



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:** Brian Lukus **Date:** August 31, 2021
Email: Brian.lukus@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.

Code Sections/Tables/Figures Proposed for Revision:

Instructions: If the proposal is for a new section, indicate (new), otherwise enter applicable code section.

907.6.1.1.1

Proposal:

Instructions: Show the proposal using ~~strikeout~~, underline format.

Place “X” next to choice that best defines your proposal: X Revision ___ New Text ___ Delete/Substitute ___ Deletion

907.6.1.1.1 System design. Where survivability is required in buildings with 2-hour fire rated floors, the systems wiring shall be designed to meet Pathway Survivability Level 3 in accordance with NFPA 72. Where survivability is required in buildings with 1-hour fire rated floors, pathway survivability shall comply with NFPA 72.

Exception: Stacked ~~electrical~~ closets dedicated for fire alarm and other approved emergency equipment that are separated from the remainder of the building by two-hour fire-resistance rated fire barriers are permitted as a “protected area” for application of NFPA 72, 12.4.4(3). ~~Where communication “risers” are routed horizontally because the rated rooms do not stack, the wiring shall be installed utilizing circuit integrity cable installed in conduit per UL-FHHT.28 or routed in 2-HR fire resistance rated horizontal assemblies.~~

Supporting Information (Required):

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.

- Purpose: What does your proposal achieve?

This code revision allows a more flexible fire alarm system design for buildings with 1-hour floor assemblies. The exception revision clearly identifies what would be accepted as a performance alternative for Level 3 survivability noted in NFPA 72. It is revised to a dedicated closet based on electrical fire loss data from NFPA. The NFPA 72 reference strike is to align with current standard section numbering. The last sentence is struck as this topic is already regulated in NFPA 72 and not needed.

- Reason: Why is your proposal necessary?

With changing building construction codes allowing 1-hour floor high-rises and updates to NFPA 72, survivability requirements currently adopted are restrictive and sometimes a design burden in buildings with a 1-hour floor system. The use of this closet is intended for other life safety equipment requiring Level 3 survivability as well, thus necessitating a low fire risk location as opposed to the currently allowed electrical closet.

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

New building codes allow high-rises to be constructed using 1-hour floor assemblies up to approximately 12 stories. The 2022 NFPA 72 has revised survivability requirements and offers more flexible design methods. Currently adopted language would not allow compliance with NFPA 72 updates. Allowing compliance with NFPA 72 methodology allows for more flexible design. The Level 3 survivability is maintained for buildings with 2-hour floor assemblies. The reason for dedicated fire system stacked closet is to allow a dedicated closet for other systems requiring level 3 survivability to be co-located in this protected space, i.e. two way communication, fire phone systems, emergency radio enhancement systems and not have an electrical fire threat with high voltage equipment in the same room.

Furthermore, an electrical closet fire presents a risk to the fire alarm system equipment located within which are intended to function during a fire incident. NFPA research shows that in office buildings 12% of the fires occurs from electrical distribution equipment in office buildings. If a fire occurs in an electrical room, loss of the fire alarm system could occur and messaging capability could be lost to floors above or the entire building. Separation of this electrical hazard from the life safety system improves the reliability of the system to operate during a fire incident. This is maintained as a 2-hour closet, even in 1-hour floor buildings, because it is fundamentally equal to a 2-hour cabling system or passive constructed system per NFPA 72 Level 3 survivability. Even in a 1-hour floor building, Level 3 survivability is required when using a single riser location; 2-hour systems may be avoided however NFPA 72 would require separation of risers by 1/3 the floor plate distance and/or other passive wire routing requirements.

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

<https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Building-and-life-safety/osoffices.ashx>

2022 NFPA 72 23.14

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 X Decrease ___ No Impact
 Cost of design: ___ Increase ___ Decrease X No Impact
 Restrictiveness: ___ Increase X 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.