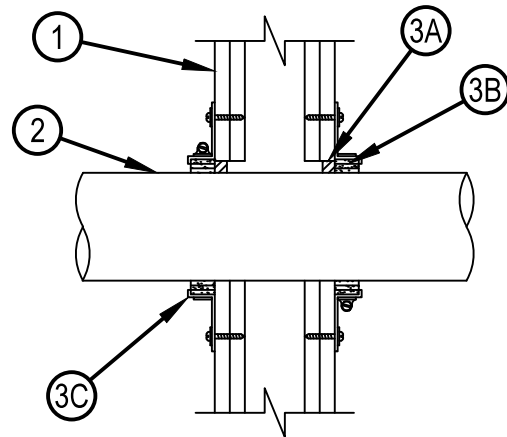
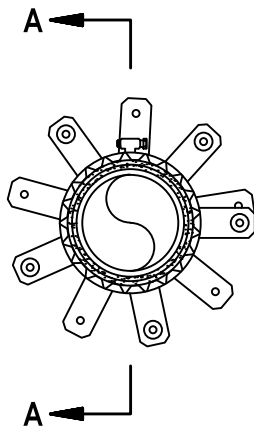




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System No. W-L-2335
F Rating — 1 and 2 Hr (See Item 1)
T Rating — 3/4, 1 and 1-1/2 Hr (See Item 3)

WL 2335



SECTION A-A

1. Wall Assembly — The 1 and 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, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
 - A. Studs — Wall framing shall consist of either wood or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
 - B. Gypsum Board* — The gypsum board type, thickness number of layers, fastener type and sheet orientation shall be specified in the individual Wall or Partition Design in the UL Fire Resistance Directory. Max diam of opening is 5 in. (127 mm).
 The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Through Penetrants — One nonmetallic pipe to be installed concentrically or eccentrically within the firestop system. Annular space between pipe and periphery of opening to be min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm). Pipe to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of nonmetallic pipes may be used:
 - A. Polyvinyl Chloride (PVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid or cellular core PVC for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
 - B. Chlorinated Polyvinyl Chloride (PVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) SDR13.5 CPVC for use in closed (process or supply) piping systems.
 - C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid or cellular core ABS for use in closed (process or supply) or vented (drain, waste or vent) piping systems.



Hilti Firestop Systems

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

A. Fill, Void or Cavity Materials* — Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall.

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

B. Fill, Void or Cavity Material* — Wrap Strip — Nom 3/16 in. (5 mm) thick by 1 in. (25 mm) wide intumescent wrap strip. Layers of wrap strip are continuously wrapped around the pipe with end held in place with tape. Wrap strip butted tightly against both surfaces of wall. The number of layers of wrap strip and T Ratings are based on the diam of pipe as shown in the following table:

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E W25/1" Wrap Strip

Nom Diam of Pipe, in. (mm)	Number of Wrap Strips	F Ratings, Hr	T Ratings, Hr
1-1/2 to 2 (38 to 51)	2	1 and 2	3/4
3 to 4 (76 to 102)	3	1	1
3 to 4 (76 to 102)	3	2	1-1/2

C. Steel Collar — Steel collar fabricated from coils of precut min 0.016 in. (0.4 mm) thick galv steel available from fill material manufacturer.

Collar shall be nom 1 in. (25 mm) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs on 1-3/4 in. (45 mm) centers for attachment to both surfaces of wall. The opposite side incorporates retainer tabs, 1/2 in. (13 mm) wide by 3/16 in. (5 mm) long, pre-bent toward the pipe surface. 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. Collar secured to both surfaces of wall by means of nom (1-1/4 in. (32 mm) long steel laminating drywall screws in conjunction with (1-1/4 in. (32 mm) diam steel fender washers. Collar fastened to wall at every other anchor tab.

* 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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