**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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Organization: MTech Mechanical

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:**

**AMENDMENT PROPOSAL**

Please use a separate form for each proposal.

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

DBC-2016

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

N/A

**Acronym** | **Code Name**
---|---
DBC-xxxx | Denver Building Code—xxxx (code) amendments (e.g., DBC-IBC, DBC-IEBC)
IBC | International Building Code
IEBC | International Existing Building Code
IECC | International Energy Conservation Code
IFC | International Fire Code
IFGC | International Fuel Gas Code
IGCC | International Green Construction Code
IMC | International Mechanical Code
IPC | International Plumbing Code
IRC | International Residential Code

Please check here if a separate graphic file is provided: ☐

Graphics may also be embedded within your proposal below.

2) 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:**
DBC-IFC 909.10.2 Testing
Requirements

Proposal:

(New)

Add new text as follows:

6. Make-up air provisions: Stairway doors on the fire floor may be opened and used as a source of make-up air during smoke exhaust system testing, as a means of achieving the performance described in Article 909.10.1. Variable frequency drives for smoke exhaust system fans may be controlled in response to duct static pressure settings, in order to achieve the required smoke exhaust performance, while not exceeding the maximum stairway door opening force, nor impacting the performance of hoistway doors.

Supporting Information:

• Purpose: The purpose of adding this Proposal to the Amendments is to describe a cost-effective approach for satisfying the smoke exhaust system performance requirements recently being enforced by the Denver Fire Department. Those performance requirements are related to the prescriptive design requirements of Article 909.15.3.3 for smoke exhaust systems for buildings. The concept of this Proposal can be used to achieve acceptable performance while not adding a dedicated make-up air system(s) or increasing the complexity of the normal HVAC systems for a building.

• Reasons: The smoke control systems that were defined by the Denver Amendments several editions ago were configured to provide zones of positive pressure above and below the fire floor, in what was known as a "sandwich effect". Those requirements were relaxed in subsequent editions due to reasons of complexity, reliability and cost. The requirement to use the normal building HVAC systems forced those systems to be supported by the emergency generator, which increased the size of the generator and emergency power distribution system. Selective operation of motorized fire/smoke dampers on supply air system risers complicated the fire alarm system and created more opportunities for component failure during fire alarm conditions. The need to add HVAC systems back into the scope of the smoke control systems is viewed as a step toward more complicated and expensive smoke control systems. This Proposal uses components of the smoke control systems that already would be in place.

• Substantiation: MTech has used this approach on two high rise projects, within the past year, on which it was necessary to add controls to the smoke exhaust fans in order to achieve a higher air change rate on the fire floor, as required to obtain Denver Fire Department approval for the project. Both buildings had received a building permit for smoke control systems following the current edition of the Denver Amendments. Some level of additional HVAC system scope will be required in order to provide a higher air change rate of smoke exhaust on the fire floor under the new requirements. This Proposal represents an approach to achieve compliance.

• Bibliography: N/A.

Referenced Standards:
Impact:

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 smoke exhaust system components most effected by this Proposal - the smoke exhaust fan(s), variable frequency drive (VFD(s)) and fire alarm system - already would exist as part of the overall smoke control system. However, additional site coordination work will be required between the smoke control system contractor and the testing, adjusting and balancing (TAB) contractor, in order to define/create multiple operating points for the smoke exhaust system, based upon whether the stairway doors are closed or are open to provide a source of make-up air. If the requirements are defined at the beginning of the project, then the additional cost of the work will be minimal.

• The effect of the proposal on the cost of design: ☐ Increase ☐ Reduce ☒ No Effect

The smoke control system engineer already is required to define the sequences of operation for the smoke control systems on a project. The cost to include an additional paragraph to describe the work of this Proposal in those sequences will be insignificant.

• Is the proposal more or less restrictive than the I-codes: ☒ More ☐ Less ☐ Same

This Proposal is presented as an approach to respond to a particular aspect of the Denver Amendments. That aspect is not part of the I-Series Codes themselves. Consequently, this Proposal is considered to be more restrictive that the Denver Amendments are written currently.

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