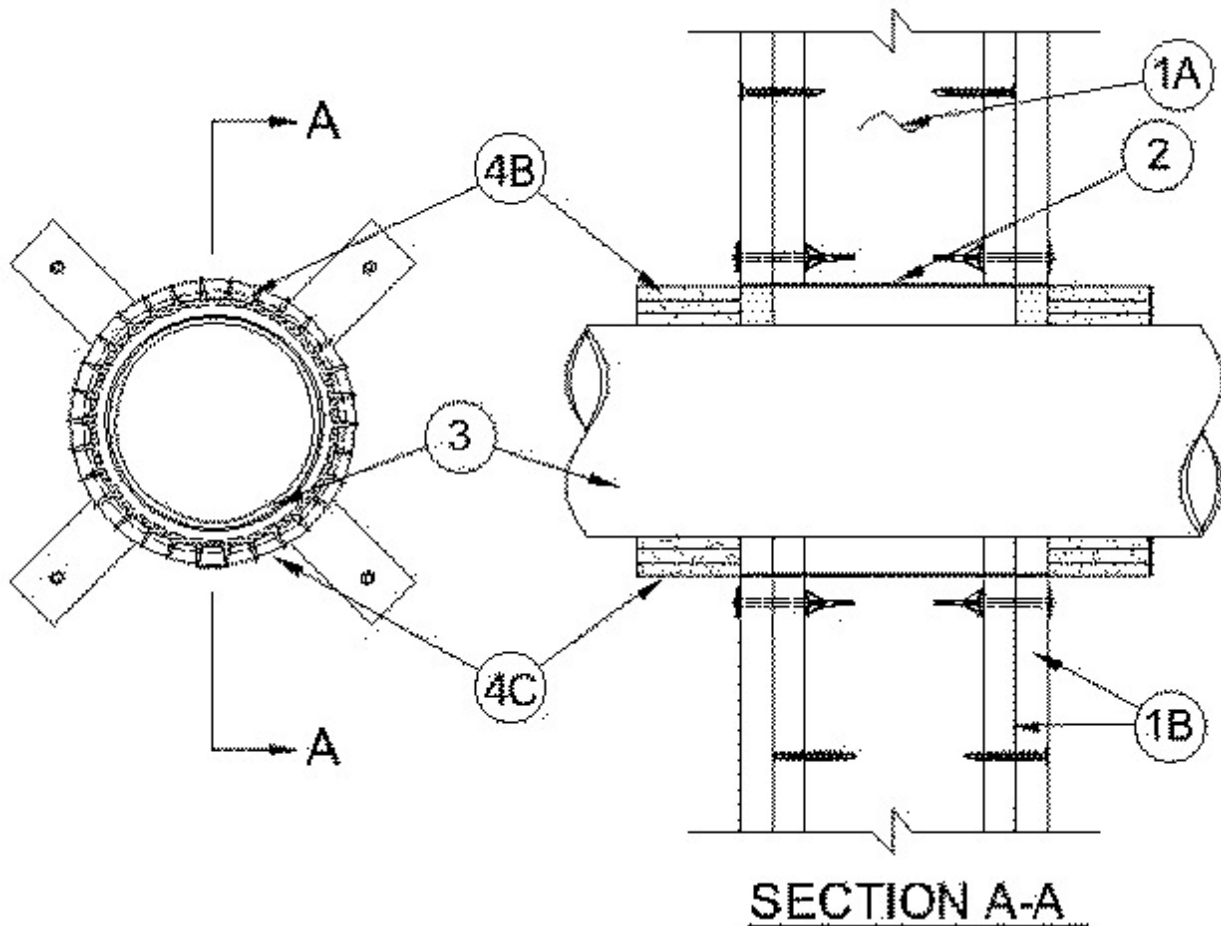




System No. W-L-2167

July 16, 2014

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 4)	F Ratings - 1 and 2 Hr (See Item 4)
T Ratings - 0, 1 and 1-1/2 Hr (See Item 4B)	FT Ratings - 0, 1 and 1-1/2 Hr (See Item 4B)
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Ratings - 1 and 2 Hr (See Item 4)
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Ratings - 0, 1 and 1-1/2 Hr (See Item 4B)
	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3- 1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Min 5/8 in. (16 mm) thick. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 5 in. (127 mm).

The hourly F and T Ratings of the firestop system are dependent on the hourly fire rating of the wall assembly in which it is installed and type of through penetrant as shown in Item 3B.

2. Metallic Sleeve — (Optional) Cylindrical sleeve fabricated from min 0.018 in. (0.46 mm) thick (28 gauge) galv sheet steel and having a min 1 in. (25 mm) lap along the longitudinal seam. Sheet steel coiled to a diam less than circular cutouts in wall assembly, inserted through both sides of wall and allowed to uncoil against the circular cutouts in the wall assembly. Sleeve to be installed flush with each surface of the wall assembly.

2A. Metallic Sleeve — (Optional) - As an alternate to Item 2A, steel sleeve may consist of Schedule 5 (or heavier) steel pipe, rigid steel conduit or EMT friction-fitted into wall assembly flush with each surface of the wall assembly.

3. Through Penetrants — One nonmetallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). Pipe or conduit to be rigidly supported on both sides of the wall assembly.

The T Rating of the firestop system is dependent upon hourly rating of the wall, the type and max diam of the through penetrant and the number of layers of wrap strip used as tabulated in Item 4B. The following types and sizes of nonmetallic pipes or conduit may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 cellular or solid core PVC pipe for use in closed (process or supply) or vented (drain, waste, or vent) piping systems.

B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply).

C. Rigid Nonmetallic Conduit+ — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).

D. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 cellular or solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

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

A. Fill, Void or Cavity Material* — Sealant — Min 5/8 (16 mm) in. thickness of fill material applied within annulus, flush with both surfaces of wall. At the point contact location between through penetrant and gypsum wallboard, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the gypsum wallboard/through penetrant interface on both surfaces of wall.

RECTORSEAL — FS1900, FS1901, FS1905, FS1929, or FS 900+ Sealant, Metacaulk MC 150+, Biostop BF 150+

B. Fill, Void or Cavity Material* — Wrap Strip — Nom 1/4 in. (6 mm) thick intumescent material faced on both sides with a plastic film, supplied in 1 in. (25 mm) wide strips. The layers of wrap strips are individually wrapped around the through penetrant with ends butted and held in place with masking tape. Butted ends in successive layers shall be offset. The edge of the wrap strips shall abut each surface of the wall. The layers of wrap strips are installed on each side of the wall.

The F and T rating of the firestop system are dependent upon hourly rating of the wall, the type and max diam of the through penetrant and the number of layers of wrap strip used as tabulated below:

Rating of Wall, Hr	Type of Pipe or Conduit	Max Diam of Through Penetrant, In.(mm)	Number of Wrap of Wrap Strips	F Rating, Hr	T Rating Hr
2	PVC, CPVC	4 (102)	2	2	0
2	ABS	4 (102)	3	2	1-1/2
2	PVC, CPVC	4 (102)	3	2	1

2	PVC, CPVC	3 (76)	2	2	1
2	ABS	3 (76)	2	2	1-1/2
2	PVC, CPVC	2 (51)	1	2	1
2	ABS	2 (51)	1	2	1-1/2
1	PVC, CPVC	4 (102)	3	1	0
1	PVC, CPVC	4 (102)	2	1	0
1	PVC, CPVC, ABS	3 (76)	2	1	0
1	PVC, CPVC, ABS	2 (52)	1	1	0

RECTORSEAL — FlameSafe(TM) Wrap Strip

C. **Steel Collar** — Collar fabricated from coils of precut 0.018 in. (0.46 mm) thick (No. 28 MSG) galv sheet steel available from wrap strip manufacturer. Collar shall be nom 1 in. (25 mm) deep with min four 1-1/4 in. (32 mm) wide by 2 in. (51 mm) long anchor tabs for securement to the wall. Retainer tabs, 3/4 in. (19 mm) wide tapering down to 3/8 in. (10 mm) wide and located opposite the anchor tabs, are folded 90 degree toward through penetrant surface to maintain the annular space around the through penetrant and to retain the wrap strips. Steel collar wrapped around wrap strips and through penetrant with a 1 in. (25 mm) wide overlap along its perimeter joint. Steel collar tightened around wrap strips and through penetrant using min 1/2 in. (13 mm) wide by 0.028 in. (0.7 mm) thick stainless steel hose clamp at midheight of steel collar. Collar secured to wall with 1/8 in. (3 mm) diam by min 2-3/4 in. (70 mm) long steel molly bolts in conjunction with min 1/4 in. (6 mm) by 1-1/4 in. (32 mm) diam steel fender washers. Steel collars are installed on each side of wall.

+Bearing the UL Listing Mark

*Bearing the UL Classification Marking