

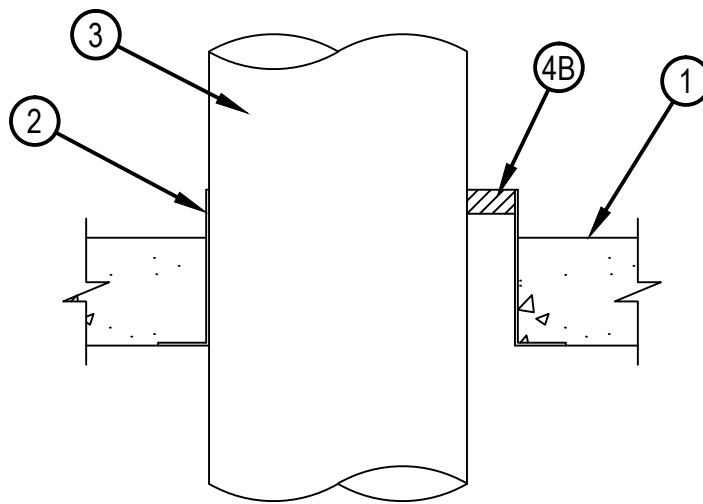
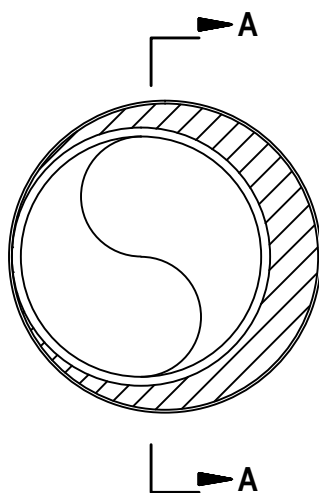


Classified by  
Underwriters Laboratories, Inc.  
to UL 1479 and CAN/ULC-S115

## System No. C-AJ-1575

CAJ 1575

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 2 and 3 Hr (See Item 4B)	F Ratings — 2 and 3 Hr (See Item 4B)
T Rating — 0 Hr	FT Rating — 0 Hr
W Rating — Class 1 (See Item 4)	FH Ratings — 2 and 3 Hr (See Item 4B)
	FTH Rating — 0 Hr



**SECTION A-A**

1. Floor or Wall Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow core Precast Concrete Units\*. Max diam of opening is 30-7/8 in. (784 mm) when concrete floor or wall is used and max 7 in. (178 mm) when precast concrete units are used.

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

1A. Floor Assembly - (Optional - Not Shown) — The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series designs in the UL Fire Resistance Directory and as summarized below:

A. Concrete — Min 2-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete.

B. Steel Floor and Form Units\* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.

2. Steel Sleeve — See Table in Item 4B for when sleeve is required. Also not required for hollow core precast concrete floors. Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 8 in. (203 mm) above top of floor or beyond either surface of wall. As an alternate, in floors only, min 26 gauge galvanized sheet steel sleeve provided with a min. 26 gauge galvanized steel square flange spot welded to the bottom of the sleeve and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sheet metal sleeve is to be cast in place and may extend a max of 2 in. (51 mm) above the top surface of the concrete floor, except that when sleeve is greater than nom 13 in. (330 mm) diam, sleeve shall be installed flush with both surfaces of floor.

3. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening or sleeve shall be min 0 in. (point contact). See Table in Item 4B for max annular space. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit — Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.

D. Conduit — Nom 4 in. (102 mm) diam (or smaller) electrical metallic tubing (EMT).

E. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

F. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.



**Hilti Firestop Systems**

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February 20, 2015

# System No. C-AJ-1575

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

A. Packing Material — (Not Shown.) - Min 1 in. (25 mm) thickness of polyethylene backer rod, mineral wool batt or glass fiber insulation firmly packed into opening as a permanent form. Packing material to be recessed from top or bottom surface of floor/sleeve or from both surfaces of wall/sleeve to accommodate the required thickness of fill material (Item 4B). Packing material is required as specified in Table below.

A1. Forming Materials\* — (Optional, Not Shown) As an alternate to Item 4A, min 1 in. (25 mm) thickness of forming material to be foamed into the opening as a permanent form. Forming material to be recessed from top or bottom surface of floor/sleeve or from both surfaces of wall/sleeve to accommodate the required thickness of fill material (Item 4B).

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CF812 or CF-AS CJP Foam Sealant

A2. Packing Material — (Not Shown.) - For W Rating, floors only, min 4 in. thick, min 4 pcf (64 kg/m<sup>3</sup>) mineral batt insulation tightly packed into sleeve and recessed from top of sleeve to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Materials\* — Sealant — Applied to fill the annular space flush with top or bottom surface of floor/sleeve. In hollow core precast concrete floors, fill material to be installed flush with the bottom of the floor. Fill material may optionally be installed flush with the top of the assembly. In wall assemblies, fill material to be installed symmetrically on both sides of wall or floor, flush with wall/sleeve or floor surface. In wall assemblies, an additional bead of fill material shall be applied at the point contact location between penetrant and sleeve or between penetrant and concrete, at top surface of floor/sleeve and at both surfaces of wall/sleeve. The bead shall be min 1/2 in. (13 mm) diam and shall extend over the point contact location to the 1/4 in. (6 mm) annular space. For W Rating, fill material to be installed flush with top of sleeve only and an additional min 1/2 in. (13 mm) bead of sealant shall be applied at the sleeve/concrete interface on the top surface of the floor. The min required fill material thickness and the location of the sealant at top or bottom of floor opening are dependent upon a number of parameters, as shown in the table below.

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

Note: W Rating applies only when FS-ONE MAX Intumescent Sealant is used.

Min Floor or Wall Thick, In. (mm)	Nom Diam of Copper Pipe or Tube In. (mm)	Nom Diam of Steel/Iron Pipe or Conduit In. (mm)	Max Annular Space In. (mm)	Min Sealant Thick. In. (mm)	Sealant Flush with Top or Bottom	Sleeve	Packing Mtl	F Rating Hr
2-1/2 (64)	1/2 - 4(13 - 102)	1/2 - 30 (13 - 762)	7/8 (22)	1/2 (13)	Top	No	No	2
2-1/2 (64)	1/2 - 4(13 - 102)	1/2 - 8(13 - 203)	2-7/8 (73)	1 (25)	Top	Yes	No	2
2-1/2 (64)	1/2 - 4(13 - 102)	1/2 - 8(13 - 203)	1-7/8 (48)	1/2 (13)	Top	Yes	No	2
2-1/2 (64)	1/2 - 4(13 - 102)	1/2 - 12(13 - 305)	7/8 (22)	1 (25)	Bottom	Yes	No	2
2-1/2 (64)	1/2 - 4(13 - 102)	1/2 - 8(13 - 203)	2-7/8 (73)	1 (25)	Top	Optional	Yes	2
2-1/2 (64)	1/2 - 6(13 - 152)	1/2 - 30 (13 - 762)	2-7/8 (73)	1 (25)	Top	Yes	Yes	2
4-1/2 (114)	1/2 - 4(13 - 102)	1/2 - 10(13 - 254)	3-1/4 (83)	1 (25)	Top or Bottom	No	No	3
4-1/2 (114)	1/2 - 4(13 - 102)	1/2 - 30(13 - 762)	7/8 (22)	1/2 (13)	Top	No	No	3
4-1/2 (114)	1/2 - 4(13 - 102)	1/2 - 8(13 - 203)	1-7/8 (48)	1/2 (13)	Bottom	No	No	2

\* 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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