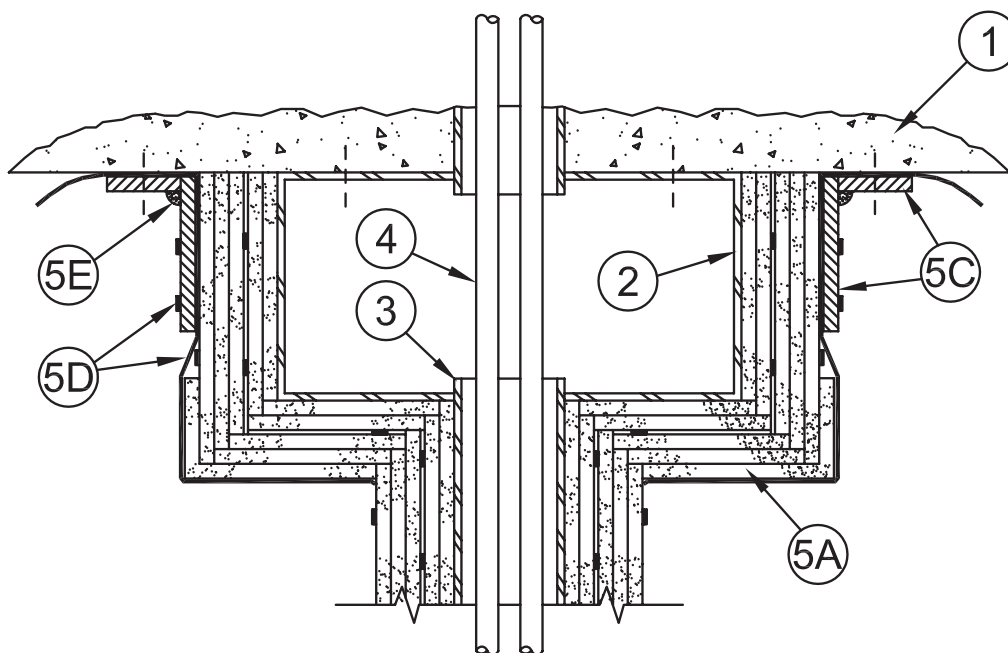


System No. 9
September 17, 2012
Fire Ratings – 1 and 3 Hr



1. **Wall or Floor Assembly** – Concrete or masonry wall or concrete floor having a fire rating equal to or greater than the fire rating of the electrical circuit protective system. Opening in wall or floor through which conduit passes is to be sized to closely follow the contour of the conduit feeding into the steel junction box. Through opening in wall or floor to be firestopped prior to installation of the electrical circuit protective system using a compatible firestop system. The perimeter of the firestopped through opening shall be within the outer bounds of the electrical circuit protective system. See **Through Penetration Firestop Systems** (Guide XHEZ) for presently Classified firestop systems.
2. **Steel Junction Box** – Min 12 by 12 by 6 in. (305 by 305 by 152 mm) deep surface-mounted junction box formed of min 0.052 in. (1.3 mm) thick steel. Steel junction box to be installed in accordance with all provisions of the current National Electrical Code.
3. **Steel Conduit** – (Optional) – Nom 2 in. (51 mm) diameter (or larger) Trade Size rigid steel conduit. Conduits to be installed as a complete system in accordance with all provisions of the current National Electrical Code. Conduit to be provided with a fire rated electrical circuit protective system which is compatible with the electrical circuit protective system (Item 5) installed on the steel junction box. Details of electrical circuit protective system at conduit/junction box interface to be in accordance with the detailed installation instruction manual supplied by the manufacturer of the **Electrical Circuit Protective Materials***.
4. **Cables** – Min No. 16 AWG jacketed multi-conductor cables and/or min 250 kcmil jacketed single-conductor copper power cables. Cable insulation to be cross-linked polyethylene. Cable jacket to be cross-linked polyethylene or polyvinyl chloride. Cables to be installed in accordance with all provisions of the current National Electrical Code.
5. **Electrical Circuit Protective System** – The electrical circuit protective system consists of an endothermic mat wrap, foil tape, intumescent sheet, stainless steel banding straps and caulk. The system shall be installed in accordance with the detailed installation instruction manual supplied by the manufacturer of the **Electrical Circuit Protective Materials***. The details of the electrical circuit protective system are summarized below:
 - A. **Electrical Circuit Protective Materials* – Mat Wrap** – Nom 0.4 in. (10 mm) flexible sheet material supplied in 24 in. (610 mm) wide rolls. Pieces of mat cut to size to cover all exposed surfaces of junction box with min 2 in. (51 mm) overlap at all seams. As an alternate for the 3 hr fire rated system, the inner mat layers may be installed in a boxed manner such that the overlap at each seam is equal to the thickness of the mat. The final layer of mat must be installed with a min 2 in. (51 mm) overlap at all seams. Successive layers of mat installed in same manner with overlapping seams offset from preceding layer. Seams of each layer sealed with foil tape (Item 5B). Mat wrap layers secured in place with stainless steel banding straps (Item 5D). A min of three layers of mat is required for 1 hr rating. A min of five layers of mat is required for 3 hr rating.
3M COMPANY – Types E-5A-4, E-54A, E-54C.
 - B. **Foil Tape** – (Not Shown) – Nom 4 in. (102 mm) wide min 3 mil (0.08 mm) thick pressure sensitive aluminum foil tape or min 3 mil (0.08 mm) thick stainless steel foil tape, supplied in rolls. Used to secure seams of mat wrap (Item 5A).
 - C. **Electrical Circuit Protective Materials* – Intumescent Sheet** – Rigid aluminum foil faced sheets with galvanized steel sheet backer. Nom 4 in. (102 mm) wide piece of sheet formed into collar around mat wrapped junction box with seam butted and with steel backer exposed (foil facing against mat wrap). Collar butted against wall or floor surface and secured to mat wrapped junction box with steel banding strap (Item 5D). A two-piece plate cut from intumescent sheet to be installed on wall or floor surface around intumescent sheet collar. Plate pieces cut to tightly follow the contours of the intumescent sheet collar with seams between pieces tightly butted. Plate to lap min 2 in. (51 mm) on the wall or floor surface with the steel backer exposed (foil face against wall or floor surface). Plate secured to wall or floor surface with steel anchor bolts, or equivalent, in conjunction with min 1-1/4 in. (32 mm) diameter steel fender washers. Anchor bolts located max 2 in. (51 mm) from both sides of butted seams and max 4 in. (102 mm) O.C. around perimeter of plate, 1 in. (25 mm) in from plate edges. When butted seams of two-piece plate are not completely backed by concrete, seams to be covered with min 2 in. (51 mm) wide strips of min 0.016 in. (0.41 mm) thick galvanized steel secured with steel screws or rivets spaced max 2 in. (51 mm) O.C. on both sides of seam.

System No. 9 continued

3M COMPANY – Type CS-195+

- D. **Steel Banding Strap** – Min 5/8 in. (16 mm) wide by 0.020 in. (0.51 mm) thick stainless steel banding straps used in conjunction with stainless steel crimp clips. Banding straps used to secure intumescent sheet collar (Item 5C) and mat wrap (Item 5A) layers in position. For the 1 hr rated system, steel banding straps required to be installed on outermost mat wrap layer. For 3 hr rated system, steel banding straps required to be installed after second mat wrap layer in addition to steel banding straps securing outermost mat wrap layer.
- E. **Electrical Circuit Protective Materials*** – **Caulk** – Thick bead of caulk to be applied as a gasket between the intumescent sheet plate (Item 5C) and the wall or floor surface. Thick bead of caulk to be applied around the base of the intumescent sheet collar (Item 5C) at its interface with the intumescent sheet plate.

3M COMPANY – Type CP 25WB+

*Bearing the UL Classification Mark

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Flexible Wraps

Endothermic Mat

Electrical Circuit Protection

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