

Rosalind Fazel

From: mike.mckitrick@alcan.com
Sent: Thursday, August 28, 2008 4:15 PM
To: Rosalind Fazel
Subject: AC38 Comments

Comments on Criteria AC38.

Mike McKitrick
Alcan Composites USA
704-658-3520
mike.mckitrick@alcan.com

Comments:

Air leakage criteria should be kept separate and not included in the Water Resistive Barrier Criteria. Just because an item may be able to be used as both the water and air barrier does not mean you have to mix these properties in one AC. Air leakage should be in its own AC. I do not favor the blanket performance requirement of testing at 75Pa. What is the basis for 75Pa being the measure of minimum performance "Condition of Acceptance"? Building in some areas (valleys versus on top of a hill) may require different pressure measurements. Air leakage is certainly important and should be in its own AC as opposed to being fit into water-resistance.



200 LARKIN CENTER
August 29, 2008

The Dow Chemical Company
Midland, Michigan 48674

Michael Beaton
ICC Evaluation Services, Inc.
5360 Workman Mill Road
Whitter, CA 90601

PROPOSED CHANGES TO ICC-ES ACCEPTANCE CRITERIA AC-38

Mr. Beaton,

I am writing to respond to the proposed changes addressed in ICC-ES letter dated August 1, 2008 subject, "Proposed Revision to the ICC-ES Acceptance Criteria for water-resistive barriers, Subject AC38-0808-R1 (MB/ST). Dow Chemical objects to the inclusion of air barrier assembly recognition assessed by ASTM E 2357-05 in ICC-ES AC 38 for multiple reasons:

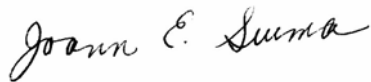
1. The scope of AC-38 does not address wall assemblies. With respect to this issue, this acceptance criteria is used to qualify membrane material for use as an "air barrier material". The material test, ASTM E 2178, already included in AC-38, is an appropriate test method.
2. ASTM E 2357 is an industry accepted test method to assess air leakage in assemblies. The entire assembly is assessed during the testing. The output does not identify which component or sealing technique is the critical portion that provides the air barrier performance. There are multiple scenarios where a housewrap material can be used as part of an assembly and not contribute to the air barrier performance of the wall, for example:
 - a. A wall assembly which incorporates interior gypsum board with caulked and/or taped joints may pass ASTM E 2357. In this case whether or not there is a housewrap on the exterior side of wall would not be pertinent to the air barrier performance. It would be confusing and inaccurate, in a ICC-ES housewrap code report to imply that the housewrap was an air barrier, because it was used as part of air barrier assembly that passed the test.
 - b. A wall assembly which incorporates foam plastic insulation boards with taped joints, or a spray foam plastic material that air seals may pass ASTM E 2357. The addition, or not, of a housewrap to the exterior side of that assembly will make no difference in the air barrier performance of the assembly. Again using that type of assembly testing to imply that the housewrap is an air barrier would not be accurate.
3. The materials covered under AC 310 are membranes, factory bonded to wood-based sheathing. The membrane material is not supplied or installed as an individual component. Section 2.1.2, Installation Instructions, and Section 6.0, Evaluation Report Recognition, of AC 310 clearly call out specific details that need to be addressed both in

- the manufactures installation instructions, as well as documented in the code report itself, when the product is being used as a air barrier assembly. These details are needed so that the code official can be certain that appropriate sealing is in place to achieve air barrier performance. These details are not included in proposed revision to AC-38.
4. If air barrier assembly recognition is desired, one alternative would be to create a separate acceptance criteria for recognition of assemblies for use as air barriers. This would allow varied assemblies and materials to qualify.

In summary, Dow Chemical does not believe it is appropriate to use ASTM E 2357 as a test method to qualify housewrap materials as air barriers under ICC-ES AC -38.

I am happy to discuss this with you or other ICC-ES staff. Please call me with any questions.

Sincerely,

A handwritten signature in cursive script that reads "Joann E. Surma".

Joann Surma
The Dow Chemical Company
Building Materials Technical Support
Senior Codes and Standards Specialist
200 Larkin Center
Midland, MI 48674
(989) 636-8655



The miracles of science™

5401 Jefferson Davis Highway
Spot 197/ Donnelly Bldg Room 101
Richmond, VA 23234
Tel: 804-383-2915
Fax: 804-383-3109

Aug 29, 2008

Michael Beaton, P.E.
Senior Regional Manager
ICC-Evaluation Services

Submitted via ICC-ES website
<http://www.icc-es.org>

RE: Proposed Revisions to the ICC-ES Acceptance Criteria for Water-resistive Barriers, Subject AC38-0808-R1 (MB/ST) date August 1, 2008

Dear Mr. Beaton,

I am writing to respond to the proposed changes to Acceptance Criteria for Water-resistive Barriers (AC38) to include additional criteria for qualifications of water resistive barriers in an air barrier assembly.

As you already know, this past February, AC38 was revised to include provisions for qualification as an air barrier material. I believe this was appropriate because the rest of the AC38 consists of material based testing only. The test method chosen for the evaluation, ASTM E 2178 Standard Test Method for Air Permeance of Building Materials, was appropriate as it is a material test and the only product challenged during the test is the water-resistive barrier..

Subsequently, Acceptance Criteria for Water-resistive Membranes Factory-bonded to Wood-based Structural Sheathing, Used as Water-resistive Barriers (AC310), was modified to contain evaluation criteria for air barrier assemblies. I believe using criteria for assemblies instead of materials was appropriate because in this case the water-resistive barrier is completely adhered to the sheathing and cannot be isolated from it to be tested as a material. The test method chosen for this evaluation, ASTM E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies, is appropriate to "simulate the performance of various air barrier materials/accessories when combined into an assembly." .

ASTM E 2357 is clearly a system test and does not isolate the water-resistive barrier to determine its contribution to the system. Other components may have a greater

impact on whether or not the system meets the performance criteria. These components include the presence or absence of sheathing, sheathing type and sheathing installation. In a report by the Pennsylvania Housing Research Center, air leakage testing of water-resistive barrier/sheathing assemblies showed an order of magnitude difference between systems where the sheathing was installed with a horizontal seam when compared to the same system with the sheathing installed with only vertical seams (fastened over studs).¹ Should AC38 be revised to include system test criteria, then evaluation reports issued based on air barrier assemblies should be limited to the assemblies on which testing was actually conducted and clearly identify the construction methods & means for the water-resistive barrier and underlying sheathing (if present) that are tested and approved. The current document posted on the website does not provide adequate details to ensure this.

I suggest the following changes to the proposed document:

3.5 Air Barrier Assembly Test: *When the product is to be evaluated as a component of an air barrier assembly, reports of air leakage testing in accordance with ASTM E2357 shall be submitted for each assembly to be evaluated. The assembly description shall include installation details of the water-resistive barrier and underlying sheathing materials, if present. A minimum of two ~~assemblies~~ specimens per evaluated assembly shall be tested. The test report shall indicate which cycling procedure was used (four stages of 500 cycles or two stages of 1000 cycles.)*

3.5.1 Conditions of Acceptance: *The air leakage rate shall be no more than 0.2L/(s0m2) at 75 Pa [0.04 cfm/ft2 at 0.3 inch w.g. (1.57 psf)] for all specimens.*

Thank you for your attention to this matter.

Sincerely,



Kimdolyn Boone
DuPont Building Innovations
Market/Product Development Engineer

¹ Burnett and Bosack, The Use of Housewrap in Walls: Installation, Performance and Implications, Pennsylvania Housing Research Center, December, 1998.