree the benefits of a level playing field and customer confidence outweigh the costs.

The testing and labeling requirements are fair and reasonable providing a set of requirements by insulation product type. The Rule was developed and implemented at a time where unsubstantiated claims were harming consumers. It has served to minimize costs that would otherwise be higher in a market where there is no even playing field. For small businesses, the Rule clearly defines conditions on participating in the residential market.

4. *Recommended Changes: What modifications, if any, should the Commission make to the Rule to increase its benefits or reduce its costs? How would these modifications affect the costs and benefits of the Rule for consumers? How would these modifications affect the costs and benefits of the Rule for businesses, particularly small business?*

We suggest that FTC expand the Rule to include commercial products as well as residential.

Due to the great success of the Rule for mass insulation, such as fiberglass and foam insulation, we do not suggest any changes for these products. However, consumers and businesses would benefit from further clarification regarding proper R-value qualification and disclosure for “reflective insulation” products and their claims in the market. We also believe this would benefit the reflective insulation industry as a whole. Because the performance of these products depends so strongly upon specific installation details and conditions of use, these products work very differently than “mass” insulation products. Reflective insulation and related reflective products, such as radiant barriers, have unique characteristics that should be more fully considered and further clarified by this Rule. For example, the performance of reflective insulations depends heavily on the ability to construct sealed air-spaces with little to no air-leakage, yet current test methods or calculation procedures used to justify R-values are based on ideal conditions which may or may not be appropriately declared or achieved in end use. Also, R-value claims are heavily dependent on heat flow direction for horizontal air-space applications and this may not be consistently disclosed, resulting in claims that may be partly true or only true for a particular season of the year. These conditions, when not fully disclosed, can lead to misapplications or errors in appropriate use of thermal properties or claimed effective R-value equivalents. Because of the confusion these concerns have created in the marketplace, the “reflective insulation” industry could benefit from additional guidance in regard to their testing, construction of air spaces used to claim their performance, aged performance as it relates to long-term emissivity of reflective surfaces, and direction of heat flow effects on effective R-value for different seasons of the year. The cost to the industry and consumers to address these concerns should not be more than it has been for manufacturers of “mass” insulation. These costs far outweigh the cost of not making these clarifications as it opens the door for unreasonable claims or misguided applications which create a deterrent to the competitive and appropriate use of these materials.

There are many Radiant Barrier and Radiation Control Coatings that have been on the market for many years. The Rule should clarify that these products are not insulation. In fact, some of these products, like radiant barriers and radiation control coatings, have similar characteristics as storm windows and doors that are excluded from the Rule as they behave differently, in different climates

for example, than mass insulation products. There may be some benefit, but it cannot be quantified in all applications. These effects must be properly quantified and reported to support any specific claims as to energy saving benefits or R-value equivalents.

5. *Impact on Information: What impact has the Rule had on the flow of truthful information to consumers and on the flow of deceptive information to consumers?*

Standardized uniform R-value reporting provides confidence to the user of insulation products. We need to maintain a uniform reporting format for mass insulation products.

Unfortunately, many consumers do not understand that the R-values of reflective insulation products are only realized when they are accompanied by field constructed air spaces with very specific characteristics such as a means to prevent air-leakage to or from the air space as outlined in the 2013 ASHRAE Handbook of Fundamentals. For example Chapter 26 of the 2013 HOF (page 26.12) states that reflective insulation used behind siding “should not be considered reflective insulation”, because of the dominance of air exchange. Yet, the Rule and the referenced test procedures do not clearly indicate this limitation. Consequently, many of these products are used outside of an air barrier (e.g., behind cladding) where the airflow into and out of the air space can be significant and therefore erode the anticipated thermal properties of the air space despite the fact that the ASHRAE Handbook of Fundamentals requires specific characteristics of the air space in order for values in the Handbook or idealized test conditions to be claimed. Various concerns have also been realized by EPA's Energy Star Seal and Insulate program as cited by publicly available information found here:

https://www.energystar.gov/ia/partners/prod_development/revisions/downloads/insulation/Memo_on_Reflective_Ins_Concerns.pdf

This concern has also been recently addressed by consensus with newly added criteria and limitations to the 2016 ASHRAE Standard 90.1, Section 9.4. While the reflective insulation industry has participated in the development of various ASTM standards for product testing and installation, they have not produced adequate performance standards or research to guide the industry in the use of these products to ensure that false or exaggerated claims or inappropriate applications are not made. Furthermore, they have not provided performance data related to the aging of these products and their air spaces. There are known issues of dust accumulation and water pitting that would affect the emissivity of the product surface and therefore degrade long term performance. We urge FTC to demand such data or not allow R-value to be claimed for the airspaces associated with these products. At a minimum, R-value claims for reflective insulation products should include transparent statements regarding the construction of the air space to specifically avoid air exchange, placement of the airspace in relationship to the air barrier and other building envelope enclosure components, effects of direction of heat flow in relation to airspace orientation, and the expected rate of degradation of performance over time for various applications or environmental exposures. Individually and collectively, these factors are known to have a significant impact on the performance of reflective insulation and should be fully disclosed to the consumer. Reflective insulation materials do include a mass insulation element which can be tested via hot plate methods and claimed as appropriate, separate from the effects of an associated reflective air-space with concerns as noted above.

- 6. Compliance: Provide any evidence concerning the degree of industry compliance with the Rule. Does this evidence indicate that the Rule should be modified? If so, why, and how? If not, why not?**

There seems to be a great deal of compliance with the Rule as it stands today. Therefore our suggestions are that it is further expanded based on the comments we have provided for reflective insulation to further improve its value to consumers and to create an even playing field for market competition.

- 7. Unnecessary Provisions: Provide any evidence concerning whether any of the Rule's provisions are no longer necessary. Explain why these provisions are unnecessary.**

None identified.

- 8. Additional Unfair or Deceptive Practices: What potentially unfair or deceptive practices, not covered by the Rule, related to insulation products are occurring in the marketplace? Are such practices prevalent in the market? If so, please describe such practices, including their impact on consumers. Provide any evidence, such as empirical data, consumer perception studies, or consumer complaints, that demonstrates the extent of such practices. Provide any evidence that demonstrates whether such practices cause consumer injury. With reference to such practices, should the Rule be modified? If so, why, and how? If not, why not?**

The Rule should outline an affirmative disclosure requirement on reflective insulation, including a statement that Radiant Barriers and Radiation Control Coatings are not insulation. See additional comments in (4) and (5) above.

- 9. Product Coverage: Should the Commission broaden the Rule to include products not currently covered? Provide any evidence that supports your position. What potentially unfair or deceptive practices related to products not covered by the Rule are occurring in the marketplace? Are such practices prevalent in the market? If so, please describe such practices, including their impact on consumers. Provide any evidence, such as empirical data, consumer perception studies, or consumer complaints that demonstrates the extent of such practices. Provide any evidence that demonstrates whether such practices cause consumer injury.**

As previously mentioned commercial insulation products generally and voluntarily rely on this rule to inform the market and even the playing field. Also, many products used in the residential market are also used in the commercial market. It would not add cost or burden to include commercial products in this Rule as compliance is already very high.

The term "reflective insulation" should be reconsidered. It is potentially deceiving to consumers who think that these products are offering the same type of conductive thermal resistance as mass insulation products for reasons noted in (4) and (5) above. Also, many of these products are not "aluminum" foil but have a high emissivity surface. Perhaps a more accurate term should be used (like reflective film). A terminology distinction is needed because the actual insulation component of a so-called "reflective insulation" can and does act independently as a mass insulation material while any additional effective R-value enhancement of a reflective surface film (often separately

adhered to a mass insulation material) acts independently as a means to address radiant heat transfer invoking all of the concerns and dependencies as mentioned previously in (4) and (5). Thus, use of the term “reflective insulation” tends to obscure important differences between mass insulation and reflective materials, particularly the qualification and assurance of claimed R-values and associated use limitations or conditions required to achieve claimed R-values.

Radiant barriers and irradiant coatings are incapable of having an R-value attributed to them. Therefore, we request that the FTC clearly state in the rule that these products are not to be marketed as insulation or claim any R-value..

10. *Technological or Economic Changes: What modifications, if any, should be made to the Rule to account for current or impending changes in technology or economic conditions? How would these modifications affect the costs and benefits of the Rule for consumers and businesses, particularly small businesses?*

None identified.

11. *Conflicts with Other Requirements: Does the Rule overlap or conflict with other federal, state, or local laws or regulations? If so, how? Provide any evidence that supports your position. With reference to the asserted conflicts, should the Rule be modified? If so, why, and how? If not, why not? Are there any Rule changes necessary to help state law enforcement agencies combat deceptive practices in the insulation market? Provide any evidence concerning whether the Rule has assisted in promoting national consistency with respect to the advertising of insulation products.*

The 2015 (and other versions) of the International Energy Conservation Code for Commercial Buildings, Section C303.1.4 requires that insulation R-value be determined in accordance with the FTC R-value Rule. This does not in and of itself create a conflict and is largely supported by manufacturers and others in the industry. However, Walk-in Cooler and Freezer requirements have been added to the code without distinguishing which of these units fall under the jurisdiction of the Department of Energy (DOE) via their Regulation for Walk-in Coolers and Freezers and which fall under the jurisdiction of the code/code officials. Walk-in Coolers and Freezers defined in DOE’s Regulation 10 CFR 431.302 fall under the jurisdiction of DOE and must comply with the requirements of 10 CFR Part 431, Subpart R, this includes systems that have an enclosed storage space refrigerated to temperatures above, at, or below 32 degrees Fahrenheit that can be walked into and have a total chilled storage area of less than 3,000 square feet. It does not include other systems including products designed and marketed exclusively for medical, scientific, or research purposes. This now creates a conflict between how R-values are determined in the code for Walk-in Coolers and Freezers. The code requires testing per the FTC Rule and the DOE requires testing per their regulation. The DOE Regulation differs from the FTC Rule in both aging of products and then mean temperature at which products are tested. We urge DOE and FTC to actively support the removal of Walk-in Coolers and Freezers that fall under DOE’s jurisdiction from the code to eliminate this issue.

Page 9 Section III B: Specific Questions Related to the R-Value Rule

- 1. Aging of Cellular Plastics: Should the Commission update the required test procedures for the aging of cellular plastic insulations under 460.5(a)(1) to ensure consistency among R-value claims and to otherwise prevent deception? Specifically, should the Commission amend the Rule to require ASTM 1303 (“Standard Test Method for Predicting Long-Term Thermal Resistance of Closed-Cell Foam Insulation”) or a different test? If so, to which products should this test apply?***

There continues to be confusion in the industry regarding LTTR amongst manufacturers and users. LTTR has been discussed at ASTM and CAN/ULC standards committees. Despite much effort over the years, these attempts have failed to provide a clear consensus for all products covered by these standards. The industry cannot agree on a method that can be applied to all foamed plastic products, faced and unfaced, and with assorted thicknesses. Additionally, the standard deviation around the various iterations of the test method is significant. Therefore, LTTR has not been shown to be a material test method that provides a uniform means of accurately comparing different cellular plastic thermal insulations. Due to the different methods to demonstrate thermal resistance conformance for different insulations, LTTR no longer provides a uniform means to compare different cellular plastic thermal insulations.

The use of conditioned thermal resistance requirement per ASTM C518 or C177 provides the ability to use C177 as the referee method in case of disputed thermal values. The use of C1303 or CAN/ULC S770 eliminates the ability of the foam plastic industry to use ASTM C177 for cases of dispute in thermal resistance measurements. ASTM C1303 and CAN/ULC S770 thermal resistance testing is based on ASTM C518 alone and does not provide a referee method. The removal of a referee method incurs an unfair restriction on foams with the intent to retain a blowing agent manufactures.

Caution needs to be taken with the thermal test requirement for foams that incorporate pentane as a blowing agent. The thinking is that the pentane diffuses out of the foam in a matter of weeks or months. However, pentane has a similar gas thermal conductivity as commonly used hydrofluorocarbon blowing agents. Pentane provides added thermal resistance to the foam in the early weeks/months of the age of the foam. However, there are no restrictions or aging requirements on the thermal testing of the pentane blown foams. If manufactures of pentane blown foam chose to test and report the results from fresh foam, the thermal conductivity of the foam will be higher. This results in inflated thermal conductivity values for the pentane blown foams.

The precision of ASTM C1303-15 is significantly influenced by a variety of factors including: specimen preparation technique, dimension measurement procedures, and the precision of the thermal test method used. As a result, precision data on these combined factors is not yet available for all material types in this standard.

ASTM C 1303 applies only to unfaced, homogenous materials. CAN/ULC S770, applies to permeably faced polyisocyanurate, polyurethane, and extruded polystyrene foam plastic insulations. At the present time, the industry cannot agree on a method that can be applied to all foamed plastic products, impermeably faced and unfaced, and at various thicknesses. Therefore, LTTR has not been shown to be a material test method that provides a means of accurately comparing different cellular plastic thermal insulations.

For the above reasons, we do not believe that ASTM C1303 or CAN/ULC S770 should be added as a requirement to FTC CFR Part 460. However, if LTTR were to be added, why limit the methods to estimate only the five year thermal resistance value? Why not have the testing and results be more in line with the expected service life of the cellular plastic?

2. *Affirmative Disclosures: Should the Commission consider changing, adding, or removing affirmative disclosures required by the Rule for labeling and advertising related to mass insulation, reflective insulation, or radiant barriers?*

The current Affirmative Disclosures should remain in place. In addition we suggested that guidance be given to radiant barrier manufactures that they are not to make R-value claims or claims that their energy savings in any way equivalent to that of insulation products bearing an R-value. Again, the EPA Energy Star Seal and Insulate program acknowledges the challenges with savings claims associated with these products and that they do not provide an R-value to base such claims. See Energy Star letter explaining their position here:

https://www.energystar.gov/ia/partners/prod_development/revisions/downloads/insulation/Radiant_Barrier_Memo_2012-03-26.pdf Additional Affirmative Disclosures should also be required for reflective insulation products as per comments in A(5) above.

3. *Foam Insulation: Given the significant increase in the use of foam insulation products since the last Rule review, should the Commission consider any Rule changes to help prevent deception in the marketing of such products, or reduce unnecessary burdens on sellers?*

Material standards should not be used to predict building performance but offer product comparison and quality control measures. This is expressly stated in the ASTM and CAN/ULC material standards

- *Scope 1.2 The Standard describes product characteristics and includes procedures for testing, evaluation of conformity, marking and labeling. As well as*
- *Scope Note 3: "NOTE 3: This Standard does not purport to address all possible end-use concerns. It is the responsibility of the user of this Standard to contact the manufacturer regarding design considerations including specific end-use applications."*

One of the thin slice alternate methods, CAN/ULC S770, designates LTTR as the "design" value which is misleading. LTTR does not account for the impact of moisture, temperature, facings, etc. on thermal performance, or the impact of the materials application in a building. A "design" value is not appropriate as a reference point in a material standard. Material standards need an appropriate reference point for property comparison. The definition of LTTR as the "design" thermal resistance clearly goes against the intent of *Table 1, NOTE 1:*

NOTE 1: The test methods used to determine the above material properties provide a means of comparing different cellular plastic thermal insulations. They are intended for use in specifications, product evaluations and quality control. They are not intended to predict end-use product performance.

- 4. Testing Requirements: Should the Commission consider any changes to the testing provisions in the Rule? Such potential changes include, but are not limited to, test updates, the addition of new or existing tests not currently referenced in the Rule, or changes to other testing related requirement such as the Rule's "tolerance" provision (section 460.8).¹⁴ Are there any tests currently referenced in the Rule that should be removed?**

We suggest changes only as discussed in A(4)(5) above. In addition note that ASTM C1363 is not intended to evaluate air movement through assemblies or portions of assemblies such as air-spaces behind cladding. As often misunderstood in the market, the air-flow provided in this test method only assures mixing of air in the test chamber and does not replicate or simulate air-exchange across or within portions of the tested assemblies. See ASTM C1363 Appendix X1 . This concern is primarily an issue when evaluating whether or not air spaces within an assembly as required for use of reflective insulation are actually going to result in the desired or claimed performance. We suggest either a new test method be developed or that appropriate air exchange rates be imposed on airspaces during ASTM C1363 testing to ensure that claimed reflective air-space R-values are reasonably consistent with end-use conditions known to have a significant effect on thermal value. No other current tests methods have been identified that need to be removed or changed at this time.

Thank you again for the opportunity to submit these comments. Please contact me with any questions or comments.

Sincerely,



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