

AC377-0609-R1

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AC12-0609-R1

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May 27, 2009

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Mr. Michel Beaton
Senior Regional Manager
ICC ES
5360 Workman Mill Road
Whittier, CA 90601

JUN - 1 2009
ICC-ES Evaluation Committee

Subject: NAIMA Comments to Proposed Revisions to the Acceptance Criteria for Foam Plastic Insulation, Subject AC12-0609-R1 (MB/SF) and Acceptance Criteria for Spray-Applied Foam Plastic Insulation, Subject AC377-0609-R2 (SF/MB)

Dear Mr. Beaton:

I am submitting these comments on behalf of the North American Insulation Manufacturers Association to the proposed revisions to the acceptance criteria AC12-0609-R1 and for Foam Plastic Insulation and acceptance criteria for Spray-applied Foam Plastic Insulation, Subject AC377-0609-R1. NAIMA is the association for North American manufacturers of fiber glass, rock wool, and slag wool insulation products. Its role is to promote energy efficiency and environmental preservation through the use of fiber glass, rock wool, and slag wool insulation, and to encourage the safe production and use of these materials.

General Comments on Proposed Subjects AC12-0609-R1 & AC377-0609-R1

NAIMA agrees that there is a need to address fire testing for foam plastics used specifically in crawl spaces or attics. Notwithstanding the fact that the codes require testing of Insulation products in accordance with ASTM E84 or UBC Standard 8-1 amongst other tests, the "Special Approval" for foamed plastics in IBC section 2603.9 still requires that "...Such testing shall be related to the actual end-use configuration and be performed on the finished manufactured foam plastic assembly in the maximum thickness intended for use." This critical component cannot be ignored.

It is quite clear from the submissions by the various interested and affected parties that there is no clear consensus among the industry on the appropriate test methods, fire scenarios, or benchmark performance levels for use of foamed

plastics in attics and crawl spaces without the use of a thermal barrier or ignition barrier. In the absence of any consensus, it is completely premature to permit the elimination of thermal barriers or ignition barriers based on compliance with AC12 or AC 377.

It has been pointed out in the past by NAIMA and others that the use of the room corner tests to allow recognition of exposed foam plastic insulation on attic floors for the same thickness and density of foam plastic insulation tested on the walls, even though the tested assembly uses a different geometry from that intended for use, and does not include foam plastic applied on the floor during the test, needs to be justified. Further, the proposal to limit the Burner output to 40 kW is not in keeping with the current Code requirements requiring NFPA 286 fire exposure. The 40kW exposure is not sufficient to cause sustained flame impingement on the horizontal surfaces of the test specimen. As proposed, this fire scenario is significantly less severe than what the Codes currently would permit.

Equally, there are several concerns that have been raised with the way in which the Southwest Research Institute protocol is being applied. When ICC-ES first solicited comments regarding revisions to AC12, NAIMA submitted comments opposing the use of the Southwest Research Institute test procedure which permitted kraft-faced fiber glass insulation as the baseline criteria. NAIMA believes it is critical to add specific language to the acceptance criteria that clearly prohibit using kraft-faced fiber glass, or any other material that would not meet code requirements, from being used as the baseline test material. It is our contention that all baseline tests must be done using methods and materials permissible in the Code. For example, if full-scale fire tests are conducted using mineral fiber insulation as the baseline material, the mineral fiber insulation shall have a flame spread index of less than 25 and a smoke developed index of less than 50. The use of a "time-to-flashover" pass/fail criterion based on the average of the times to flashover for 5 different criterion is not technically defensible. The time to failure in most fire tests is established based on the time of first occurrence of any of the prescribed failure modes. NFPA 286 does allow time to flashover to be determined based on the first occurrences of two of the criterion. However, this proposals attempts to employ the average time from 5 different criteria to be used as the "bench mark" for time to flashover. Consequently, time to flashover as measured by up to 4 criteria could occur at less than the average time, but if the fifth criterion does not occur for a prolonged period, the test could be deemed to have passed. This is not reasonable.

Smoke is an inevitable consequence of a fire and its generation is therefore always dependent on the fire scenario and the types of materials involved. The main issues with smoke are that it can cause loss of visibility during escape and that the inhalation of smoke is toxic. Reduction or loss of visibility leads to delays in escape, disorientation and longer exposure times. Inhalation of smoke can lead to impairment and irritation and can even result in incapacitation or death.

The control of smoke is therefore an important element in buildings. Room corner tests do evaluate fire growth and flashover. However, with the exception of the criteria for NFPA 286, the pass/fail criteria proposed for the room corner tests in the proposed acceptance criteria do not include quantitative evaluation of smoke density. Since restrictions relating to interconnected attic areas and circulation of attic air to other parts of the building are based as much, if not more, on issues arising from smoke production from burning foamed plastics, and smoke migration, it is not reasonable to remove these restrictions based on room corner tests unless the limits on smoke production are applied to all of the room corner tests, and appropriate limits are identified for the attic and crawl space applications. As a result of the lack of specific quantitative smoke development criteria, it is not justifiable to remove these limitations, which deal primarily with the risk of smoke migrating to inhabitable spaces or throughout other parts of the building. There is a considerable difference in risk of smoke development and migration between foamed plastics installed with a thermal barrier or ignition barrier versus exposed foamed plastics in these applications.

Based on numerous fundamental concerns expressed by ourselves and others, the further allowance in AC12 & AC377 to remove other restrictions relating to interconnected attic areas and circulation of attic air to other parts of the building cannot be justified based on the proposed AC12 and AC377 acceptance criteria.

In conclusion, it is clear from the multiple submissions that there remains significant technical issues which need to be resolved as relates to testing and evaluation of foamed plastics, specifically in the absence of Code required ignition and thermal barriers. It is clear that no consensus exists among the industry on the appropriate test methods, fire scenarios, or benchmark performance levels for use of foamed plastics in attics and crawl spaces without the use of a thermal barrier or ignition barrier. In the absence of any consensus and the absence of any resolutions to these significant technical concerns expressed by several parties, it is entirely premature to permit the elimination of thermal barriers or ignition barriers based on compliance with AC12 or AC 377. As such, Appendix B of AC 377, Alternate Qualification for Use in Attics and Crawl Spaces also needs to be deleted, as insufficient progress has been made to continue to permit acceptance on this basis, and the period of extension has expired.

Your truly



Tony Crimi, P. Eng.
President



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AC12-0609-R1

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May 29, 2009

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The Dow Chemical Company
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ICC Evaluation Services, Inc.
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JUN - 3 2009
ICC-ES Evaluation Committee

**DOW RESPONSE TO PROPOSED CHANGES TO ICC-ES ACCEPTANCE
CRITERIA AC-12**

Mr. Beaton,

Thank up for your efforts in up-dating AC-12. I agree with your combined letters dated April 30, 2009, "Proposed Revisions to the Acceptance Criteria for Foam Plastic Insulation, Subject AC-12-0609-R1 (MB/SF)" and May 29, 2009 "Proposed Revisions to the Acceptance Criteria for Foam Plastic Insulation, Subject AC-12-0609-R1 (MB/SF)", and I have one further request for consideration.

I believe the simplest solution to up-date AC-12 to ASTM C 578-08 is to make the date change in the standard section of the acceptance criteria:

1.3.2.1.4 ASTM C 578- ~~06~~ 08, Specification for Rigid Cellular Polystyrene Thermal Insulation

In my letter dated July 18, 2008, I provided a full explanation, including a moisture analysis, that confirmed NO CHANGE in foam board performance between material meeting ASTM C 578-06 Type IV and material meeting ASTM C 578-08 Type IV. Changing AC-12 to ASTM C 578-08 DOES NOT impact the code compliance of these materials.

If staff and the committee still feel it necessary to leave in the following ICC-ES staff proposed change:

3.4.2 ~~3~~ Rigid Cellular Polystyrene

Exception 3: Extruded polystyrene is permitted to have a water-vapor permeance of no more than 1.5 perm (143 ng/Pa.s.m²) {NOTE: This value is permitted in ASTM C 578-08}

Then, I am requesting deletion of the additional language:

6.6 When a foam plastic insulation is qualifies using Exception 3 of Section 3.4.3, the evaluation report shall include the vapor permanence rating for the product.

This statement is not necessary and if fact, I believe it will add further confusion. There is NO difference in product performance with respect to the building code requirements if an ASTM C 578 Type IV product has a maximum water vapor permeance (WVP) of 1.1 perm (ASTM C 578-06) or 1.5 perm (ASTM C 578-08). Many other products in ASTM C 578-06 have maximum allowable WVP greater than 1.5 perm. In fact other ASTM foam sheathing standards allow products to have maximum WVP values higher than 1.5 perms.

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I respectfully request that AC-12 be up-dated using the simple solution of just changing the ASTM C 578 version from 06 to 08 (section 1.3.2.1.4) and that the other related proposed changes (to sections 3.4.3 and 6.6) not be added. I look forward to discussing this topic on June 3, 2009 at the ICC-ES Acceptance Criteria hearing.

Sincerely,

Joann E. Surma

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May 29, 2009

JUN - 3 2009

ICC-ES Evaluation Committee

Mr. Michael Beaton
Senior Vice President
ICC Evaluation Service, Inc.
5360 Workman Mill Road
Whittier, California 90601

Re: Comments on ICC-ES Hearing Subject AC12-06-09-R1
HAI Project No. 1JJB05242.010

Dear Mike:

I am providing the following comments with respect to the "Proposed Revisions to the Acceptance Criteria for Foam Plastic Insulation, Subject AC12-06-09-R1." In this matter I am representing the Extruded Polystyrene Foam Association (XPSA).

We have the following comments to the proposed revisions:

ITEM 1 – Proposed Appendix A - 2nd and 3rd lines in Title – delete "Requirements of Appendix A will be effective until June 1, 2010." and "After that date, compliance with Section, Appendix B will be required". This will allow, for AC12 the continuation of appropriate testing methods for board stock materials. It is our understanding that the new Appendix B was added to provide an alternative to the existing tests, not as a replacement for any or all of the existing tests.

ITEM 2 –Proposed Appendix B

1. Section B1.0 - First line – remove "(SPF)"
2. Section B2.1.2 – Specimen Mounting – 2nd Sentence – revise to read: "The fire test room shall be completely lined with one layer of 5/8-inch-thick, Types X gypsum wallboard or ¼ inch glass reinforced cement board." Continues allowance of the use of the cement board as an alternative to gypsum wallboard as a substrate.

ITEM 3 – Proposed Appendix C – Section C1.0 – 1st Sentence – Revise to read: "The objective of this test.....is acceptable for use in ~~attic or~~ crawl space areas.....barrier." This change clarifies that this test is to apply to crawl space areas and not to attic spaces.

ITEM 4 – Section 3.4.2 – revise 2nd sentence to read: "Where the number of test specimens is not specified in the applicable test methods, a minimum of ~~five~~ three specimens shall be used."

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This change is in keeping with industry standards. Three tests are typically sufficient to provide an acceptable average and most of these types of tests require only three specimens

ITEM 5 – Section 3.4.3, New Exception 3 should read: Extruded polystyrene is permitted to have a water-vapor permeance of no more than ~~2.5~~ 1.5 perms....” We believe that is simply a typo. 1.5 is the correct value per C578-08.

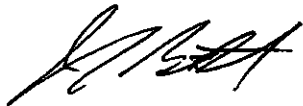
ITEM 6 – Section 4.5.15.1.3 - new bulleted items: Remove the words “-modified resins” from both bullet points. The verification is for the presence of the fire-retardant not the resin.

ITEM 7 - Section 4.5.15.2.3 - new bulleted items: Remove the words “-modified resins” from both bullet points. The verification is for the presence of the fire-retardant not the resin.

ITEM 8 – Delete Section 6.6 – The industry does not feel that this additional requirement is warranted. We are not aware on any problems or data showing a significant problem. Also, this value is permitted in the latest version of ASTM C578-08.

Thank you for your consideration of our comments and if you have any questions please feel free to contact me at 410-737-8677.

Sincerely,



Jesse J. Beitel
Senior Scientist / Principal