

## Analysis and Recommendations for Public Comments on RB102-09/10 for ICC Final Action Hearing

Released April 27, 2010

### Introduction:

RB102-09/10 proposal (see [Appendix A](#)) was approved as modified at the code development hearing by a unanimous vote (11-0) of the IRC Code Development Committee (CDC). The vote reflects the following merits of the proposal to:

1. Align terminology in the IBC and IRC with respect to Exterior Wall Covering
2. Clearly differentiate between sheathing applications used for structural framing purposes per Chapter 6 of the IRC and those that serve only building envelope or exterior wall covering functions per Chapter 7 of the IRC
3. Maintain that wind pressure resistance is required for all types of exterior wall sheathing, in addition to other structural or non-structural functional requirements.

### Analysis of Public Comments on RB102-09/10:

Three Public Comments were submitted on RB102-09/10 (see [Appendix B](#)). A detailed analysis of Public Comments on RB102-09/10 is provided in [Appendix C](#). The common concern in these PCs is that RB102-09/10 creates a “loop-hole” whereby some exterior wall sheathing materials or applications would not be required to resist wind pressure. However, all exterior wall sheathings must resist wind pressures, and this proposal does not change or alter that requirement. PC#1 provides further clarification of this universal requirement for exterior wall sheathings, whereas PC#2 and PC#3 request disapproval without regard to the merits of RB102-09/10.

Wind pressure requirements apply to exterior wall sheathings addressed in Chapter 6 of the IRC as well as those that fall within the scope of Chapter 7. For example, Chapters 6 and 7 of the 2009 IRC contain the following requirements that leave no room for confusion on this matter:

**R601.2 Requirements.** Wall construction shall be capable of accommodating all loads imposed according to Section R301 and of transmitting the resulting loads to the supporting structural elements.

**703.1.2 Wind resistance.** Wall coverings, backing materials and their attachments shall be capable of resisting wind loads in accordance with Tables R301.2(2) and R301.2(3)...

Furthermore, Chapter 3 of the IRC requires that wind loads be resisted by all sheathing materials used as wall coverings. This would include materials serving as part of the structural framing system and wall covering purpose or those serving only a wall covering purpose.

**R301.1 Application.** Buildings and structures, and all parts thereof, shall be constructed to safely support all loads, including dead loads, live loads, roof loads, flood loads, snow loads, wind loads and seismic loads

as prescribed by this code. The construction of buildings and structures in accordance with the provisions of this code shall result in a system that provides a complete load path that meets all requirements for the transfer of all loads from their point of origin through the load-resisting elements to the foundation. Buildings and structures constructed as prescribed by this code are deemed to comply with the requirements of this section. [Underlining added for emphasis]

Even materials that are “deemed to comply” (i.e., application is prescribed by requirements in the code) are not absolved from having to demonstrate compliance with the wind pressure and other performance requirements of the code. Products that are deemed to comply must still prove adequate resistance to loads.

Whether an exterior sheathing is used for structural framing purposes as addressed in Chapter 6 wall framing or for “exterior wall covering” purposes, or both, it must resist wind loads. RB102-09/10 does not alter any of the above wind pressure requirements for wall sheathings, whether applicable to Chapter 6 (wall framing) or Chapter 7 (wall coverings), and it does not create a loop-hole in the code. Instead, it clarifies important differences in the function of various sheathing materials.

### Conclusion & Recommendations:

Based on the detailed analysis of Public Comments (see [Appendix C](#)), including the merits of the original RB102-09/10 proposal and its unanimous (11-0) approval at the first code development hearing, the following positions are recommended for the final action hearing:

1. **Support the original RB102-09/10** approved as modified by the IRC CDC (vote 11-0)
2. **Support PC#1** as a friendly clarification of the original proposal
3. **Oppose PC#2** (which requests disapproval and is resolved by PC#1)
4. **Oppose PC#3** (which also requests disapproval and is resolved by PC#1)

If there are any questions or concerns not resolved by this *Tech Matters*, please contact Jay Crandell, P.E. (Consultant & FSC Technical Director) at [jcrandell@aresconsulting.biz](mailto:jcrandell@aresconsulting.biz).

### Other Relevant ICC Proposals:

To reinforce the intent that all exterior wall sheathing materials must resist wind pressures, including foam sheathing materials, the FSC also directs attention to code proposals FS156-09/10 Part 1 (IBC) and Part 2 (IRC). In a coordinated fashion, these proposals address appropriate requirements and limitations for use of foam sheathing to resist wind pressure and provide guidance for appropriate attachment requirements for siding materials when installed over foam sheathing. For additional information on the FS156-09/10 proposals, refer to FSC’s separate *Tech Matters* on this topic at [www.foamsheathing.org](http://www.foamsheathing.org).

## Appendix A

**RB102-09/10  
202 (New), R602.3**

### **Proposed Change as Submitted**

**Proponent:** Jay H. Crandell, PE, d/b/a ARES Consulting, representing the Foam Sheathing Coalition

#### **1. Add new definition as follows:**

**EXTERIOR WALL COVERING.** A material or assembly of materials applied on the exterior side of exterior walls for the purpose of providing a weather-resistive barrier, insulation or for aesthetics, including but not limited to, veneers, siding, exterior insulation and finish systems, architectural trim and embellishments such as cornices, soffits, fascias, gutters and leaders.

#### **2. Revise as follows:**

**R602.3 Design and construction.** Exterior walls of wood-frame construction shall be designed and constructed in accordance with the provisions of this chapter and Figures R602.3(1) and R602.3(2) or in accordance with AF&PA's NDS. Components of exterior walls shall be fastened in accordance with Tables R602.3(1) through R602.3(4). When used as wall bracing in accordance with Section R602.10 or other structural framing purposes in accordance with this chapter, Structural wall sheathing shall be fastened directly to structural framing members. Exterior wall coverings and, when placed on the exterior side of an exterior wall, shall be capable of resisting the wind pressures listed in Table R301.2(2) adjusted for height and exposure using Table R301.2(3). Wood structural panel sheathing used for exterior walls shall conform to the requirements of Table R602.3(3). Wall sheathing used only for exterior wall covering purposes shall comply with Section R703.

Studs shall be continuous from support at the sole plate to a support at the top plate to resist loads perpendicular to the wall. The support shall be a foundation or floor, ceiling or roof diaphragm or shall be designed in accordance with accepted engineering practice.

**Exception:** Jack studs, trimmer studs and cripple studs at openings in walls that comply with Tables R502.5(1) and R502.5(2).

**Reason:** The definition of "exterior wall covering" from IBC Chapter 14 is introduced to the IRC for appropriate and consistent usage regardless of building type or occupancy. The proposed revision to section R602.3 then applies this definition and, as an editorial proposal, helps to clarify requirements for sheathing installation on exterior walls. Wall sheathing that is used for structural purposes (e.g., bracing) is addressed in Chapter 6 Wall Framing while wall sheathing that is used solely for exterior wall covering purposes is appropriately addressed in Chapter 7 Wall Covering. The special reference to wood structural panels at the exclusion of listing specific requirements for other sheathing types is deleted because the requirements for applicable wall sheathing materials, including wood structural panels, are adequately addressed by reference to Tables R602.3(1) through R602.3(4). This change will help ensure consistent use of the terms "exterior wall covering" and "wall sheathing" in the IRC and better organize the code to address distinct requirements depending on the application or function of wall sheathing.

**Cost Impact:** The code change proposal will not increase the cost of construction. ICCFILENAME: CRANDELL-RB-1-R202-R602.3

### **Public Hearing Results**

#### **Committee Action: Approved as Modified**

##### **Modify the proposal as follows:**

**EXTERIOR WALL COVERING.** A material or assembly of materials applied on the exterior side of exterior walls for the purpose of providing a weather-resistive barrier, insulation or for aesthetics, including but not limited to, veneers, siding, exterior insulation and finish systems, architectural trim and embellishments such as cornices, soffits, and fascias, ~~gutters and leaders.~~

*(Portions of proposal not shown remain unchanged)*

**Committee Reason:** The committee feels this new language will be an added improvement and will distinguish between structural wall covering and exterior wall covering. The modification deletes gutters and leaders from the definition since they are not external wall coverings.

## Appendix B

### Public Comments as published in the ICC Final Action Agenda

#### Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

##### *Public Comment 1:*

**Dennis Pitts, American Wood Council & American Forest & Paper Association, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**R602.3 Design and construction.** Exterior walls of wood-frame construction shall be designed and constructed in accordance with the provisions of this chapter and Figures R602.3(1) and R602.3(2) or in accordance with AF&PA's NDS. Components of exterior walls shall be fastened in accordance with Tables R602.3(1) through R602.3(4). ~~When used as wall bracing in accordance with Section R602.10 or other structural framing purposes in accordance with this chapter, W~~ wall sheathing shall be fastened directly to framing members and, when placed on the exterior side of an exterior wall, shall be capable of resisting the wind pressures listed in Table R301.2(2) adjusted for height and exposure using Table R301.2(3). Wood structural panel sheathing used for exterior walls shall conform to the requirements of Table R602.3(3). Wall sheathing used only for exterior wall covering purposes shall comply with Section R703.

Studs shall be continuous from support at the sole plate to a support at the top plate to resist loads perpendicular to the wall. The support shall be a foundation or floor ceiling or roof diaphragm or shall be designed in accordance with accepted engineering practice.

**Exception:** Jack studs, trimmer studs and cripple studs at openings in walls that comply with Tables R502.5(1).

*(Portions of proposal not shown remain unchanged)*

**Commenter's Reason:** The proposed modifications further modify the change recommended for approval as modified by the IRC Committee. The proposal added a clause that limits the minimum fastening and resistance requirements for wall sheathing to only cases where the wall sheathing is being used as part of the wall bracing system per Section R602.10 or other undefined structural framing purposes in Chapter 6. Resisting out of plane wind forces is a major structural requirement on exterior sheathing. While the previous change did clarify some of the language in this section, it confused the issue of whether resistance of out-of-plane wind forces even need to be resisted by the exterior wall sheathing. This change clarifies that requirement while deleting an unnecessary reference to R602.10 in this section.

In addition, the previous change deleted a reference to the out-of-plane resistances provided in Table R602.3(3). This change proposed to reinsert that language while leaving the proposed language that permits exterior wall coverings to be designed per R703.

##### *Public Comment 2:*

**Edward L. Keith, APA, The Engineered Wood Association, requests Disapproval.**

**Commenter's Reason:** This code change requires only those areas of the wall that are used as bracing to be "capable of resisting wind pressures..." shown on the tables in Section R301.2.1.

The IRC bracing provisions permit distances of up to 21 feet between braced wall panels. That means that the same wind loads that are causing the lateral load on the structure and necessitating the use of braced wall panels may be ignored on these areas of the wall between the braced wall panels. This proposal provides a loop hole around the requirements of Section R301.2.1, reproduced below (important provisions are underlined for clarity):

**R301.2.1 Wind limitations.** *Buildings and portions thereof shall be limited by wind speed, as defined in Table R301.2(1) and construction methods in accordance with this code. Basic wind speeds shall be determined from Figure R301.2(4). Where different construction methods and structural materials are used for various portions of a building, the applicable requirements of this section for each portion shall apply. Where loads for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors are not otherwise specified, the loads listed in Table R301.2(2) adjusted for height and exposure using Table R301.2(3) shall be used to determine design load performance requirements for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors...*

The code, as quoted above, requires that all exterior surfaces of a structure be able to resist these wind loads – including

windows, doors and roof coverings. This proposal will provide an exception for the walls of the structure *if they do not contain bracing panels* by prescriptively permitting the use of non-structural sheathing such as foam insulation board. It is unreasonable to assume that the wind will act only on the braced wall panel locations! Note that the wall may use let-in bracing in some situations. In such a situation no area of the opaque wall has to be designed for wind as the proposed provision limits such inconveniences to areas of wall sheathing used as bracing. This proposal is seriously flawed by ignoring the life-safety consideration mandated by the IRC, not to mentioned the increased risk for property damage.

Section R301.1 contains the statement:

*Buildings and structures constructed as prescribed by this code are deemed to comply with the requirements of this section.*

The intent of this Section 301.1 is to permit methods with a proven history of adequate performance not to be required to meet the engineering requirements of the code. It is disingenuous to use these provisions to permit systems with known performance issues to be exempt from the structural requirements of the code. This is exactly what the proposed code change tries to do and what we hope to persuade you to block with this Public Comment.

Recent thunder storms in the Midwest (Evansville, Indiana and Southwest Missouri, areas of nominal 85 mph wind speed) have left countless houses stripped of siding and foam wall sheathing. In most cases the actual winds were well below the maximum design wind speeds. In some cases, only those walls sections containing the wall bracing panels provided any weather protection for the inside of the house (see photos below). Additional photos are available in the Spring and Summer issues of the 2008 Wood Design Focus.



Figure 1. – Foam and vinyl wall covering failure. (Storm damage – Southern IN, 2005)



Figure 2. – Foam and vinyl wall covering failure while wall bracing panel remains. (Storm damage, Springfield, MO, 2006)

Please note that the legacy codes, the ICC, as well as their corresponding product evaluation organizations have long required all structural products to meet all 3 of the following requirements:

- 1 They must be manufactured to proprietary or consensus based structural standards. These standards describe the minimum physical properties, testing criteria, and durability requirements that must be met by the material for its intended end use.
- 2 An established quality control program must be in place and supported by the manufacturer to insure that the minimum standards are being met by the production facility.
- 3 An approved third-party quality assurance inspection agency must be under contract to monitor the manufacturer's QC program and issue trademark stamps.

These requirements are designed to protect the public from unsafe construction. While foam insulation boards are manufactured to insulation standards, they meet none of the structural requirements specified for all other structural products. Unlike wood structural panels or structural fiberboard, foam insulation is not manufactured to any consensus-based structural product manufacturing standards. As such, the structural performance of foam sheathing is undefined and uncontrolled. Furthermore, the quality control and quality assurance programs adopted by the foam insulation manufacturers are limited to the control of insulation characteristics of the products, but not the structural performance. The use of non-structural sheathing for structural applications is a serious life-safety issue.

Sections R612.5 and R612.6 require the same level of protection for windows and doors as is required for wood structural panels and structural fiberboard products:

**R612.5 Performance.** *Exterior windows and doors shall be designed to resist the design wind loads specified in Table R301.2(2) adjusted for height and exposure per Table R301.2(3).*

**R612.6 Testing and labeling.** *Exterior windows and sliding doors shall be tested by an approved independent laboratory, and bear a label identifying manufacturer, performance characteristics and approved inspection agency to indicate compliance with AMA/WDMA/CSA*

101/I.S.2/A440... It is interesting to note that these requirements for windows and doors will be maintained in place while the walls are prescriptively permitted to be protected only by non-structural foam insulation that has none of the historic manufacturing safeguards in place. We used to hope that our windows and doors were as strong as our walls in a storm; this proposal effectively reverses this expectation!

We understand the rush to meet the up and coming energy requirements, however the building codes cannot sacrifice the health and safety of our families and friends to do so. The only solution that we can morally and ethically support is one that provides for both the safety and energy efficiency.

We urge overturning of the committee due to the serious flaw of the proposal in ignoring the important life-safety issue.

### *Public Comment 3:*

#### **T. Eric Stafford, representing Institute for Business and Home Safety, requests Disapproval.**

**Commenter's Reason:** We are requesting disapproval of RB102-09/10 due to several problems with the proposed language. The proposed language adds a new definition of exterior wall covering and attempts to discern a difference between "wall coverings" and coverings used for "structural" purposes. For wind design, all parts of the building are considered structural elements as the exterior wall covering are defined as components and cladding and have to be capable of transferring the external wind loads to the Main Wind-Force Resisting System (MWFRS). Accordingly, exterior wall coverings have to be designed for component and cladding loads.

Additionally, this table deletes the specific reference to Table R602.3(3) for attachment of wood structural panel sheathing in favor of referencing Section R703. Table R602.3(3) was added during the last code cycle to provide a prescriptive method for attaching wood structural panel sheathing to resist out-of-plane wind loads. This table was submitted by APA based on calculations of the panel and the attachment's ability to resist the applicable out-of-plane wind loads. Table R602.3(3) takes into account the panel span rating, wall stud spacing, panel nail spacing, wind speed, and exposure category – none of which is specifically considered in Table R703.4.

The proposed language is also inconsistent and will result in numerous misinterpretations. The new language states that when wall sheathing is used as bracing or other structural framing purposes, and placed on the exterior side of the wall, it has to be capable of resisting the wind pressures from Table R301.2(2) (component and cladding loads). However, if it qualifies as an exterior wall covering as proposed in the new language, attachment in accordance with Section R703 is permitted. This language is particularly inconsistent. If wall sheathing is placed on the exterior side of a wall, it should be capable of resisting the applicable wind pressures regardless of whether the sheathing is used as bracing or not. The proposed language is inconsistent and conflicting with itself. As written it could result in misinterpretations and confusion.

## Appendix C – Detailed Analysis of Public Comments

### **Analysis of PC#1 (AF&PA):**

Public Comment #1 by AF&PA is a clarification which prevents an unlikely interpretation that some sheathing applications require wind pressure resistance while others don't. While such an interpretation would be contradictory to several other requirements of the IRC (see Introduction), the proposed language in PC#1 makes it clearer that all wall sheathing in accordance with Chapter 6 applications must be capable of resisting design wind pressures. PC#1 presents a simple solution that addresses this same concern expressed in PC#2 and PC#3 which do not offer a solution, but rather requested disapproval of the original proposal as modified and approved by the IRC CDC with a unanimous vote (11-0).

The only reservation with PC#1 is minor in nature and does not warrant opposition to PC#1. This reservation stems from the fact that all sheathing materials addressed in Chapter 6 have fastening schedules that are intended to resist wind pressures. Singling out a reference in Section R602.3 for only those requirements which apply to wood structural panels (Table R602.3(3)) is inappropriate or incomplete and also redundant. It is inappropriate because such a partial reference to requirements for only one type of sheathing implies that all other types of sheathings addressed in Chapter 6 do not have appropriate fastening requirements for any wind condition. It is redundant because the specific requirements are applied later in the chapter for each specific sheathing type addressed within the scope of Chapter 6. However, this concern exists in the current code language and is predominantly an editorial matter related to consistent referencing of requirements for all similar materials. It is not a major concern in the original RB102-09/10 proposal.

Overlooking the one minor reservation regarding PC#1 mentioned above, PC#1 does provide an additional clarification to the original RB102-09/10 proposal approved as modified at the first hearing. PC#1 also resolves the related concerns raised in PC#2 and PC#3. Thus, the FSC recommends support of PC#1 as a further modification to the RB102-09/10 proposal approved as modified by the IRC CDC by 11-0 vote.

### **Analysis of PC#2 (APA):**

Public Comment #2 requests disapproval for reasons that are more effectively resolved by PC#1 and which does not result in the "baby being thrown out with the bath water". PC#2 claims that RB102-09/10 creates a "loop hole" whereby sheathing materials could indiscriminately avoid having to comply with wind pressure requirements. For reasons stated in the Introduction and referenced building code requirements viewed in whole, labeling the proposal as a "loop hole" is clearly not justified. Whether a sheathing is used for bracing and structural framing purposes in Chapter 6, as an exterior wall covering only per Chapter 7, or both, the code requires wind pressures to be resisted in Chapters 3, 6, and 7. There simply is no loop-hole as claimed and there is no intent to allow any exterior wall sheathing material to avoid having to comply with wind pressure resistance requirements.

Unfortunately, the reason statement given with PC#2 did not end with the above concern which is effectively addressed by PC#1. It continued to raise other concerns beyond the scope and intent of RB102-09/10. In particular, it makes several claims against foam sheathing (one type of sheathing addressed in Chapter 7 of the IRC). These claims deserve a thoughtful and studied response to avoid unnecessary confusion. Three specific and representative claims made in the reason statement for PC#2 by APA are addressed as follows:

**APA Claim #1** – *“It is disingenuous to use these provisions to permit systems with known performance issues to be exempt from the structural requirements of the code.”*

First, it would indeed be disingenuous for anyone to permit a material to be used in such a manner. This concern, if it were true, applies irrespective of the type of sheathing material. The problem with this statement is that it does not apply to RB102-09/10. For reasons given in the Introduction and the referenced building code requirements for wind pressure resistance, RB102-09/10 improves clarity of wind pressure requirements for exterior sheathing materials used in Chapter 6 and also those used in Chapter 7 of the IRC. RB102-09/10 does not create a disingenuous exemption to avoid wind pressure requirements for any sheathing material as claimed.

**APA Claim #2** – *“Recent thunderstorms in the Midwest (...areas of nominal 85mph wind speed) left countless houses stripped of siding and foam wall sheathing.”*

This claim is presented without a complete perspective of the cause and effects involved in the wind damage to siding and foam sheathing as depicted in two figures (photos) provided in the reason statement to PC#2. First, in Figure 1 the damage to foam sheathing and vinyl siding from a gable end-wall is not mentioned as being non-compliant installation with regard to IRC 2009 R702.11.2 provision which addresses such problems. Just as changes were made after Hurricane Andrew to address significant defects in code requirements for wood structural panel installation (where 70 percent of homes lost one or more panels of wood structural panel sheathing), the requirements in Section R702.11.2 of the 2009 IRC effectively address the problems shown in the figures. Thus, the conclusion APA makes from these figures do not follow the complete set of facts.

Furthermore, changes recently approved by the IRC CDC at the first hearing (see FS156-09/10 Part 2) make significant additional improvements to ensure wind pressure resistance and siding performance of wall assemblies with foam sheathing. Oddly, APA has opposed the addition of these requirements which strengthen the building code and which address the concerns they raise with their PC#2 to RB102-09/10.

Finally, there appear to be other unmentioned contributing factors that are not properly presented with the photographs and discussion included with PC#2. For example, the tree in the background of Figure 1 shows branches to have been torn off and leaves completely stripped. This type of damage to trees is indicative of wind speeds much above design level or “nominal 85 mph wind speed” as curiously suggested by APA. Similarly, in the second photograph there are significant debris impacts including a piece of framing material penetrating the wood structural panel corner bracing. Again, these conditions are indicative of tornado or down-burst types of wind speeds well above design level. It is disingenuous to present such selective evidence (photos) in such a “slanted” or incomplete manner and it seems to presume that the ICC voting members are gullible. The FSC does not believe this to be the case.

**APA Claim #3** – *“While foam insulation boards are manufactured to insulation standards, they meet none of the structural requirements specified for all other structural materials.” [underlining in the original]*

This above claim misrepresents that foam sheathing meets “none of the structural requirements”. First, foam sheathing is currently manufactured and subject to third-party inspection and QC with respect to structural properties, such as bending strength tests as a requirement in the code-referenced “insulation standards”. These standardized structural properties (including bending strength and compressive strength) are in addition to insulating properties included in the code-referenced standards for these materials. These requirements are easily referenced in ASTM

C578 and ASTM C1289. Thus, structural properties of the insulating materials are indexed and monitored in the referenced “insulation standards”.

In addition, an extensive full-scale wind pressure testing program has been conducted as further verification of wind pressure resistance (structural) capabilities of the various foam sheathing products manufactured and third-party inspected to the above mentioned standards (see reports at [www.foamsheathing.org](http://www.foamsheathing.org) and also code proposal FS156-09/10). These tests were conducted at the NAHB Research Center’s IAS certified laboratory. The findings show substantial wind-pressure resistance of foam sheathing, in many cases exceeding that of other common structural sheathing materials depending on thickness. The findings also indicate the need for some improvements (as would be expected in such an extensive evaluation of nearly any material in the code). To ensure these structural properties are properly implemented and to provide appropriate use requirements and limitations for foam sheathing, the FSC has prepared proposals in the past ICC code development cycle and in the current code development cycle (see proposal FS156-09/10).

Oddly, APA has continued to oppose and obstruct FSC’s progress in strengthening the code with respect to applications involving foam sheathing. Interestingly, in RB102-09/10, Public Comment #2, they are asking for denial of the proposal because of a concern with needed improvements; and in another proposal by FSC (see FS156-09/10) they are opposing the introduction of the same needed improvements to the code.

For the above reasons, the FSC recommends that you oppose Public Comment #2 by APA and support the original RB102-09/10 proposal as modified and approved by the IRC CDC at the first code development hearing by a 11-0 vote and as further modified by PC#1. Also, please refer to the FSC’s relevant Tech Matters on FS156-09/10 which addresses foam sheathing wind pressure resistance and siding attachment requirements in a rational, science-based manner. Your support of FS156-09/10 is also recommended as a strengthening of code requirements for foam sheathing when used as part of an exterior wall covering assembly.

### **Analysis of PC#3 (IBHS):**

The concerns raised in this PC#3 have been addressed in the analysis of PC#1. Thus, the interpretation concern brought forward in PC#3 is addressed by the solution provided in PC#1.