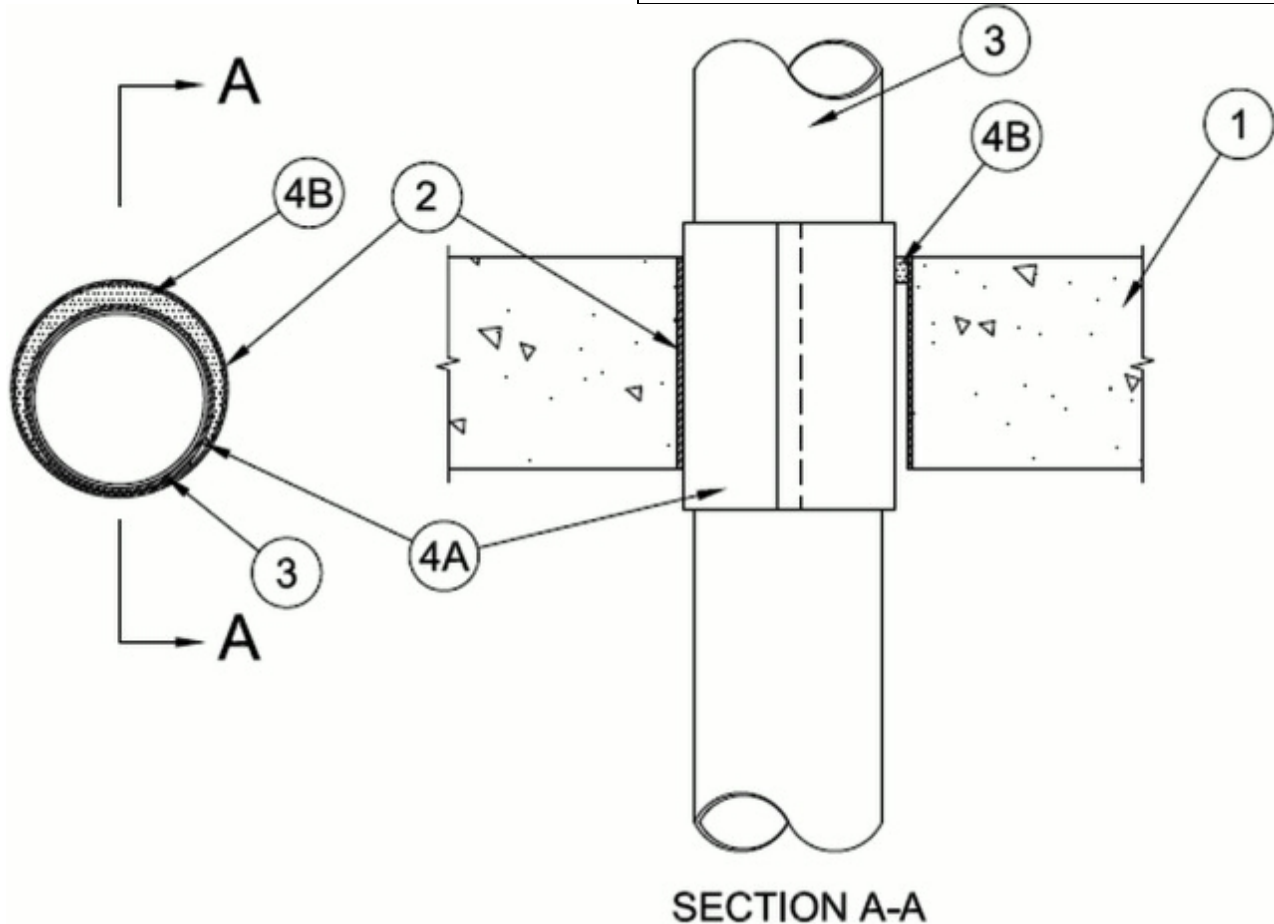




System No. C-AJ-2661

May 27, 2013

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 and 3 Hr (See Item 3)	F Rating — 2 and 3 Hr (See Item 3)
T Ratings — 0, 1/2, 1-1/4, 1-1/2, 1-3/4 and 2 Hr (See Item 2)	FT Ratings — 0, 1/2, 1-1/4, 1-1/2, 1-3/4 and 2 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/sq ft (See Item 4)	FH Rating — 3 Hr
L Rating At 400 F — Less Than 1 CFM/sq ft (See Item 4)	FTH Ratings — 0, 1-1/4, 1-1/2, 1-3/4 and 2 Hr (See Item 2)
	L Rating At Ambient — Less Than 1 CFM/sq ft (See Item 4)
	L Rating At 400 F — Less Than 1 CFM/sq ft (See Item 4)



System tested with a pressure differential of 2.5 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side.

1. **Floor or Wall Assembly** — Min 4-1/2 in. (114 mm) 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***. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units***. If the firestop system is installed within a hollow-core precast concrete unit, max diam of opening shall be 7 in. (178 mm). Otherwise, max diam of opening is 10 in. (254 mm).

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

1A. **Steel Deck/Floor Assembly** — (Not Shown) — As an alternate to Item 1, the floor assembly may consist of a fluted steel deck/concrete floor assembly. The floor assembly shall be constructed of the materials and in the manner described

in the individual Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Form Units*** — 1-1/2 to 3 in. (38 to 76 mm) deep galv fluted units.

B. **Concrete** — Min 4-1/2 in. (114 mm) thick reinforced concrete, as measured from the top plane of the floor units.

2. **Metallic Sleeve** — (Optional) - Nom 10 in. (254 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with both surfaces of floor or wall or a 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 floor or wall assembly, inserted through both sides of floor or wall and allowed to uncoil against the circular cutouts in the wall assembly, flush with both surfaces of floor or wall.

The T Rating is 0 hr when optional sleeve is used.

3. **Through Penetrants** — One nonmetallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe or conduit and periphery of opening shall be min 1/4 in. (6 mm) to max 2-1/2 in. (64 mm). Pipe or conduit to be rigidly supported on both sides of the floor or wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. **Polyvinyl Chloride (PVC) Pipe** — Nom 8 in. (203 mm) diam (or smaller) Schedule 40 solid or cellular 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 8 in. (203 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

C. **Rigid Nonmetallic Conduit+** — Nom 6 in. (152 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 solid or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

E. **Polyvinylidene Fluoride (PVDF) Pipe** — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 PVDF pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

F. **Flame Retardant Polypropylene (FRPP) Pipe** — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

The T Rating is 2 hr for Penetrants A and B of nom 8 in. diam. The T Rating is 1-3/4 hr for Penetrants A and B with nom diam less than 8 in. and for Penetrant C.. The T Rating for Penetrant D is 1-1/4 hr. The T Rating is 1-3/4 hr for Penetrant E with nom diam of 4 in. (102 mm) and less. T Rating is 1-1/2 hr for Penetrant E of nom 6 in. (152 mm) diam pipe installed in nom 8 in. (203 mm) diam opening and 2 hr for nom 6 in. (152 mm) diam pipe installed in nom 10 in. (254 mm) opening. The T Rating is 1/2 hr for Penetrant F of nom 2 in. diam.

The F Rating is 3 hr for Penetrants A, B, C and D. The F Rating is 3 hr for Penetrant E of nom 4 in. (102 mm) and Penetrant F of nom 2 in. (51 mm) or smaller diam. The F Rating is 2 hr for Penetrant E of nom 6 in. (152 mm) diam.

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

A. **Firestop Device** — Galv steel sleeve lined with an intumescent material sized to fit the specific diam of the through penetrant. Device to be installed in accordance with the manufacturer's installation instructions along with the following: Device to be wrapped around outer circumference of through penetrant and installed through the annular space of the opening. The device shall be secured together by means of min 3/4 in. (19 mm) wide glass cloth electrical tape, duct tape, fiberglass tape, pop rivets, hose clamps or tie wires around the outer circumference of through penetrant, spaced max 2 in. (51 mm) OC. In floors and walls having a nominal thickness of 8 in. (203 mm) or less, the device shall be centered within the floor or wall and extend equally beyond each surface of the floor or wall. In floors and walls having a nominal thickness greater than 8 in. (203 mm), two devices shall be installed within the opening with butted ends and extending equally beyond each surface of the floor or wall.

RECTORSEAL — FlameSafe® Intumescent Sleeve, Metacaulk Intumescent Sleeve or Biostop Intumescent Sleeve

A1. **Packing Material** — (not shown) — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral batt insulation firmly packed into annulus and recessed from top surface of floor or both surfaces of wall to accommodate the required thickness of fill material, (Item 4 B). Required only when annular spaces are greater than 1 in. (25 mm).

B. **Fill, Void or Cavity Material* — Sealant** — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or both surfaces of wall. When hollow-core precast concrete unit is used, min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with both surfaces of floor.

RECTORSEAL — Metacaulk 1000, 150+, Biostop 500+, 150+, FlameSafe 1900, 900+

C. **Fill, Void or Cavity Material* — (Optional)** — Min 1/2 in. (13 mm) thickness of fill material applied within the firestop device, flush with the top of the device in floors or flush with both ends of the device in walls.

RECTORSEAL — Metacaulk 1000, 150+, Fire rated putty, Biostop 500+, 150+, Fire rated putty, FlameSafe 1900, 900+, Fire rated putty.

The L Rating applies only when Item 4C is used.

*Bearing the UL Classification Mark