DENVER AMENDMENT PROPOSAL FORM
FOR CPD INTERNAL PROPOSALS TO THE 2016 DENVER BUILDING CODE AMENDMENTS AND THE 2018 INTERNATIONAL CODES

2018 CODE DEVELOPMENT CYCLE

1) Name: David Renn, PE, SE  Date: 3/22/2019

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 ☒ No

<table>
<thead>
<tr>
<th>Acronym</th>
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<tbody>
<tr>
<td>DBC-xxx</td>
<td>Denver Building Code–xxx code base</td>
<td>IMC</td>
<td>International Mechanical Code</td>
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AMENDMENT PROPOSAL

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

Code Sections/Tables/Figures Proposed for Revision:
IRC R302.2.2

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

Proposal:

Revise as follows

R302.2.2 Common walls. Common wall separating townhouses shall be assigned a fire-resistance rating in accordance with Item 1 or 2.2 and shall be rated for fire exposure from both sides. Common walls shall extend to and be tight against the exterior sheathing of the exterior walls, or the inside face of exterior walls without stud cavities, and the underside of the roof sheathing. The common wall shared by two townhouses shall be constructed without plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be in accordance with Chapters 34 and 43. Penetrations of the membrane of common walls for electrical outlet boxes shall be in accordance with Section R302.4.

1. Where a fire sprinkler system in accordance with Section P2904 is provided, the common wall shall be not less than a 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.3 of the International Building Code.
2. Where a fire sprinkler system in accordance with Section P2904 is not provided, the common wall shall be not less than a 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.3 of the *International Building Code*.

**Exception:** Common walls are permitted to extend to and be tight against the inside of the exterior walls if the cavity between the end of the common wall and the exterior sheathing is filled with a minimum of two two-inch nominal thickness wood studs.

**Note:** Show the proposal using *strikeout*, *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:**

This proposal adds a new Denver amendment to address a common wall construction type that is used for nearly all townhouse projects in Denver but isn’t specifically addressed in the IRC. Without a specific requirement for this type of wall there is a potential fire safety issue of fire spread from one unit to another that this proposal addresses. Also, the IRC wording for the extent of a common wall is open for interpretation and this has caused issues in the field where inspectors have interpreted this differently than plan reviewers, leading to unnecessary delays in construction. This proposal will add clarity for designers, reviewers and inspectors to avoid these types of issues. It should be noted that I have also submitted this proposal to the ICC for the 2021 IRC and it will be considered by committee at the end of April 2019.

The IRC currently allows a townhouse common wall to stop at the exterior wall, which can create a path for a fire to spread from one townhouse to the next through the exterior wall. The typical common wall construction in Denver is two layers of gypsum board in metal H-studs that are connected to stud walls on either side for stability only, with a gap between the gypsum board and the stud walls. With the gap in this configuration there is a path a fire can take that is only protected by two layers of ½” non-classified gypsum board (or other sheathing) – one on the stud wall adjacent to the common wall on the fire side and one on the same wall of the adjacent townhouse. Two layers of ½” gypsum board only provide approximately 30 minutes of fire protection until a fire can spread to the next townhouse. See figure below for clarification of this type of common wall construction.

This proposal requires common walls to continue to the exterior sheathing of the exterior wall, which will eliminate the path of fire described above and will provide the intended fire rating duration of the common wall. For solid exterior walls, such as concrete or masonry, this proposal allows common walls to stop at the inside face since a path for fire to spread from townhouse to townhouse doesn’t exist in a solid exterior wall. The exception allows (2) 2x wood studs to be used to extend the common wall through the exterior wall stud cavity. Typical wood studs have a char rate of approximately 1.5” per hour, so this provides the required fire-resistance rating of the common wall.
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:**

None.

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

**Impact:**

This proposal may reduce the cost of construction and design since it brings clarity to the code and reduces room for interpretation, which leads to less re-design and fewer field fixes. This proposal is slightly more restrictive than the I-Codes.

Note: The proponent shall discuss the impact of the proposed amendment and indicate one of the following for each point below regarding 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

**Departmental Impact:**

This proposal may reduce the cost of review and inspection since it brings clarify to the code and reduces room for interpretation.

Note: The proponent shall discuss the impact of the proposed amendment and indicate one of the following for each point below regarding 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