



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

System No. C-AJ-2021

F Rating — 2 and 3 Hr (See Item 2)

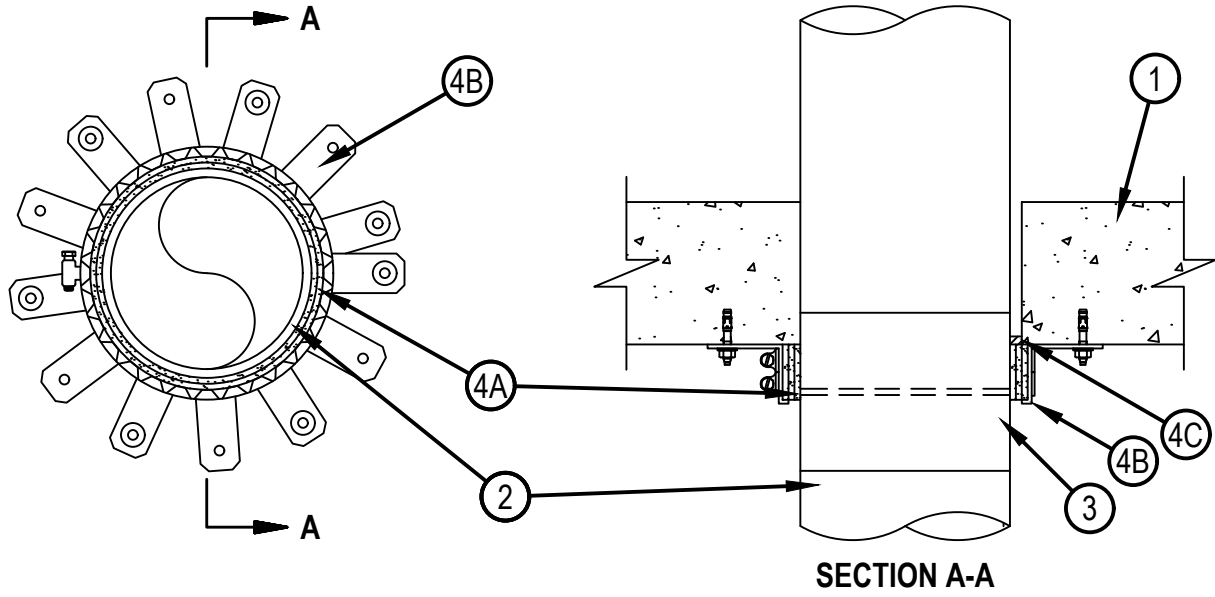
FT Rating — 0, 1-1/4, 2 and 3 Hr (See Item 2 and 4)

FH Rating — 0, 2 and 3 Hr (See Item 2 and 4)

FTH Rating — 0, 1-1/4, 2 and 3 Hr (See Item 2 and 4)



CAJ 2021



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 1600-2400 kg/m³ (100-150 pcf) concrete. Floor may also be constructed of any min 6 in. thick UL Classified hollow core Precast Concrete Units*. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 178 mm (7 in.).

See Concrete Blocks (CAZT) and Precast Concrete Units (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrants — One nonmetallic pipe to be installed concentrically or eccentrically within the firestop system. Annular space between pipe and periphery of opening to be as shown in the table below. The following types and sizes of nonmetallic pipes may be used:

- A. Polyvinyl Chloride (PVC) Pipe — Nom 152 mm (6 in.) diam (or smaller) Schedule 40 solid or cellular core PVC for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
- B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 152 mm (6 in.) diam (or smaller) SDR11 or SDR13.5 CPVC for use in closed (process or supply) piping systems.
- C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 152 mm (6 in.) diam (or smaller) Schedule 40 solid or cellular core ABS for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
- D. Flame Retardant Polypropylene (FRPP) Pipe — Nom 102 mm (4 in.) diam (or smaller) Schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
- E. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 152 mm (6 in.) diam (or smaller) SDR 11 CPVC for use in closed (process or supply) piping systems.
IPEX INC — AquaRise
- F. Rigid Nonmetallic Conduit+ — Nom 102 mm (4 in.) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).



Hilti Firestop Systems

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June 08, 2016

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Nom Diam of Pipe, mm (in.) (or smaller)	Min/Max Annular Space mm (in.)	F Ratings, Hr	FT & FTH Ratings, Hr	FH Ratings, Hr
38 (1-1/2)	0-6 mm (0-1/4)	3	2	3
51 (2)	0-6 mm (0-1/4)	3	2	3
76 (3)	0-13 mm (0-1/2)	3	2	3
102 (4)	0-13 mm (0-1/2)	3	2	3
102 (4) with optional coupling	0-13 mm (0-1/2)	2	1-1/4	2
152 (6)	0-10 (0-3/8)	3	3	3

3. Nonmetallic Pipe Coupling — (Optional for ABS or PVC pipes ONLY)-Nom 102 mm (4 in.) diam (or smaller) Schedule 40 ABS or PVC pipe coupling only. Coupling installed such that top of coupling extends a max 25 mm (1 in.) into opening of floor assembly or 25mm (1 in.) into opening on either side of wall assembly.

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

A. Fill, Void or Cavity Material* — Wrap Strip - Layers of intumescent wrap strip are continuously wrapped around the pipe with ends held in place with tape. Wrap strip butted tightly against bottom surface of floor or both surfaces of wall. Size of wrap strip and number of layers for a given size penetrant are shown in table below.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E W25/1" or CP648-E W45/1-3/4" Wrap Strip

Product Designation	Max Pipe Size mm (in.)	Number of Layers	Nom. Wrap Strip Width (in.)
CP648-E W25/1"	76 (3)	2	25 (1)
CP648-E W45/1-3/4"	76 (3)	1	44 (1-3/4)
CP648-E W25/1"	102 (4)	3	25 (1)
CP648-E W45/1-3/4"	102 (4)	2	44 (1-3/4)
CP648-E W45/1-3/4"	102 (4) with optional coupling	3	44 (1-3/4)
CP648-E W45/1-3/4"	152 (6)	3	44 (1-3/4)

B. Steel Collar — Steel collar fabricated from coils of precut min 0.41 mm (0.016 in.) thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be nom 25 mm (1 in.) (for 25 mm wide wrap strip) or 44 mm (1-3/4 in.) (for 44 mm wide wrap strip) 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. Every other anchor tab of collar secured to concrete slab with 6 mm (1/4 in.) diam by 44 mm (1-3/4 in.) long steel expansion type masonry fasteners, 38 mm (1-1/2 in.) long concrete screw anchors or 3.7 mm (0.145 in.) diam by 32 mm (1-1/4 in.) long powder actuated fasteners utilizing a 36.5 mm (1-7/16 in.) diam by 1.6 mm (1/16 in.) thick steel washer. 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.

C. Fill, Void or Cavity Materials* — Sealant -Min 6 mm (1/4 in.) thickness of fill material applied within the annulus, flush with bottom surface of floor or both surfaces of wall. When optional coupling is used, sealant to be installed at a min 13 mm (1/2 in.) thickness.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

Note: When FRPP pipe is used, FT, FH and FTH Ratings are 0 Hr.

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

+Bearing the UL Listing Mark



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