



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

## System No. C-AJ-2054

F Ratings — 2 and 3 Hr (See Item 2)

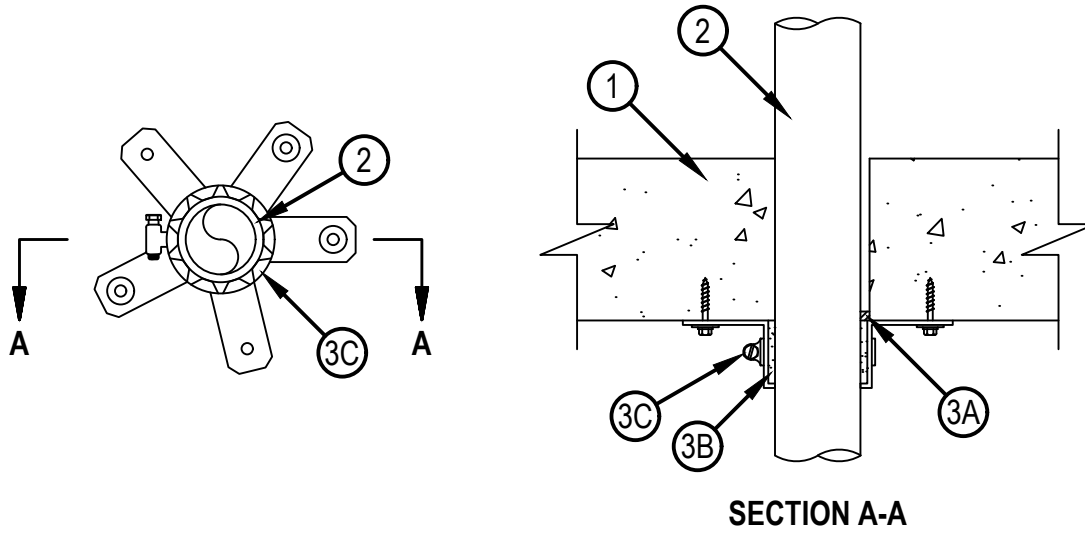
FT Ratings — 1-1/4, 2, 2-3/4 and 3 Hr (See Item 2)

FH Ratings — 0 and 3 Hr (See Item 2)

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



CAJ 2054



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/m<sup>3</sup> or 100-150 pcf) concrete. Floor may also be constructed of any min 152 mm (6 in.) thick UL Classified hollow core Precast Concrete Units\*. Wall may also be constructed of any UL Classified Concrete Blocks\*. See Item 2 Table for max diam of opening.

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. Min annular space between pipe and periphery of opening to be min 0 mm (point contact). Max annular space between pipe and periphery of opening to be as specified in Item 2 Table. The following type and sizes of nonmetallic pipe may be used:

- A. Polypropylene (PP) Pipe — Nom 51 mm (2 in.) diam (or smaller) Schedule 80 PP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
- B. Polypropylene (PP-R) Pipe — Nom 2 in. (63 mm OD) diam (or smaller) Aquatherm Greenpipe SDR 7.4 or 11 pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
- C. Polypropylene (PP-RCT) Pipe — Nom 2 in. (63 mm OD) diam (or smaller) Aquatherm Bluepipe SDR 9 or 11 pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
- D. Polypropylene (PP-RCT) Pipe — Nom 2 in. (63 mm OD) diam (or smaller) Nupi Americas Niron pipe SDR 7.3, 9 or 11 pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
- E. Polypropylene (PP-RCT) Pipe — Nom 2 in. (63 mm OD) diam (or smaller) Aquatechnik NA Fusion-Tech pipe SDR 7.4 or 11 pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
- F. Polypropylene (PP-RCT) Pipe — Nom 2 in. (63 mm OD) diam (or smaller) Uponor pipe SDR 9 or 11 pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
- G. HR Polyvinyl Chloride (PVC-HR) Pipe — Nom 2 in. (63 mm OD) diam (or smaller) NAPSYS-HR PVC Sch 40 pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.



Hilti Firestop Systems

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August 02, 2021

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The hourly ratings, opening diam and max annular space for the firestop system are dependent on the penetrant type used as noted in the Table below.

Penetrant Type	F Rating Hr	FT Rating Hr	FH Rating Hr	FTH Rating Hr	Max Opening Diam Mm (in.)	Max Annular Space mm (in.)
2A	2	1-1/4	0	0	67 (2-5/8)	6 (1/4)
2G	2	2	0	0	67 (2-5/8)	6 (1/4)
2B, 2C	3	2-3/4	3	2-3/4	76 (3)	13 (1/2)
2D, 2E, 2F	3	3	3	3	76 (3)	13 (1/2)

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

A. Fill, Void or Cavity Materials\* — Sealant — Min 25.4 mm (1 in.) thickness of fill material applied within the annulus, flush with bottom surface of floor or both surfaces

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

B. Fill, Void or Cavity Material\* — Wrap Strip — Nom 44 mm (1-3/4 in.) wide intumescent wrap strip is continuously wrapped around the pipe one time with ends held in place with 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" Wrap Strip

C. Steel Collar — Steel collar fabricated from coils of precut min 0.4 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 5 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, 32 mm (1-1/4 in.) long concrete screw anchors or 3.5 mm (0.145 in.) diam by 32 mm (1-1/4 in.) long powder actuated fasteners utilizing a nom 15 mm (9/16 in.) diam 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 P8S15 powder actuated floor pin with integral nom 15 mm (9/16 in.) diam steel washer may be used. 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 wall surfaces.

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



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