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: Street Schellhase, PE street.schellhase@denvergov.org Date: February 20, 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>
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<tbody>
<tr>
<td>DBC-IBC</td>
<td>Denver Building Code–IBC base</td>
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<td>DBC-IEBC</td>
<td>Denver Building Code–IEBC base</td>
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<td>DBC-xxx</td>
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<td>IBC</td>
<td>International Building Code</td>
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<td>IECC</td>
<td>International Energy Conservation Code</td>
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<td>IMC</td>
<td>International Mechanical Code</td>
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<td>IEBCC</td>
<td>International Existing Building Code</td>
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<td>IFC</td>
<td>International Fire 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:

DBC-IBC 1609.1.1.2

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

Proposal:
Delete without substitution:

Section 1609.1.1.2 Reduction for air density is added:

1609.1.1.2 Reduction for air density: In calculating velocity pressures using Eq. 27.3-1, 28.3-1, 29.3-1 and 30.3-1 in ASCE 7, the numerical constant, 0.00256, may be reduced to account for air density. Any reduction shall comply with ASCE 7, Section C27.3-2, but in no case shall the reduction in the numerical constant exceed fifteen percent.

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:

Purpose: Delete an amendment to IBC Section 1609 that has become superfluous.
Reasons: The amendment has become superfluous because a provision for calculating the air density reduction using $Ke$, the ground elevation factor, has been added to ASCE 7-16 Section 26.9, the design standard referenced by IBC 1609.

Substantiation: A similar method of calculating a reduction in air density was previously in Section C27.3.2 of the ASCE 7-10 Commentary and was referenced by the amendment. Therefore, the air density reduction factor calculated in accordance with Section 26.9 will result in design wind pressures similar to those calculated in accordance with the current amendment. The air density reduction limit of 15 percent per the amendment is not included in Section 26.9; however, the calculated air density is a function of the elevation above sea level, so the air density reduction in Denver would vary from 17 percent to 19 percent when calculated in accordance with Section 26.9. The wind pressure is directly proportional to the air density, so the reduction in design wind pressure would also vary from 17 to 19 percent. The 15% reduction limit was recommended by either the SEAC wind or code liaison committee as a safeguard since the air density reduction was in the ASCE 7 commentary, not the code provisions. There was concern that an engineer might try to use a different method that could give a reduction greater than the ASCE method. There is no longer a justification for arbitrarily capping the air density reduction now that a calculation procedure is provided in the body of the code.

Bibliography: ASCE 7-16, Sections 26.9 and C26.9

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:

**Neutral – a provision that is similar to the amendment has been incorporated into the model code**

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:

**Customer submittals will be more likely to comply since the provision is now in the model code.**

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