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: 3/18/2019

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

AMENDMENT PROPOSAL

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

**Code Sections/Tables/Figures Proposed for Revision:**
DBC-IBC Table 705.8

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

Delete without substitution

Table 705.8 Maximum area of exterior wall openings based on fire separation distance and degree of opening protection is revised as stated below:

Table 705.8 remains as shown except as noted below:

Table 705.8 Maximum area of exterior wall openings based on fire separation distance and degree of opening protection, Fire separation distance rows “5 to less than 10” and “10 to less than 15”, are replaced, footnote 1 is added, and definitions “P, NS” and “P, S” are added (portions of table not shown do not change):

<table>
<thead>
<tr>
<th>FIRE SEPARATION DISTANCE (feet)</th>
<th>DEGREE OF OPENING PROTECTION</th>
<th>ALLOWABLE AREA*</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to less than 10$^\text{ef}$</td>
<td>Unprotected, Nonsprinklered (UP, NS)</td>
<td>10%$^\text{e}$</td>
</tr>
<tr>
<td></td>
<td>Unprotected, Sprinklered (UP, S)$^{\dagger}$</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>Protected, Nonsprinklered (P, NS)</td>
<td>25%$^\text{f}$</td>
</tr>
<tr>
<td></td>
<td>Protected, Sprinklered (P, S)</td>
<td>25%$^\text{g}$</td>
</tr>
<tr>
<td>10 to less than 15$^\text{efg}$</td>
<td>Unprotected, Nonsprinklered (UP, NS)</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Unprotected, Sprinklered (UP, S)$^{\dagger}$</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>Protected, Nonsprinklered (P, NS)</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>Protected, Sprinklered (P, S)</td>
<td>45%$^\text{h}$</td>
</tr>
</tbody>
</table>

P, NS — Openings protected with an opening protective assembly in accordance with Section 705.8.2 in buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

P, S — Openings protected with an opening protective assembly in accordance with Section 705.8.2 in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

$^{\dagger}$ Allowable area may be increased to 50% where openings are protected with water curtains designed to distribute 3 gpm per linear foot of wall opening with sprinklers placed at the ceiling 6 to 12 inches from the wall and 6 feet on center; see NFPA 13 “Water Curtains” for design requirements.

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 is to delete Denver’s amendments to IBC Table 705.8 since these amendments are not related to any physical, environmental or customary characteristics that are specific to the City and County of Denver. Furthermore, these amendments are less restrictive than the IBC and there is no justification to reduce the requirements of the IBC.

The main impact of Denver’s amendments is to allow the maximum area of exterior wall openings to increase for fire separation distance (FSD) of 5’ to less than 15’ where building is sprinklered and openings are protected with water curtains. The IBC limits protected openings to 25% and 45% for this same range of FSD and does not allow an increase for fire curtains.

A review of previous Denver amendments reveals that this 50% opening limitation with water curtains originated in the 1993 Denver amendments to the 1991 Uniform Building Code and has been carried forward since. The 1991 UBC exterior wall opening requirements simply had distances where openings were not permitted, where openings had to be protected with a 50% limitation, and where unlimited unprotected openings are allowed. Denver’s 1993 amendment allowed sprinkler protection instead of ¾ hour protected openings but did not have the 50% limit since this was part of the base code. With the introduction of the I-codes, the opening limitations for exterior walls changed dramatically and have been refined to have many different limitations on percentage of openings allowed, and these changes account for the latest research and have been approved through a consensus process. However, Denver amendments to the I-codes carried forward the single 50% limit with water curtains from the amendments to the UBC.

Denver’s amendments to Table 705.8 are less restrictive than the IBC and there is no justification for Denver to have opening requirements that are different than the IBC, especially considering the IBC has multiple opening percentages instead of the single 50% limit in the UBC that these amendments originated from.

Note that this proposal will not affect existing buildings that have used the previous amendment with water curtain protection. Where a change of occupancy is made to an equal or lesser-hazard category, IIBC 1011.6.2 requires that existing exterior walls and openings to be accepted. Where a change of occupancy is made to a higher-hazard category, IIBC 1011.6.1 requires exterior walls to have fire resistance and opening protective as required by the IBC; however, IIBC 1011.6.3 allows protected openings to be up 50% of the total wall area, which is the same as the previous amendment. Also, the exception to IBC 705.8.2 allows water curtain protection to be used in lieu of opening protective, so water curtain protection would still be considered to be a protected opening.

Bibliography:

2. *Amendments to the 1991 Uniform Codes of the International Conference of Building Officials (ICBO) for the City and County of Denver*, as published by the City and County of Denver

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 could result in a slight increase in the cost of construction resulting from a smaller percentage of openings being allowed – for example, an opening in a wall that was previously allowed with water curtains would be changed to a fire-resistance rated wall. This proposal removes a less-restrictive amendment resulting in the same requirements as 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 should reduce the cost of review since the water curtain opening protection would no longer be allowed, resulting in smaller deferred sprinkler submittals. The sprinkler review would also require less coordination with the original submittal since it would not be necessary to verify that required water curtain opening protection is carried through on deferred sprinkler submittals. Cost of inspection is also reduced due to the deletion of the water curtain protection.

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