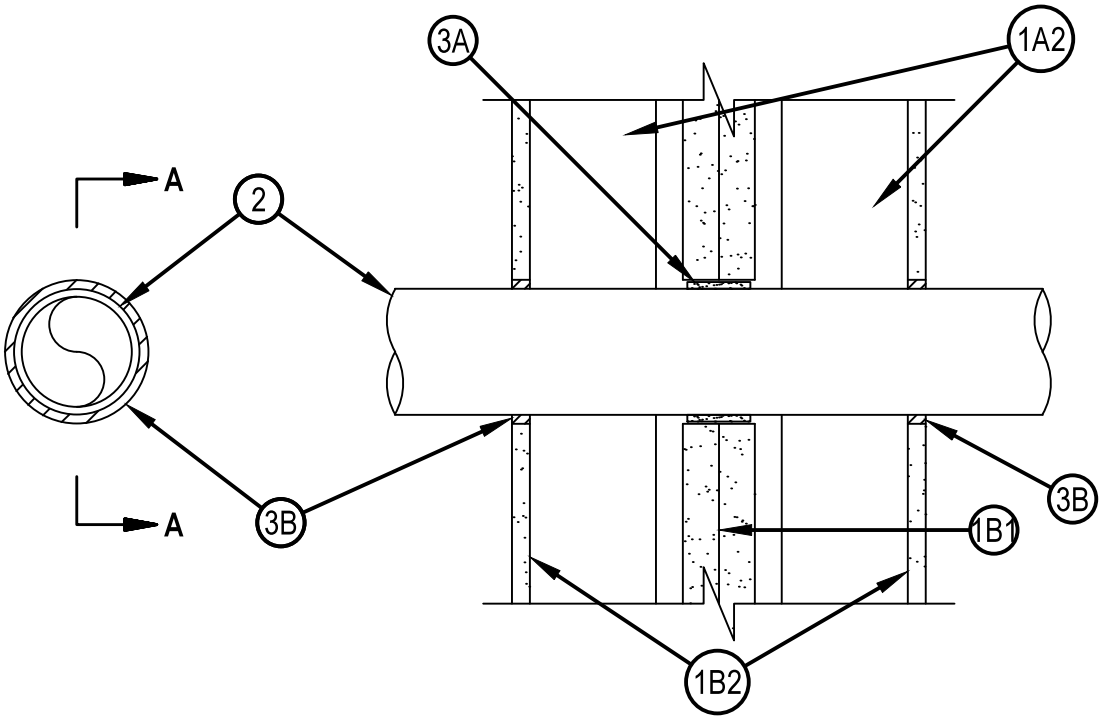
Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. W-L-2471

F Rating - 2 Hr
T Rating - 0 Hr
L Rating At Ambient - 1.2 CFM/sq ft
L Rating At 400 F - Less Than 1CFM/sq ft



SECTION A-A

1. Wall Assembly — The 2 hr fire-rated gypsum board, steel and wood stud wall assembly shall be constructed as described in the U300 desgins in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs —
      1. Framing shall consist of steel members formed from No. 25 MSG galv steel having "H" shaped flanged spaced 24 in. (610 mm) OC.
      2. Framing shall consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 24 in. (610 mm) OC. Studs cross braced at mid-height where necessary for clip attachment.
   B. Gypsum Board —
      1. Gypsum board shall consist of two layers of 1 in. (25 mm) thick gypsum board liner panels, supplied in nom 24 in. (610 mm) widths.
      2. Gypsum board shall consist of Classified or Unclassified - Min 1/2 in. (13 mm) thick, 4 ft. (1219 mm) wide, applied either horizontally or vertically.

   Max diameter of opening is 4 in. (102 mm).
2. Nonmetallic Pipe — One nonmetallic pipe or conduit centered within the firestop system. The annular space between the pipe or conduit and periphery of the opening shall be min. 3/16 in. (4.8 mm) to max 5/16 in. (8 mm). Pipe or conduit to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipe or conduit may be used:
   A. Polyvinyl Chloride (PVC) Pipe — Nom 3 in. (76 mm) diam (or smaller) Schedule 40 solid core 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 3 in. (76 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.
   C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 3 in. (76 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.
   D. Rigid Nonmetallic Conduit (RNC)+ — Nom 3 in. (76 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).

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

A. Fill, Void or Cavity Material* — Wrap Strip — One layer of wrap wrapped around the outer circumference of the pipe once with ends butted tightly and held in place with integrated tape. Wrap is then slid into the annular space such that it is centered with the layers of gypsum liner.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 648S - 1.5" US, CP 648S - 2" US, CP 648S - 3" US

B. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) depth of fill material applied within annulus flush with outer surfaces of gypsum board.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

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

+Bearing the UL Listing Mark