



Firestopping Penetrations for Dissimilar Materials

Building Division Interpretations and Procedures

Index Number:	IBC-2017-006
Issue Date:	12/18/19
Code:	2015 IBC & NFPA 101
Section:	IBC 714.3.3 & 714.4.3, & NFPA 101 8.3.5.5

Background & Intent

Many plumbing system installations within the City of Bellevue involve, or propose, the combined use of combustible and noncombustible piping for drains/wastes/vents. For example, cast iron (noncombustible) drains may be used for sound control, but plastic (combustible) vents are combined on each story for cost savings. While we understand the reasons for these designs, the integrity of fire-resistive rated construction becomes more difficult to maintain where the piping penetrates a rated assembly. The 2015 International Building Code Section 714 on Penetrations contains sections 714.3.3 and 714.4.3, which both read as follows:

“Dissimilar materials.

Noncombustible penetrating items shall not connect to combustible materials beyond the point of firestopping unless it can be demonstrated that the fire-resistance integrity of the horizontal assembly is maintained.”

NFPA 101 provides a method that maintains the integrity of the fire-resistive rated assembly in Section 8.3.5.5 as follows:

“Transitions.

8.3.5.5.1 Where piping penetrates a fire resistance-rated wall or floor assembly, combustible piping shall not connect to noncombustible piping within 36 in. (914 mm) of the firestop system or device without demonstration that the transition will not reduce the fire resistance rating, except in the case of previously approved installations.

8.3.5.5.2 Unshielded couplings shall not be used to connect noncombustible piping to combustible piping unless it can be demonstrated that the transition complies with the fire-resistive requirements of 8.3.5.1.”

Policy (See Attached Figures)

Where dissimilar materials are not used in the piping system, through penetrations shall be protected by an approved penetration firestop system based on the type of piping used.

Where dissimilar materials are used, and the portion of pipe penetrating the rated assembly is combustible, the penetration shall be protected by an approved penetration firestop system for combustible piping. The combustible piping shall extend 6" minimum past the firestop system and shall be in accordance with all requirements of the firestop system.

Where dissimilar materials are used and the portion of pipe penetrating the rated assembly is noncombustible, the penetration shall be protected by an approved penetration firestop system based on the type of piping used, and the installation shall fully comply with 2015 NFPA 101 Sections 8.3.5.5.1 and 8.3.5.5.2. The noncombustible piping shall extend a minimum of 36" past either side of the rated assembly before transitioning to combustible material. The 36" is measured as developed length and must be continuous through all fittings and transitions.

For questions concerning required permits, contact Development Services (425-452-4121) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4).

Signature Gregg Schrader
Gregg Schrader, PE, SE, Building Official

Date: 12/18/2019

Attachments

Supersedes: IBC-06-001

Dissimilar Materials Penetrating a Rated Assembly

IBC 714.3.3 & 714.4.3 and NFPA 101 8.3.5.5

