

<p style="text-align: center;">Agenda Item VI.</p>

State of Oregon

Board memo

Building Codes Division

July 1, 2009

To: Residential Structures Board

From: Richard S. Rogers
Structural Program Chief

Subject: Board concurrence – Oregon Residential Specialty Code Section R703.1

Action requested:

The Building Codes Division requests that the board approve a motion concurring with the hearing officer's recommendation to further modify ORSC section R703.1 and approve the proposed amendment for final adoption, effective October 1, 2009.

History:

A code change proposal was referred by the Building Codes Division to the Residential Structures Board (RSB) for review. The recommendations for approval to proceed to hearing were presented to the RSB on April 1, 2009. The RSB concurred with the division's recommendations and the hearing notice was filed April 10, 2009 with public hearing being held on May 19, 2009.

The over-all purpose of the proposed amendments to the 2008 Oregon Residential Specialty Code (ORSC) was to clarify the performance expectation of new model code language requiring a "means of draining water that enters the [exterior wall] assembly to the exterior." The amendments clarify that in order to provide a means of drainage, either a gap of at least 1/8-inch must be provided between the water resistive barrier and the exterior veneer or, as an alternative, a water resistive barrier manufactured to enhance drainage must be used. When the enhanced water resistive barrier is used as an alternative to the 1/8 inch gap, the barrier must meet a 75-percent drainage efficiency requirement of ASTM E2273 or other recognized national standards.

The Hearings Officer is recommending that R703.1 be further modified as follows based on written testimony received during the public hearing:

- Testimony recommended deleting references to ICC-ES Acceptance Criteria and limits the language to stay consistent with relevant national standards.
- ASTM E2273 defines the drainage metric as "drainage efficiency." Testimony editorially offered that "efficiency drainage" should read "drainage efficiency".

- Instead of “...or other approved testing protocols” testimony editorially offered “or other recognized national standards”.

***Testimony Rationale:** “The ICC-ES Acceptance Criteria are the bridge to the building code. Referencing an ICC-ES Acceptance Criteria within the building code seems circular in nature and has not been done in the 2006 International Residential Code®. Per the ICC-ES website, ‘Acceptance criteria are developed for use solely by ICC-ES for purposes of issuing ICC-ES evaluation reports. They are available to the public as a courtesy to ICC-ES report applicants and to testing laboratories and inspection agencies that provide services to applicants. Acceptance criteria are not for use outside of the ICC-ES system.’ We highly recommend staying with recognized national standards germane to wall drainage efficiency.”*

- Testimony recommended the addition of a new exception in Section R703.1;

“A space is not required where the exterior veneer is manufactured in a manner to enhance drainage and meets the 75% drainage efficiency requirement of ASTM E2273 or other recognized national standards and is installed over a water resistive barrier complying with section R703.2.”

***Testimony Rationale:** “The addition of this exception opens the path for innovation in the exterior veneer product segment, encouraging exterior veneer companies to engineer products that can meet the same drainage requirements allowed to water-resistive barrier manufacturers, drainage mat manufacturers, and drainage board manufacturers.”*

Options:

- Approve a motion concurring with the hearing officer's findings and approving the proposed code amendment for final adoption with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.
- Request amendments to the proposal and approve a motion concurring with the hearing officer's findings and approving the proposed code amendment for final adoption with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.
- Reject the proposed code amendment.

Recommendation:

The division recommends that the board concur with the hearing officer's findings and approve the proposed code amendment for final adoption.

Note: The following page shows the changes to the code. [Attachment A](#) at the end of the packet shows the same changes to the administrative rules

Summary of proposed code changes to R703.1 with accepted recommendations:
(Single underline denotes addition to model code. Strike through denotes deletion to model code. Double underline denotes accepted changes resulting from public hearing)

~~**R703.1 General.** Exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing as described in Section R703.8. The exterior wall envelope shall be designed and constructed in a manner that prevents the accumulation of water within the wall assembly by providing a water resistant barrier behind the exterior veneer as required by Section R703.2 and a means of draining water that enters the assembly to the exterior. Protection against condensation in the exterior wall assembly shall be provided in accordance with Chapter 11 of this code.~~

R703.1.1 Exterior Wall Envelope. To promote building durability, the exterior wall envelope shall be installed in a manner that water that enters the assembly can drain to the exterior. The envelope shall consist of an exterior veneer, a water-resistive barrier (wrb) as required in R703.2, a minimum 1/8" (3mm) space between the wrb and the exterior veneer, and integrated flashings as required in R703.8. The required space shall be formed by the use of any non-corrodible furring strip, drainage mat or drainage board.

The envelope shall provide proper integration of flashings with the water-resistive barrier, the space provided and the exterior veneer. These components, in conjunction, shall provide a means of draining water that enters the assembly to the exterior.

Exceptions:

- 1. A space is not required where the exterior veneer is installed over a water-resistive barrier complying with section R703.2 which is manufactured in a manner to enhance drainage and meets the 75% drainage efficiency requirement of ASTM E2273 or other recognized national standards.**
- 2. A space is not required where the exterior veneer is manufactured in a manner to enhance drainage and meets the 75% drainage efficiency requirement of ASTM E2273 or other recognized national standards and is installed over a water resistive barrier complying with section R703.2**
- 3. A space is not required where the exterior veneer is matching an existing exterior finish as in additions, alterations, or repairs.**
- A water-resistant exterior wall envelope shall not be required over concrete or masonry walls designed in accordance with Chapter 6 and flashed according to section R703.7 or R703.8.
- Compliance with the requirements for a means of drainage, and the requirements of Section R703.2 and Section R703.8, shall not be required for an exterior wall

envelope that has been demonstrated to resist wind-driven rain through testing of the exterior wall envelope, including joints, penetrations and intersections with dissimilar materials, in accordance with ASTM E 331 under the following conditions:

- 5.1. Exterior wall envelope test assemblies shall include at least one opening, one control joint, one wall/eave interface and one wall sill. All tested openings and penetrations shall be representative of the intended end-use configuration.
- 5.2. Exterior wall envelope test assemblies shall be at least 4 feet (1219 mm) by 8 feet (2438mm) in size.
- 5.3. Exterior wall assemblies shall be tested at a minimum differential pressure of 6.24 pounds per square foot (299 Pa).
- 5.4. Exterior wall envelope assemblies shall be subjected to a minimum test exposure duration of 2 hours.

The exterior wall envelope design shall be considered to resist wind-driven rain where the results of testing indicate that water did not penetrate: control joints in the exterior wall envelope; joints at the perimeter of openings penetration; or intersections of terminations with dissimilar materials.