



Classified by
Underwriters Laboratories, Inc.
to CAN/ULC-S115

System No. C-AJ-2979

F Ratings – 2 Hr

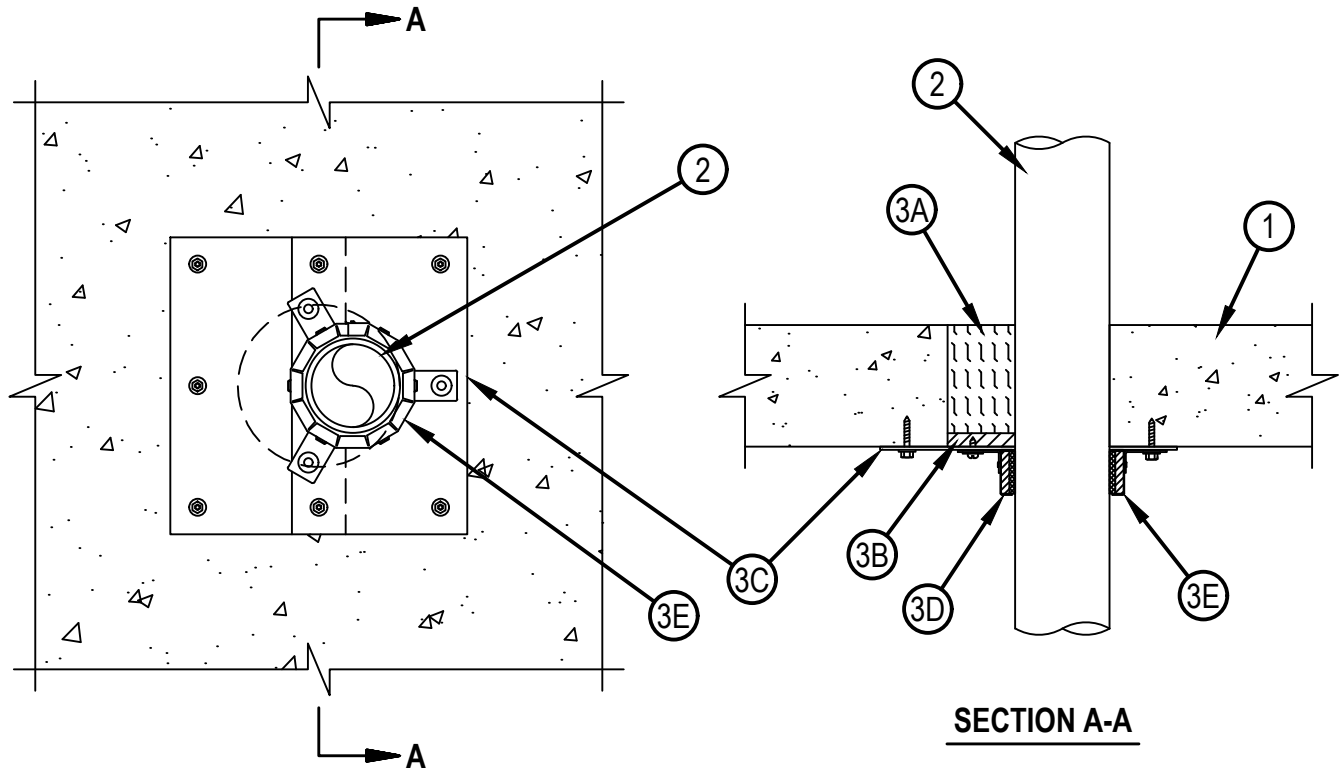
FT Ratings – 1/4 and 2 Hr (See Item 3)

FH Ratings – 2 Hr

FTH Ratings – 1/4 and 2 Hr (See Item 3)



CAJ 2979



System tested with a pressure differential of 50 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side.

1. Floor or Wall Assembly — Min 114 mm (4-1/2 in.) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 152 mm (6 in.).
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Through Penetrants — One nonmetallic pipe to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe and opening shall be min 6 mm (1/4 in.) to max 69mm (2-3/4 in.). Pipe to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of nonmetallic pipes may be used:
A. XFR Polyvinyl Chloride (XFR-PVC) Pipe — Nom 51mm (2 in.) diam (or smaller) Schedule 40 XFR-PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

3. Firestop System — The firestop system shall consist of the following:

- A. Packing Material — Min 51 mm (2 in.) thickness of min 64 kg/m³ (4 pcf) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from bottom surface of floor or both surfaces of wall to accommodate the required thickness of fill material (Item 3B).
- A1. Packing Material (Optional, Not Shown) — As an alternative to Item 3A install min 102 mm (4 in.) thickness of min 64 kg/m³ (4 pcf) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or both surfaces of wall to accommodate the required thickness of fill material (Item 3B1).
- B. Fill, Void or Cavity Material* — Sealant — Min 13 mm (1/2 in.) thickness of fill material applied within the annulus, flush with bottom surface of floor or both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE MAX Intumescent Sealant
- B1. Fill, Void or Cavity Material* (Optional, Not Shown) — Sealant — Min 13 mm (1/2 in.) thickness of fill material applied within the annulus, flush with top surface of floor or both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC —FS-ONE MAX Intumescent Sealant
FT and FTH Rating is 1/4 hr when Items 3A and 3B are used. FT and FTH Rating is 2 hr when Items 3A1 and 3B1 are used.
- C. Metal Cover Plate — Min 18 ga. galv steel rectangular cover plate consisting of two halves with min 51 mm (2 in.) overlap at seam. Cover plate sized to overlap floor or wall surfaces by min 38 mm (1-1/2 in.). Overall length and width of cover plate shall not exceed opening diam plus 102 mm (4 in.). Cover plate cut to an ID that is max 6 mm (1/4 in.) larger than OD of pipe. Installed at underside of floor or both sides of wall between collar and floor or wall surfaces. Secured to floor or wall surfaces with min 6 mm (1/4 in.) diam by min 32 mm (1-1/4 in.) long steel expansion bolts or min 3.7 mm (0.145 in.) diam by 32 mm (1-1/4 in.) long powder actuated fasteners utilizing a 36 mm (1-7/16 in.) diam by 1.6 mm (1/16 in.) thick steel washer. As alternates to the anchors specified above, Hilti 6 mm (1/4 in.) diam by 32 mm (1-1/4 in.) long KWIK-CON II+ concrete screw anchor, or Hilti 6 mm (1/4 in.) diam by 44 mm (1-3/4 in.) long KWIK-BOLT 3 steel expansion anchor or Hilti X-DNI 27 P8 S15 powder actuated floor pin with integral nom 14 mm (9/16 in.) diam washer may be used. One fastener required at each corner of cover plate and at each end of seam. Intermediate fasteners shall be provided around periphery of plate such that spacing between fasteners does not exceed 127 mm (5 in.).
- D. Fill, Void or Cavity Material* — Wrap Strip - Two layers of intumescent wrap strip are continuously wrapped around the pipe with ends held in place with masking or aluminum tape. Wrap strip butted tightly against bottom surface of floor or both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E W45/1-3/4" Firestop Wrap Strip
- E. Steel Collar — Steel collar fabricated from coils of precut min 1.6 mm (0.016 in.) thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be nom 44 mm (1-3/4 in.) deep with 25 mm (1 in.) wide by 51 mm (2 in.) long anchor tabs on 44 mm (1-3/4 in.) centers for securement to the underside of floor or both surfaces of wall. The opposite side incorporates retainer tabs, 13 mm (1/2 in.) wide by 4.8 mm (3/16 in.) long, prebent toward the pipe surface. Collar shall be tightly wrapped over the wrap strip, overlapping min. 25 mm (1 in.) at seam. A nom 13 mm (1/2 in.) wide stainless steel hose clamp shall be secured to the collar at its mid-height. Optional securement of the collar may be accomplished with two sheet metal screws screwed though the overlapping portion of the collar. The length of the sheet metal screws shall not exceed the thickness of the wrap strip. Every other anchor tab or with 3 equal angle tabs of collar secured to concrete slab at with 6 mm (1/4 in.) diam by 44 mm (1-3/4 in.) long steel expansion type masonry fasteners, 6 mm (1/4 in.) diam by 44 mm (1-1/2 in.) long steel concrete screws or 3.8mm (0.145 in.)diam by 32 mm (1-1/4 in.) long powder actuated fasteners utilizing a 37 mm (1-7/16 in.) diam by 1.6 mm (1/16 in.) thick steel washer. As alternates to the anchors specified above, Hilti 6 mm (1/4 in.) diam by 32 mm (1-1/4 in.) long KWIK-CON II+ concrete screw anchor, Hilti 6 mm (1/4 in.) diam by 44 mm (1-3/4 in.) long KWIK-BOLT 3 steel expansion anchor or Hilti X-DNI 27 P8 S15 powder actuated floor pin with integral nom 14 mm (9/16 in.) diam washer may be used. For anchor hooks located over the metal cover plate, the anchor hooks are to be secured to metal cover plate with no. 8 x 10 mm (3/8 in.) long or no. 10 x 13 mm (1/2 in.) long self-tapping steel screws with min 13 mm (1/2 in.) diam steel washers. In floor assemblies, one collar to be used at the bottom of the concrete floor only. In wall assemblies, a collar is used on both surfaces.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.