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](http://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**.

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**CONTACT INFORMATION**

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*By signing below, I hereby grant and assign to City and County of Denver all rights in copyright I may have in any authorship contributions I make to City and County of Denver in connection with this proposal. I understand that I will have no rights in any City and County of Denver publications that use such contributions in the form submitted by me or another similar form and certify that such contributions are not protected by the copyright of any other person or entity.*

**Signature:**

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**AMENDMENT PROPOSAL**

Please use a separate form for each proposal.

1) Code(s) associated with this proposal. Please use acronym: **IECC**

   If you submitted a separate coordination change to another code, please indicate which code:

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Code Name</th>
<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>
<td>IFGC</td>
<td>International Fuel Gas Code</td>
</tr>
<tr>
<td>IEBCC</td>
<td>International Existing Building Code</td>
<td>IMC</td>
<td>International Mechanical Code</td>
</tr>
<tr>
<td>IECC</td>
<td>International Energy Conservation Code</td>
<td>IPC</td>
<td>International Plumbing Code</td>
</tr>
<tr>
<td>IRC</td>
<td>International Residential Code</td>
<td></td>
<td></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.

### Code Sections/Tables/ Figures Proposed for Revision:

C403.4.6 (new)

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

**Proposal:**

**C403.4.6 Chilled-Water Coil Selection**

Chilled-water cooling coils shall be selected to provide a 15°F or higher temperature difference between leaving and entering water temperatures and a minimum of 57°F leaving water temperature at design conditions.

**Exceptions:**

1. Chilled-water cooling coils that have an air-side pressure drop exceeding 0.70 in of water when rated at 500 fpm face velocity and dry conditions (no condensation).
2. Individual fan-cooling units with a design supply airflow rate 5000 cfm and less.
3. Constant-air-volume systems.
4. Coils selected at the maximum temperature difference allowed by the chiller.
5. Passive coils (no mechanically supplied airflow).
6. Coils with design entering chilled-water temperatures of 50°F and higher.
7. Coils with design entering air dry-bulb temperatures of 65°F and lower.

Note: Show the proposal using *strikeout*, *underline* format. At the start of each section, give one of the following instructions:
- Revise as follows:
- Add new text as follows:
- Delete and substitute as follows:
- Delete without substitution:

Supporting Information:
The purpose of this code change proposal is to encourage optimized ΔT for water-chilling package system designs. The proposal copies the prescriptive requirement as it exists in ASHRAE Standard 90.1-2016, but is not included in the 2018 IECC. The design ΔT for a water-chilling package will have a significant impact on its overall energy use; increasing ΔT can require that more energy be consumed at the chiller itself, but reduces water flow rate, pressure drop at the coil, and pumping power required. ASHRAE 90.1-2016 requires a minimum chilled water ΔT of 15°F, and today’s chiller designs are optimized to achieve this efficiently. This proposal would prescribe a ΔT at the coil of at least 15°F with expected design conditions of 42°F entering water and 57°F leaving water. It allows for system flexibility by allowing a wider ΔT and different entering and leaving water designs, as well as exceptions for where a 15°F ΔT does not make sense for the given application or is not practically feasible.

For additional substantiation, please see *Trane Engineers Newsletter*, Volume 43-2, pp 4-5
https://www.trane.com/content/dam/Trane/Commercial/global/products-systems/education-training/engineers-newsletters/waterside-design/ADM-APN051-EN.pdf

Note: This section MUST include these items:
- **Purpose:** 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. to reflect physical, environmental and customary characteristics that are specific to the City and County of Denver)
- **Reasons:** Clearly justify the change to 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 that clearly shows why the current code does not reflect physical, environmental and customary characteristics that are specific to the City and County of Denver and explains how such proposal will improve the code.
- **Substantiation:** 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:** Include a bibliography when substantiating material is associated with the amendment proposal. The proponent shall make the substantiating materials available for review.

Referenced Standards:
ANSI/ASHRAE/IES Standard 90.1-2016 Section 6.5.4.7

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

Impact:
This proposal may add to the cost of construction, however SSPC 90.1 uses life cycle cost justification in developing its proposals and did so for this requirement. It should also be noted that compliant solutions are available from a wide range of providers. This proposal is more stringent than the 2018 IECC, which only enforces this requirement when compliance is demonstrated using ASHRAE Standard 90.1-2016.

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)
<table>
<thead>
<tr>
<th>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:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The effect of the proposal on the cost of review: ☐ Increase ☐ Reduce ☐ No Effect</td>
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<tr>
<td>- The effect of the proposal on the cost of enforcement/inspection: ☐ Increase ☐ Reduce ☐ No Effect</td>
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