

CHAPTER 15

FIRESTOP PROTECTION

1501.0 General Requirements.

1501.1 Applicability. All piping penetrations of required fire-resistance-rated walls, partitions, floors, floor/ceiling assemblies, roof/ceiling assemblies, or shaft enclosures shall be protected in accordance with the requirements of the Building Code, and this chapter.

1502.0 Plans and Specifications.

1502.1 Plans and specifications shall indicate with sufficient detail how penetrations of fire-resistance-rated assemblies shall be firestopped prior to obtaining design approval.

1503.0 Installation.

1503.1 Firestop materials shall be installed in accordance with this chapter, the Building Code, and the manufacturer's instructions.

1504.0 Definitions.

1504.1 Penetration Firestop System. A specific assemblage of field-assembled materials, or a factory-made device, which has been tested to a standard test method and, when installed properly on penetrating piping materials, is capable of maintaining the fire-resistance rating of assemblies penetrated.

1504.2 F Rating. The time period that the penetration firestop system limits the spread of fire through the penetration, when tested in accordance with ASTM E 814.

1504.3 T Rating. The time period that the penetration firestop system, including the penetrating item, limits the maximum temperature rise of 325°F above its initial temperature through the penetration on the nonfire side, when tested in accordance with ASTM E 814.

1505.0 Combustible Piping Installations.

1505.1 Combustible piping installations shall be protected in accordance with the appropriate fire resistance rating requirements in the Building Code that list the acceptable area, height, and type of construction for use in specific occupancies to assure compliance and integrity of the fire resistance rating prescribed.

1505.2 When penetrating a fire-resistance-rated wall, partition, floor, floor-ceiling assembly, roof-ceiling assembly, or shaft enclosure, the fire

resistance rating of the assembly shall be restored to its original rating.

1505.3 Penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E 119 or ASTM E 814, with a minimum positive pressure differential of 0.01 inch of water. Systems shall have an F rating of at least 1 hour but not less than the required fire resistance rating of the assembly being penetrated. Systems protecting floor penetrations shall have a T rating of at least 1 hour but not less than the required fire resistance rating of the floor being penetrated. Floor penetrations contained within the cavity of a wall at the location of the floor penetration do not require a T rating. No T rating shall be required for floor penetrations by piping that is not in direct contact with combustible material.

1505.4 When piping penetrates a rated assembly, combustible piping shall not connect to non-combustible piping unless it can be demonstrated that the transition complies with the requirements of Section 1505.3.

1505.5 Insulation and Coverings. Insulation and coverings on or in the penetrating item shall not be permitted unless the specific insulating or covering material has been tested as part of the penetrating firestop system.

1505.6 Sleeves. Where sleeves are used, the sleeves should be securely fastened to the fire-resistance-rated assembly. The (inside) annular space between the sleeve and the penetrating item and the (outside) annular space between the sleeve and the fire-resistance-rated assembly shall be firestopped in accordance with the requirements for a sleeve penetrating item.

1506.0 Non-combustible Piping Installations.

1506.1 Noncombustible piping installations shall be protected in accordance with the appropriate fire resistance rating requirements in the Building Code that list the acceptable area, height, and type of construction for use in specific occupancies to ensure compliance and integrity of the fire-resistance rating prescribed.

1506.2 When penetrating a fire-resistance-rated wall, partition, floor, floor-ceiling assembly, roof-ceiling assembly, or shaft enclosure, the fire-resistance rating of the assembly shall be restored to its original rating.

Exceptions:

- (1) Concrete, mortar, or grout may be used to fill the annular spaces around cast-iron,

copper, or steel piping that penetrates concrete or masonry fire-resistant-rated assemblies. The nominal diameter of the penetrating item should not exceed 6 inches (15.2 cm), and the opening size should not exceed 144 inches² (929 cm²).

The thickness of concrete, mortar, or grout should be the full thickness of the assembly or the thickness necessary to provide a fire-resistance rating not less than the required fire-resistance rating of the assembly penetrated, or

- (2) The material used to fill the annular space shall prevent the passage of flame and hot gases sufficient to ignite cotton waste for the time period equivalent to the fire-resistance rating of the assembly, when tested to standard(s) referenced in Section 1506.3.

1506.3 Penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E 119 or ASTM E 814, with a minimum positive pressure differential of 0.01 inch of water. Systems shall have an F rating of at least 1 hour but not less than the required fire-resistance rating of the assembly being penetrated. Systems protecting floor penetrations shall have a T rating of at least 1 hour but not less than the required fire-resistance rating of the floor being penetrated. Floor penetrations contained within the cavity of a wall at the location of the floor penetration do not require a T rating. No T rating shall be required for floor penetrations by piping that is not in direct contact with combustible material.

1506.4 When piping penetrates a rated assembly, combustible piping shall not connect to non-combustible piping unless it can be demonstrated that the transition complies with the requirements of Section 1506.3.

1506.5 Unshielded couplings shall not be used to connect noncombustible piping unless it can be demonstrated that the fire-resistive integrity of the penetration is maintained.

1506.6 Sleeves. Where sleeves are used, the sleeves should be securely fastened to the fire-resistance-rated assembly. The (inside) annular space between the sleeve and the penetrating item and the (outside) annular space between the sleeve and the fire-resistance-rated assembly shall be firestopped in accordance with the requirements for a sleeve-penetrating item.

1506.7 Insulation and Coverings. Insulation and coverings on or in the penetrating item shall not be permitted unless the specific insulating or covering material has been tested as part of the penetrating firestop system.

1507.0 Required Inspection.

1507.1 General. Prior to being concealed, piping penetrations shall be inspected by the Authority Having Jurisdiction to verify compliance with the fire-resistance rating prescribed in the Building Code. ←

1507.2 The Authority Having Jurisdiction shall conduct a thorough examination of sufficient representative installations, including destructive inspection, to provide verification of satisfactory compliance with this chapter, the appropriate manufacturers' installation standards applied by the installer, construction documents, specifications, and applicable manufacturers' product information.

1507.3 The Authority Having Jurisdiction shall determine the type, size, and quantity of penetrations to be inspected.

1507.4 The Authority Having Jurisdiction shall compare the field installations with the documentation supplied by the installer to determine the following:

- (1) The required F ratings (1, 2, 3, or 4 hour) and T ratings (0, 1, 2, 3, or 4 hour) of the firestop penetration firestop systems are suitable for the assembly being penetrated.
- (2) The penetrating firestop systems are appropriate for the penetrating items, as documented through testing of the systems conducted by an independent testing agency.
- (3) The penetrating firestop system is installed as tested.