Code Amendment Proposal Form
For public amendments proposed to the 2018 editions of the International Codes

Instructions: Upload this form and all accompanying documentation at www.denvergov.org/BuildingCode. If you are submitting your proposal on a separate sheet, make sure it includes all information requested below.

All proposals must be received by April 26, 2019.

CONTACT INFORMATION

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Signature:

AMENDMENT PROPOSAL

Please use a separate form for each proposal.

1) Code(s) associated with this proposal. Please use acronym: IECC (and ASHRAE 90.1)  
   If you submitted a separate coordination change to another code, please indicate which code:

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Code Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBC-xxxx</td>
<td>Denver Building Code–xxxx (code) amendments (e.g., DBC-IBC, DBC-IEBC)</td>
</tr>
<tr>
<td>IBC</td>
<td>International Building Code</td>
</tr>
<tr>
<td>IEBC</td>
<td>International Existing Building Code</td>
</tr>
<tr>
<td>IECC</td>
<td>International Energy Conservation Code</td>
</tr>
</tbody>
</table>

2) Please check here if a separate graphic file is provided: ☐
   Graphics may also be embedded within your proposal below.

3) Use this template to submit your proposal or attach a separate file, but please include all items requested below in your proposal. The only formatting needed is **BOLDING**, STRIKEOUT AND UNDERLINING. Please do not provide additional formatting such as tabs, columns, etc., as this will be done by CPD.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Code Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFC</td>
<td>International Fire Code</td>
</tr>
<tr>
<td>IFGC</td>
<td>International Fuel Gas Code</td>
</tr>
<tr>
<td>IGCC</td>
<td>International Green Construction Code</td>
</tr>
<tr>
<td>IMC</td>
<td>International Mechanical Code</td>
</tr>
<tr>
<td>IPC</td>
<td>International Plumbing Code</td>
</tr>
<tr>
<td>IRC</td>
<td>International Residential Code</td>
</tr>
</tbody>
</table>
**Code Sections/Tables/Figures Proposed for Revision:**

C406.1  
C406.2  
C406.3

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

**Proposal:**

C406.1 Requirements.  
Buildings shall comply with one two or more of the following:

C406.3 Reduced lighting power. The total connected interior lighting power calculated in accordance with Section C405.3.1 shall be less than 90 70 percent of the total lighting power allowance calculated in accordance with Section C405.3.2.

**Supporting Information:**

**Purpose:**  
The proposed amendment increases the percent efficiency requirements for C406 packages in order to increase the energy savings with the prescriptive compliance path. The proposed amendment requires that buildings complying per sections C401.2.2 achieve better performance to achieve a comparable level of energy performance with buildings complying with 2018 IECC, C401.2.1 and C401.2.3.

**Reasons:**  
Buildings complying with C401.2.2 (Prescriptive) are not as efficient as those complying with C401.2.1 and C401.2.3 (Total Building Performance).

The proposed amendment intends to rectify the energy performance differences by requiring projects complying with 2018 IECC C401.2.2 to comply with two of the packages in section C406 instead of just one.

The proposed changes to 2018 IECC C401.2.2 would result in increased energy savings in the City and County of Denver by closing some of the loopholes in 2018 IECC.

**Substantiation:**

Minimally complying with 2018 IECC, section C401.2.2 (prescriptive method in IECC) does not result in a building as efficient as one complying with section C401.2.3 (Total Building Performance).

PNNL analyzed the energy savings of the C406 Option Packages in 2018 IECC and found significant savings differences, as shown in Figure 1. The intent of the packages is to achieve an additional 4% energy savings over the prescriptive requirements of the IECC (C401.2.2).
In effect, IECC C401.2.2 (prescriptive) with a package is intended to be 4% more efficient than the minimum prescriptive requirements. Under IECC C401.2.3 (performance), the building must demonstrate that it is 15 percent more efficient than the minimum prescriptive requirements.

A project that follows C401.2.2 with this proposed amendment would select two of the packages now. If the packages remained as is, the savings would be 6-8 percent. By increasing the performance requirements for the HVAC (C406.2) and Lighting (C406.3) packages, the estimated energy savings could exceed 10% depending on the two packages that are selected. The lighting energy savings change of 30% reduction in lighting power equates to about 9% savings in offices. The lighting package is still the lowest cost and it along with any of the other measures will increase overall savings to 10-14%.

Bibliography:


Referenced Standards:

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

Impact:

The proposed changes will result in more consistency in the implementation of the 2018 IECC and the desired energy performance. The proposed changes may result in higher costs for projects following C401.2.1 (ASHRAE 90.1) or C401.2.2 (IECC prescriptive); however, the costs will remain the same for projects following C401.2.3 (Total Building Performance).

As with costs, the proposed changes are more restrictive for compliance per C401.2.1 and C401.2.2; however, there are no changes proposed to compliance per C401.2.3

Note: Discuss the impact of this proposal in this section AND indicate the impact of this amendment proposal for each of the following:

- The effect of the proposal on the cost of construction: ☒ Increase ☐ Reduce ☐ No Effect
- The effect of the proposal on the cost of design: ☒ Increase ☐ Reduce ☐ No Effect
- Is the proposal more or less restrictive than the I-codes: ☒ More ☐ Less ☐ Same

Departmental Impact: (To be filled out by CPD staff)
Note: CITY STAFF ONLY. Discuss the impact of this proposal in this section AND indicate the impact of this amendment proposal for each of the following:

- The effect of the proposal on the cost of review:  
  - [ ] Increase  
  - [ ] Reduce  
  - [ ] No Effect

- The effect of the proposal on the cost of enforcement/inspection:  
  - [ ] Increase  
  - [ ] Reduce  
  - [ ] No Effect