



DENVER AMENDMENT PROPOSAL FORM FOR PROPOSALS TO THE 2019 DENVER BUILDING CODE AMENDMENTS AND THE 2021 INTERNATIONAL CODES

DENVER
THE MILE HIGH CITY

2021 CODE DEVELOPMENT CYCLE

1) **Name:** John Woycheese **Date:** September 17, 2021
Email: John.woycheese@denvergov.org **Representing (organization or self):** Organization

2) One proposal per this document is to be provided with clear and concise information.

Is a separate graphic file provided ("X" to answer): ___ Yes or X No

3) Highlight the code and acronym that applies to the proposal

<u>Acronym</u>	<u>Code Name</u>	<u>Acronym</u>	<u>Code Name</u>
DBC-AP	Denver Building Code–Administrative Provisions	IPC	International Plumbing Code
IBC	International Building Code	IRC	International Residential Code
IECC	International Energy Conservation Code	IFGC	International Fuel Gas Code
IEBC	International Existing Building Code	IMC	International Mechanical Code
IFC	International Fire Code	DGC	Denver Green Code

AMENDMENT PROPOSAL

Please provide all the following items in your amendment proposal.

<p><u>Code Sections/Tables/Figures Proposed for Revision:</u> Instructions: If the proposal is for a new section, indicate (new), otherwise enter applicable code section.</p> <p>B104.2.1 (New)</p>
<p><u>Proposal:</u> Instructions: Show the proposal using strikeout, <u>underline</u> format. Place "X" next to choice that best defines your proposal: ___ Revision <u>X</u> New Text ___ Delete/Substitute ___ Deletion</p> <p>Section B104.2.1 Townhouses is added as follows:</p> <p><u>B104.2.1 Townhouses.</u> Where <i>buildings</i> are constructed as <i>townhouses</i> in accordance with the <i>International Residential Code</i>, each separate townhouse unit shall be considered a <i>fire-flow calculation area</i>, with <i>fire flow</i> determined for the largest unit.</p> <p style="padding-left: 40px;"><u>Exception:</u> Townhouses constructed in accordance with the <i>International Building Code</i>.</p>
<p><u>Supporting Information (Required):</u> All proposals must include a written explanation and justification as to how they address physical, environmental, and/or customary characteristics that are specific to the City and County of Denver. The following questions must be answered for a proposal to be considered.</p> <ul style="list-style-type: none"> - Purpose: What does your proposal achieve? <p>This proposal codifies the approach used by Denver for IRC townhouses, wherein the largest unit is used to determine the fire flow, rather than the area of the entire structure.</p> <ul style="list-style-type: none"> - Reason: Why is your proposal necessary? <p>IRC requirements for separation between units is far less robust that those specified in the IFC section for fire flow calculations; however, the units are treated individually, under the current DFD process, when determining fire flow. This proposal codifies the requirements for fire flow involving IRC townhouses.</p>

This treatment of the townhouse units essentially parallels the residential fire sprinkler concept: where the IBC and NFPA 13 focus on both life safety and property protection, the IRC and NFPA 13D/R focus less on property protection (e.g., NFPA 13D/R sprinkler systems are intended to extend tenability within residential buildings, to enable people to escape, but may not control the fire, leading to more damage to property, up to complete loss of the structure).

- Substantiation: Why is your proposal valid? (i.e. technical justification)

Appendix B of the IFC, B104.1, requires the fire flow calculation area to include the total floor area of all floor levels within the exterior walls and under the horizontal projections of the roof, with some modifications. Section B104.2, for example, requires a single building to be separated by fire walls (constructed per the IBC) without openings for multiple fire flow calculation areas to be considered for the building. IBC fire walls must remain standing if the structure on either side collapses under fire conditions (IBC 706.2); there are also requirements for extending the fire-resistance rating along exterior walls that are intersected by the fire wall (IBC 706.5.1). Fire walls are also typically of 2-hr fire-resistance rated construction (IBC Table 706.4).

The IRC has far less stringent requirements for common walls between units. Per the Denver Amendments to the IRC, common walls are required to have only 1-hr fire-resistance if a sprinkler system is provided, and 2-hrs otherwise (R302.2.2). The construction of these walls more closely resembles fire partitions than fire walls, given the lack of a requirement for continuity after collapse on one side (see, for example, the Exception to R302.2.2, which allows wall construction tight to the roof under certain conditions). These fire partitions are also permitted penetrations (R302.2.2), including (apparently) through-penetrations (R302.4.1, which is not deleted or amended). As such, fire flow for townhouses, by strict interpretation, would have to satisfy the area of all floors within the exterior walls.

That concept is not the general practice followed by DFD. The Colorado Springs Fire Department has also issued an Administrative Ruling/Interpretation on this topic (Colorado Springs Fire Marshal Administrative Ruling/Interpretation 2019-1 Colorado Springs Fire Marshal Administrative Ruling/Interpretation 2019-1, provided below) that uses the single largest unit for townhomes separated in accordance with the IRC.

Townhouses are constructed to the IBC are under that more restrictive code for one or more reasons; as such, they should be treated as any other building constructed under that standard. An exception has been proposed to that end.

The exception may cause a slight increase to construction cost, for those locations with inadequate water supply.

Bibliography and Access to Materials (as needed when substantiating material is associated with the amendment proposal):

[Fire Flow Requirements for Townhomes \(coloradosprings.gov\)](https://coloradosprings.gov/sites/default/files/inline-images/admin_ruling_2019-1_fire_flow_requirements_for_townhomes.pdf) at https://coloradosprings.gov/sites/default/files/inline-images/admin_ruling_2019-1_fire_flow_requirements_for_townhomes.pdf: Link to Colorado Springs Fire Marshal Administrative Ruling/Interpretation 2019-1, 2019 (accessed 9/17/21).

Other Regulations Proposed to be Affected

***For proposals to delete content from the 2019 Denver Green Code in conjunction with adding it to other mandatory Denver codes and/or regulations, only.**

Please identify which other mandatory codes or regulations are suggested to be updated (if any) to accept relocated content.

Referenced Standards:

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

Impact:

How will this proposal impact cost and restrictiveness of code? ("X" answer for each item below)

Cost of construction: Increase Decrease No Impact
Cost of design: Increase Decrease No Impact
Restrictiveness: Increase Decrease No Impact

Departmental Impact (City use only):

This amendment proposal increases/decreases/is neutral to the cost of plans review.

This amendment increases/decreases/is neutral to the cost of inspections.