1) Name: Robby Schwarz  
   Date: 3/25/2019  
   Click or tap here to enter text.

2) Proposals should be drafted in Word with the only formatting that is needed being BOLDING, STRIKEOUT, AND UNDERLINING. Please do not provide additional formatting such as tabs, columns, etc.

Please use a separate form for each proposal submitted.

Is separate graphic file provided (Yes or No):

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Code Name</th>
<th>Acronym</th>
<th>Code Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBC</td>
<td>International Building Code</td>
<td>IRC</td>
<td>International Residential Code</td>
</tr>
<tr>
<td>IEBC</td>
<td>International Existing Building Code</td>
<td>IMC</td>
<td>International Mechanical Code</td>
</tr>
<tr>
<td>IFC</td>
<td>International Fire Code</td>
<td></td>
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</tbody>
</table>

AMENDMENT PROPOSAL

Please provide all of the following items in your amendment proposal.

<table>
<thead>
<tr>
<th>Code Sections/Tables/Figures Proposed for Revision:</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRC Section - <strong>R702.7.3 Minimum clear airspaces and vented openings for vented cladding.</strong></td>
</tr>
</tbody>
</table>

**Note:** If the proposal is for a new section, indicate (new).

**Proposal:**

**R702.7 Vapor retarders.** Class I or II or III vapor retarders are required on the interior side of frame walls in Climate Zones 5, 6, 7, 8 and Marine 4.

**Exceptions:**
1. Basement walls.
2. Below-grade portion of any wall.
3. Construction where moisture or its freezing will not damage the materials.

**R702.7.1 Class III vapor retarders.** Class III vapor retarders shall be permitted where any one of the conditions in Table R702.7.1 is met.

**R702.7.2 Material vapor retarder class.** The vapor retarder class shall be based on the manufacturer’s certified testing or a tested assembly.

The following shall be deemed to meet the class specified:
1. Class I: Sheet polyethylene, on perforated aluminum foil.
2. Class II: Kraft-faced fiberglass batts.
3. Class III: Latex or enamel paint.

**R702.7.3 Minimum clear airspaces and vented openings for vented cladding.** For the purposes of this section, vented cladding shall include a minimum clear airspace that is greater than or equal to 3/16”.
of an inch, the following minimum clear air spaces. Other openings with the equivalent vent area shall be permitted.

1. Vinyl polypropylene or horizontal aluminum siding applied over a weather-resistant barrier as specified in Table R703.3(1).
2. Brick veneer with a clear airspace as specified in Table R703.8.4.
3. Other approved vented claddings.

Note: Show the proposal using strikethrough, underline format. At the beginning of each section, one of the following instruction lines are also needed:

- Revise as follows
- Add new text as follows
- Delete and substitute as follows
- Delete without substitution

Supporting Information:

Reason Statement:

This proposal was brought to the 2021 IRC committee action hearings and will be brought back for public comment.

Specifically, for Denver’s dry climate zone 5 it is an issue that class III vapor retarders are not being used more as Class I retarders tend to trap moisture in the wall assembly. Section R702.7 simply is bringing Class I retarders up into the consciousness of the building community so that they realize that a vapor retarder is required but they have a choice between three that can be used and the decision should be based on the construction type, not a code default.

Class III vapor retarders must be installed with a clear air space to the outside so the table in this section was not changed. Section R702.7.1 is included in this proposal merely to point out the need for assembly construction when using a class II vapor retarder.

Section R402.7.3 Minimum clear airspaces and vented openings for vented cladding do not match the code language below which is defining vented cladding. It appears that vented cladding is being used as an example of what minimum clear air spaces are but it is very confusing and most are unclear what the section is trying to do. If vented cladding needs to be defined a new section should be created to do so. In my opinion, it does not need to be defined, but the minimum clear airspace certainly does. However, at the recent code hearings, the industry had no issue with the defined air gap but requested that the examples be added back which has been done in this proposal.

As we know vapor retarders are designed to stop or limit the amount of moisture that can diffuse into a building assembly. They, however, do not stop moisture that moves with air and science has determined that 90 plus percent of the moisture that enters our building assemblies gets there via air leakage vs. vapor diffusion. Therefore, our concern regarding trapping moisture in assemblies and the drying potential of the assemblies we build is on the rise. With that in mind, this proposal is striving to attain two things. First, a realization that the choice of vapor retarder that is used should be based on the structure and the climate that structure is built in. We should dictate that a vapor retarder is installed, but not proclaim that only one type is best for a specific climate zone. Second, specifically, when class three vapor retarders are used it has been shown that the vented space does not need to be more than 3/16 of an inch. The structure of the code does not call out the size of the vented opening which is causing builders

November 15, 2005
to be forced to use class one and two vapor retarders when class three retarders would actually be the best choice for their climate and structure. This occurs because jurisdictions do not have better guidance that some examples of gaps size that is currently given in the code. This is especially true in dry climate zones but is an issue everywhere.

In Joe Lstiburek’s article titled “Wufi – Barking up the Wrong Tree” he demonstrates that wood siding that is installed over a 3/16” gap has air movement behind it that is equivalent to approximately 20 air changes per hour. See table 2 cladding ventilation/sheathing ventilation. Lstiburek continues in his article titled, “Hockey Pucks and Hydrostatic Pressure” to demonstrate the “you need to install wood siding and trim over a small gap to control hydrostatic pressure. This gap can be as small as ¼” and the spacer can be a strip of thin foam” such as sill seal which is what is pictured in the photographs that accompany the paper.

**Note:** The following items are required to be included:

**Purpose:** The proponent shall clearly state the purpose of the proposed amendment to physical, environmental and customary characteristics that are specific to the City and County of Denver (e.g., clarify the Code; revise outdated material; substitute new or revised material for physical, environmental and customary characteristics; add new requirements to the Code; delete current requirements, etc.)

**Reasons:** The proponent shall justify changing the current Code provisions, stating why the proposal is necessary to reflect physical, environmental and customary characteristics that are specific to the City and County of Denver. Proposals that add or delete requirements shall be supported by a logical explanation which clearly shows why the current does not reflect physical, environmental and customary characteristics that are specific to the City and County of Denver and explains how such proposals will improve the Code.

**Substantiation:** The proponent shall substantiate the proposed amendment based on technical information and substantiation. Substantiation provided which is reviewed and determined as not germane to the technical issues addressed in the proposed amendment shall be identified as such.

**Bibliography** (as needed): The proponent shall submit a bibliography when substantiating material is associated with the amendment proposal. The proponent shall make the substantiating materials available for review.

**Referenced Standards:**

BSD-106: Understanding Vapor Barriers
Joseph Lstiburek

BSI-089: Wufi – Barking up the Wrong Tree

BSI-057: Hockey Pucks and Hydrostatic Pressure

RR-0999: Drainage Planes and Air Spaces

You don’t need a Vapor Barrier
Energy Vanguard

*November 15, 2005*
### Are Vapor Barriers Required or Recommended?

**BY JUAN RODRIGUEZ** Updated December 30, 2018


List any new referenced standards that are proposed to be referenced in the code.

<table>
<thead>
<tr>
<th>Impact:</th>
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<tbody>
<tr>
<td>Cost Statement:</td>
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<tr>
<td>There are no construction cost increases associated with the clarification and flexibility that are achieved through this code change proposal</td>
</tr>
</tbody>
</table>

*Note: The proponent shall indicate one of the following regarding the impact of the amendment proposal:*

- The effect of the amendment proposal on the cost of construction; Increase, Reduce, No Effect:
- The effect of the amendment proposal on the cost of design; Increase, Reduce, No Effect:
- Is the amendment proposal more- or less-restrictive than the I-Codes; More, Less, Same:

<table>
<thead>
<tr>
<th>Departmental Impact:</th>
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<tbody>
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<td>Click or tap here to enter text.</td>
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*Note: Indicate one of the following regarding the impact of the amendment proposal:*

- The effect of the amendment proposal on the cost of review; Increase, Reduce, No Effect:
- The effect of the amendment proposal on the cost of enforcement/inspection; Increase, Reduce, No Effect: