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

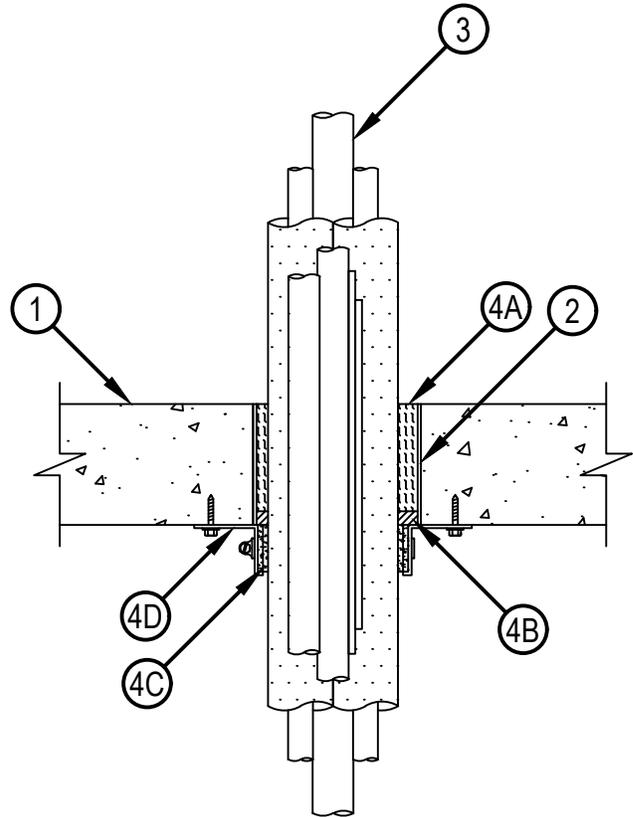
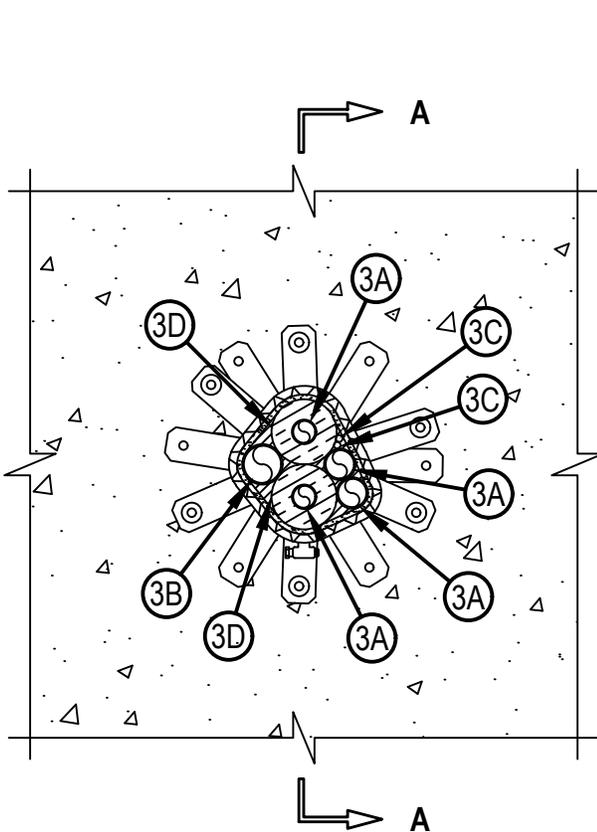
System No. C-AJ-8334

CAJ 8334

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating – 2 Hr	F Rating – 2 Hr
T Rating – 1/4 Hr	FT Rating – 1/4 Hr
	FH Rating – 2 Hr
	FTH Rating – 1/4 Hr

BOTTOM VIEW

SECTION A-A



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 floor or min 5 in. thick lightweight or normal weight concrete. Floor assembly may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core Precast Concrete Units*. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening 5 in. (127 mm).
See Concrete Blocks (CAZT) and Precast Concrete Units (CFTV) categories in Fire Resistance Directory for names of manufacturers.
2. Metallic Sleeve — (Optional) — Nom 5 in. (127 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces.



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3. Through-Penetrants — Pipes, conduits, tubing or cables to be bundled within opening such that the aggregate cross-sectional area of penetrants in opening to be max 66 percent of the cross-sectional area of the opening in floor or wall. The space between the penetrants and between the penetrants and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1-1/2 in. (38 mm). Penetrants to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of penetrants may be used:

A. Metallic Penetrants — The following types and sizes of metallic pipes, conduits or tubing may be used:

I. Steel Pipe — Nom 3/4 in. (19 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe

II. Iron Pipe — Nom 3/4 in. (19 mm) diam (or smaller) cast or ductile iron pipe.

III. Conduit — Nom 3/4 in. (19 mm) diam (or smaller) steel electrical metallic tubing (EMT) or nom 1 in. diam (or smaller) rigid steel conduit.

IV. Copper Tubing — Nom 3/4 in. (19 mm) diam (or smaller) Type L (or heavier) copper tubing.

V. Copper Pipe — Nom 3/4 in. (19 mm) diam (or smaller) Regular (or heavier) copper pipe.

B. Nonmetallic Penetrants — The following types and sizes of nonmetallic pipes, conduits, or tubing may be used:

I. Polyvinyl Chloride (PVC) Pipe — Nom 1-1/4 in. (32 mm) diam (or smaller) Schedule 40 PVC pipe for use in vented (drain, waste or vent) or closed (process or supply) piping systems.

II. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 1-1/4 in. (32 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

III. Rigid Nonmetallic Conduit+ — Nom 1-1/4 in. (32 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA 70).

C. Cables — Max 4 pair No. 18 AWG (or smaller) copper conductor thermostat cable with PVC jacket and insulation.

D. Insulated Metallic Pipe Assemblies* — (BONH) - A max of two nom 3/4 in. diam (19 mm) or smaller copper pipe or tube provided with nom 3/4 in. (19 mm) thick (or less) low density polyethylene (LDPE) flexible foam. Insulated penetrants and non-insulated penetrants to be tightly bundled together.

PDM US LCC - GelBlack PREINSULATED COPPER ROLL

4. Firestop System — The details of the firestop system shall be as follows:

A. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf or 64 kg/m³ mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be flush with top surface of floor or recessed from both surfaces of wall as required to accommodate the required thickness of fill material. In floors constructed of hollow-core concrete, packing material to be recessed from bottom surface of floor as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Materials* - Sealant — Min 1/2 in. (13 mm) thickness of sealant applied within the annulus, flush with bottom surface of floor or with both surfaces of wall. Additional sealant to be applied within interstices of through penetrant bundle to the max extent possible.

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

C. Fill, Void or Cavity Material* — Wrap Strip — Nom 3/16 in. (5 mm) thick by 1-3/4 in. (44 mm) wide intumescent wrap strip individually wrapped around the through penetrant bundle twice with the ends butted and held in place with masking tape. Butted ends in successive layers to be offset a min of 1 in. (25mm) 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

D. Steel Collar — Steel collar fabricated from coils of precut min 0.016 in. thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be 1-3/4 in. (44 mm) (for 1-3/4 in. wide wrap strip) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs on 1-3/4 in. (44 mm) centers for securement to the underside of floor or both surfaces of wall. The opposite side incorporates retainer tabs, 1/2 in. (13 mm) wide by 3/16 in. (5 mm) long, prebent toward the through penetrant bundle. Collar shall be tightly wrapped over the wrap strip, overlapping min. 1 in. (25 mm) at seam. A nom 1/2 in. (13 mm) wide stainless steel hose clamp shall be secured to the collar at its mid-height. Every other anchor tab or with 3 equal angle tabs of collar secured to concrete slab at with 1/4 in. (6 mm) diam by 1-3/4 in. (44 mm) long steel concrete screws with 1-7/16 (37 mm) diam by 1/16 in. (1.6 mm) thick steel washers.

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.

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

