

Comments

The comments highlighted the differences of opinion about the appropriate test procedure to account for the aging of cellular plastics. In large part, the primary issue was whether the Commission should amend the Rule to include a relatively new standard, ASTM C 1303–95 (“Estimating the Long-Term Change in the Thermal Resistance of Unfaced Rigid Closed Cell Plastic Foams by Slicing and Scaling Under Controlled Laboratory Conditions”). Comments also addressed the need for the Commission to adopt additional test procedures for the measurement of other materials.

NAIMA stated that the cellular plastics industry has struggled for many years over what methodology should be used to determine the long-term in-service thermal performance of cellular plastics insulations.³⁰ In NAIMA’s view, none of the available methods has been agreeable to all industry sectors. Because of this lack of agreement, NAIMA recommended that the Commission adopt aging methods already accepted by the majority of industry representatives and formally approved by ASTM: (1) ASTM C 1289 for polyisocyanurate; (2) ASTM C 578 for extruded polystyrene; and (3) ASTM C 1029 for polyurethane. NAIMA noted, however, that there is currently no acceptable procedure for determining long-term thermal performance of impermeably faced cellular foam insulations. Until a level playing field can be established, NAIMA recommended maintaining and reporting R-values based on aging for the currently accepted 180-day period. NAIMA also indicated that, although the 180-day value does not in its view provide “real design” (actual performance) information, it is a value with which the consumer is familiar.

PIMA generally supported the adoption of ASTM standards, except C 1303. It opposed the incorporation of C 1303 into the Rule because, in its view, the standard does not address the effect of facings and the test’s precision for cellular plastics was developed on a limited set of samples, in some cases consisting of experimental products. PIMA maintained that the standard is intended as a laboratory research tool to evaluate chemical changes and should not be used as a test for making R-value claims under the FTC’s Rule. In addition, PIMA contended that the codification of C 1303 would impose on manufacturers a significant additional testing cost of \$25,000–30,000 per

product and stated that only a limited number of testing labs perform the test. PIMA asserted that the reason for this high test cost is the level of detail required in C 1303 to provide technical measurements of blowing agent diffusion coefficients and the damaged surface layer caused by slicing.

PIMA did, however, recommend that the Commission adopt C 1289 (for faced rigid cellular polyisocyanurate board); C 1029 (for extruded polystyrene); and C 591 (for polyurethane). PIMA maintained that, for products “with relatively non-permeable facings,” the Rule’s current aging procedures are adequate. PIMA also suggested that expanded polystyrene insulation products should be required to be tested for aging under suitable procedures similar to those in ASTM C 578. PIMA stated that, as a general matter, ASTM standards should be adopted because they represent the best available techniques developed by industry consensus and they take into account variations in materials and manufacturing as well as the numerous factors that can affect the aging process.³¹

ConsultMORTinc also opposed adoption of ASTM C 1303, suggesting that C 518 is an appropriate test for plastic foams at full product thickness if 180-day lab-conditioned (six-month lab aged) values are used. ConsultMORTinc contended that the ASTM C 1303 test method is only an “estimate” and should not be used for appraising performance in actual use, and stated that the procedure does not address the effects of “manufactured thickness.” ConsultMORTinc maintained that its own studies demonstrate that thicker polyurethane foams are protected from gas permeation for one year or more, which suggests that the C 1303 slicing method is inaccurate for thicker foams.³²

SPFA supported full product thickness testing at industry-accepted 180-day lab-conditioned aging, based on ConsultMORTinc data. It advised against the improper use of ASTM C 1303, maintaining that the standard does not account for the effect of extra thickness in protecting the product from outside air infiltration, and does not account for the fact that spray polyurethane foam is applied in several layers, or “lifts,” that are surfaced with denser polymer skin, or for substrate or covering in roofing applications.³³

Tenneco opposed adoption of ASTM C 1303 for aging foam plastic

insulations, emphasizing that the test method itself indicates that its precision and accuracy are not yet established, and pointing out that its reproducibility is not yet understood. In addition, Tenneco contended that the test does not accurately reflect long-term aging because it does not account for the effect of skin surface or facings and fails to account for the fact that gas diffusion is multi-dimensional. Speaking as a member of the ASTM C 1303 Task Group, Tenneco maintained that the standard was intended primarily to estimate R-values of core material for purposes of new product development, and stated that concern was expressed during the test’s development that it might inappropriately be used as a regulatory tool.³⁴

EPSMA supported a combination of accelerated aging tests and mandatory disclosures about R-values declining significantly with age beyond that indicated by tests. In its view, an accelerated aging test alone does not “fully reflect” the effects of aging. EPSMA pointed out that, according to RIC/TIMA, tests alone are meant to give a standard basis for comparison, not to predict long-term R-values accurately. It also supported exploration and use of limited aging procedures to predict long-term R-values as well as requirements for disclosures when accelerated aging procedures are used. EPSMA suggested that an appropriate R-value aging disclosure can be accomplished either through qualitative disclosure or quantitative disclosure. For instance, EPSMA suggested that one possible qualitative R-value disclosure could read: “The R-value of this insulation has been established using a [identify test procedure] accelerated aging procedure. Because of aging, the longer term R-value of this insulation in your home may be significantly lower than the R-value stated.”³⁵

Celotex supported the use of ASTM C 1303 to predict the effects of aging in permeable-faced cellular plastics (polyisocyanurate and polystyrene) blown with a non-air agent, and the use of ASTM C 1289 for impermeable-faced boards. Celotex recommended the implementation of a two-year phase-in period to allow time for industry members to conduct appropriate testing. It contended that the accuracy of the ASTM C 1303 test is demonstrated by consistency with the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (“ASHRAE”) Handbook. In addition, Celotex stated that it had run multiple

³¹ PIMA (3), pp. 2–6, 10.

³² ConsultMORTinc (12), pp. 1–2.

³³ SPFA (18), p. 1.

³⁴ Tenneco (16), pp. 1–2.

³⁵ EPSMA (6), pp. 3–6.

³⁰ NAIMA (9), pp. 10–11.