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

2018 CODE DEVELOPMENT CYCLE

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Date: March 11, 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.

Is separate graphic file provided? ☐ Yes ☒ No

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Code Name</th>
<th>Acronym</th>
<th>Code Name</th>
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</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 1609.3

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

Proposal:

Revise as follows:

Section 1609.3 Ultimate Basic design wind speed is replaced with the following, subordinate section to remain:

1609.3 Ultimate Basic design wind speed. The ultimate basic design wind speed, \( V_u \), and the basic wind speed to be used in the provisions of ASCE 7, \( V_c \) for the determination of the wind loads shall be as follows:

Risk Category II buildings and structures: 115 miles per hour for all areas in the City and County of Denver located east of a line defined as the centerline of Federal Boulevard. For areas located west of the centerline of Federal Boulevard, the wind speed shall be interpolated between the contours as defined in the report titled “Colorado Front Range Gust Map – ASCE 7-10 Compatible dated November 18, 2013, in which the 115 mph contour is located along the centerline of Federal Boulevard, the 125 mph contour is located along the centerline of Sheridan Boulevard, and the 150 mph contour is located along the centerline of Kipling Boulevard.

Risk Category III and IV buildings and structures: 120 miles per hour for all areas in the City and County of Denver located east of a line defined as the centerline of Federal Boulevard. For areas located west of the centerline of Federal Boulevard, the wind speed shall be interpolated between the contours as defined in the report titled “Colorado Front Range Gust Map – ASCE 7-10 Compatible” dated November 18, 2013, in which the 120 mph contour is located along the centerline of Federal Boulevard, the 135 mph contour is located along the centerline of Sheridan Boulevard, and the 150 mph contour is located along the centerline of Kipling Boulevard.

Risk Category IV buildings and structures: 125 miles per hour for all areas in the City and County of Denver located east of a line defined as the centerline of Federal Boulevard. For areas located west of the centerline of Federal Boulevard, the wind speed shall be interpolated between the following wind speed contours: the 125 mph contour is located along the centerline of Federal Boulevard, the 140 mph contour is located along the centerline of Sheridan Boulevard, and the 155 mph contour is located along the centerline of Kipling Boulevard.

Risk Category I buildings and structures: 105 miles per hour for all areas in the City and County of Denver located east of a line defined as the centerline of Federal Boulevard. For areas located west of the centerline of Federal Boulevard, the wind speed shall be interpolated between the following wind speed contours: the 105 mph contour is located along the centerline of Federal Boulevard, the 120 mph contour is located along the centerline of Sheridan Boulevard, and the 140 mph contour is located along the centerline of Kipling Boulevard.
between the contours as defined in the report titled “Colorado Front Range Gust Map – ASCE 7-10 Compatible” dated November 18, 2013, in which the 105 mph contour is located along the centerline of Federal Boulevard, the 120 mph contour is located along the centerline of Sheridan Boulevard, and the 130 mph contour is located along the centerline of Kipling Boulevard.

The centerlines of Federal Boulevard, Sheridan Boulevard, and Kipling Boulevard, are assumed to be projected to the north and south boundaries of the City and County of Denver.

**Note:** Show the proposal using *underlined* 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:** Revise wind speed terminology and provide separate wind speed design criteria for Risk Categories III and IV

**Reasons:** Correlate wind speed terminology with 2018 IBC/ASCE 7-16 terminology. Recognizes that a higher reliability is required for Risk Category IV buildings and structures being that they are essential facilities and facilities whose failure could pose a substantial hazard to the community.

**Substantiation:** The proposed terminology revision is consistent with revisions to the wind speed terminology used in Section 1609 of the 2018 IBC. The IBC terminology was revised to be consistent with ASCE 7 terminology. The proposed Risk Category revision is consistent with changes to ASCE 7-16 Section 26.5.1, which has now provided separate wind speed maps for Risk Categories III and IV in recognition that a higher reliability is required for Risk Category IV buildings and structures. Risk Category IV buildings and structures in Denver are no less essential to the community than essential facilities in other communities; therefore, amended design wind speeds should be increased accordingly for Denver’s Risk Category IV buildings and structures.

Bibliography: IBC Section 1609; ASCE 7-16, Sections 26.5 and C26.5; Colorado Front Range Gust Map – ASCE 7-10 Compatible dated November 18, 2013

**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:

The existing amendment is more restrictive than the IBC/ASCE 7 codes because code wind speeds have been lowered approximately 7 percent regionally based on new wind data, and the boundaries of the Front Range special wind region have been moved westward into the foothills. Amended wind speeds are based on SEAC’s “Colorado Front Range Gust Map” of 2013, which is based on extensive local wind speed data. This publication is being reviewed considering the new ASCE wind speed data, but revised wind speed recommendations have not yet been made. However, the proposed revision to increase wind speeds for Risk Category IV is no more restrictive than the IBC/ASCE 7 codes. The increased wind speeds for Risk Category IV should increase construction costs of the lateral force resisting systems for essential buildings and structures in the range of 5 to 10 percent.

**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:
<table>
<thead>
<tr>
<th>Impact of Amendment Proposal</th>
<th>Increase</th>
<th>Reduce</th>
<th>No Effect</th>
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<tbody>
<tr>
<td>The effect of the amendment proposal on the cost of construction</td>
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<td>The effect of the amendment proposal on the cost of design</td>
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<tr>
<td>Is the amendment proposal more- or less-restrictive than the I-Codes</td>
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**Departmental Impact:**
Neutral – different wind speeds for Risk Categories III and IV should have no effect on review and inspection costs.

**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