



- This amendment is less restrictive than the IBC for a fire safety provision (see discussion below), which is inconsistent with DBCA 104.9 that doesn't give the building official authority to grant modifications to the code where such modifications lessen any fire safety requirements.
- This amendment is inconsistent with other IBC sections creating enforcement and interpretation issues (see discussion below) below.

The current amendment adds an exception that allows shaft enclosures for piping, ducts and vents to be supported on non-fire-rated assemblies for construction types that don't have a required fire-resistance rating for building elements. The IBC requires shafts to be constructed with fire barriers that have supporting construction with at least the same fire-resistance rating as the fire barrier, regardless of construction type – this is required “to prevent the effectiveness of the assembly from being circumvented by a fire that threatens the support elements”, per the IBC commentary. Shafts are intended to confine a fire to the floor of origin and prevent the fire from spreading to other levels through the shaft, so the use of the shaft (piping, ducts or vents in this case) is irrelevant - note that piping could include gas piping that could provide additional fuel to the fire and aid in the spread of fire. There is no justification for Denver's amendments to be less restrictive than the IBC and to reduce the requirements of a fire safety provision.

The wording in this amendment is inconsistent with the wording in IBC 707.5.1 for supporting construction, that this amendment is intended to be an exception to (IBC 713.5 requires compliance with 707.5). IBC 707.5.1 requires a fire-resistance rating for “supporting construction” of fire barriers, which could be a floor or floor/ceiling assembly (and its supporting construction), or just beams and columns that directly support the fire barrier. The exception in this amendment is for support by “non-fire-rated assemblies”, which implies support only by a floor or floor/ceiling assembly (and its supporting construction), so direct support on non-fire-rated beams and columns would not be allowed since these are not “assemblies”.

IBC 713.11 includes an option for enclosing the bottom of shafts with construction having a fire-resistance rating not less than required for the shaft enclosure. This rated bottom enclosure is typically also the supporting construction of the shaft which is not required to be rated per Denver's amendment, which is inconsistent.

IBC 704.1 requires structural members to have a fire-resistance rating not less than the assemblies supported by the structural members and has an exception that references specific sections where this is not required or may be different for a specific condition; however, Section 713.5 (as amended) is not referenced, which is inconsistent and creates a conflict in the code.

IBC 713.9 requires joints in shaft enclosures to comply with IBC 715. For a head of wall fire barrier to floor joint, IBC 715 only includes provisions for joints installed between fire-resistance rated walls and floors and the fire-resistant joint systems required by IBC 715 are only tested between fire-resistance rated walls and floors. Denver's current amendment would allow a fire-resistance rated fire barrier to site on a non-rated floor which results in the head of wall joint for the fire barrier below to be between a rated wall and a non-rated floor – this leaves a condition that cannot comply with IBC 715 as required and is, therefore, not enforceable. If there are no enforceable joint requirements, this leaves an obvious failure point in the fire barrier which could lead to transfer of fire from one floor to another.

For the reasons above, it is proposed that Denver's current amendment to IBC 713.5 be deleted.

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

None.

**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.

None.

**Impact:**

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

Cost of construction:  Increase     Decrease     No Impact

Note: This proposal will increase cost of construction relative to the 2019 DBC but will have no impact on cost of construction relative to the 2021 IBC.

Cost of design:             Increase     Decrease     No Impact

Restrictiveness:             Increase     Decrease     No Impact

Note: This proposal will increase restrictiveness relative to the 2019 DBC but will have no impact on restrictiveness relative to the 2019 IBC.

**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.