Hilti Corporation
Design Number HI/PF 120-08
Through Penetration
FS-ONE MAX Intumescent Firestop Sealant
ASTM E814, UL 1479, CAN/ULC-S115
Rating: See Table 1
Pressure Differential: Positive, 0.01 in. w.g. (2.5 Pa)

TABLE 1. RATINGS

	ASTM E814, UL 1479	CAN/ULC-S115
F-Rating	2 Hr	2 Hr
T-Rating	1/4 Hr	NA
FT-Rating	NA	1/4 Hr
FH-Rating	NA	2 Hr
FTH-Rating	NA	1/4 Hr

TOP VIEW

SECTION A-A

SECTION A-A

Floor/Ceiling Assembly

Wall Assembly
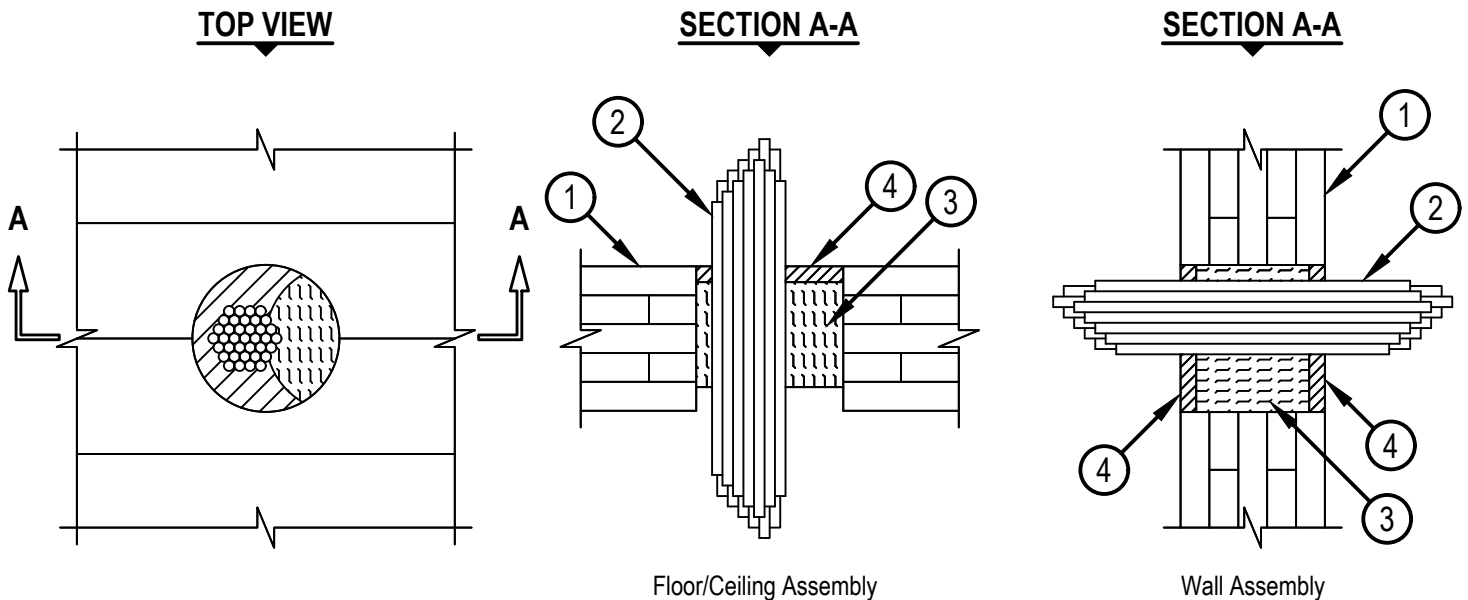
FIGURE 1. THROUGH PENETRATION FIRESTOP SYSTEM

Hilti Firestop Systems

Intertek

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HI/PF 120-08

1. **FLOOR/CEILING OR WALL ASSEMBLY:** Use a 2 hour fire-rated floor/ceiling assembly or wall assembly consisting of min. 6-7/8 in. cross-laminated timber (CLT) with a min. 5 plys. Cross-laminated timber (CLT) assembly to be certified in accordance with ANSI/APA PRG 320 (2018 or later). Size of opening through assembly to be a max. 6 in. diameter.

   A. (Optional, Not Shown) GYPSUM BOARD: For floor/ceiling assemblies or for wall assemblies (Item 1), directly applied gypsum board protection may be included with the following requirements:

   - One or more layers of min. 1/2 in. thick Type X gypsum board may be directly applied to the bottom of the CLT floor ceiling assembly, or to one or both sides of the CLT wall assembly (Item 1). Each layer of gypsum board is to be attached to the CLT assembly in accordance with local code requirements.

2. **PENETRATING ITEM:** Install one max 4 in. diameter cable bundle centered or offset within the opening to accommodate a nominal 44% visual fill of cables within the opening. Offset to the opening may range from min. 1/2 in. to max 1 in. When opening size is reduced, reduce the cable bundle size to maintain a nominal 44% visual fill of cables within the opening. Cable bundle to be tightly bundled and may consist of one or more of the following types of cable:

   - MAX. 100 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.

   - MAX. 7/C NO. 12 AWG COPPER CONDUCTER CONTROL CABLE WITH PVC OR XLPE JACKET AND INSULATION.

   - MAX. 4/0 AWG TYPE RHH GROUND CABLE.

   - MAX. 4 PAIR NO. 22 AWG CAT 5 COMPUTER CABLE.

   - MAX. RG/U COAXIAL CABLE.

   - MAX. 1/2 IN. DIAMETER FIBER-OPTIC CABLE (24 FIBER) WITH PVC OR PE JACKET AND INSULATION.

   - MAX. 3/C NO. 12 AWG METAL CLAD CABLE.

3. **PACKING MATERIAL:** Use only packing material bearing an Intertek Certified Label and meeting the following minimum requirements. Install min. 4 pcf (64 kg/m^3) density mineral wool batt insulation in the annular space of the opening in the floor/ceiling or wall assembly (Item 1), tightly packed (compressed min. 33%) around the penetrating item (Item 2) as follows:
   - Floor/Ceiling Assembly - Install min. 5 in. thick layer recessed min. 3/4 in. from the top of the CLT floor/ceiling assembly (Item 1). Mineral wool may be recessed a max 1 in. from bottom of floor/ceiling assembly.

   - Wall Assembly - Install min 5 in. thick layer recessed min 3/4 in. from both surfaces of the CLT wall assembly (Item 1).

4. **FILL, VOID, OR CAVITY MATERIAL:** Intumescent Firestop Sealant

   CERTIFIED PRODUCT: Hilti Corporation, Penetration Firestopping; FS-ONE MAX Intumescent Firestop Sealant.

   - Floor/Ceiling Assembly - Apply min. 3/4 in. thick layer of Hilti FS-ONE MAX Intumescent Firestop Sealant to fill the void left after installing the packing material (Item 3) on the top of the floor/ceiling assembly (Item 1).

   - Wall Assembly - Apply min. 3/4 in. thick layer of Hilti FS-ONE MAX Intumescent Firestop Sealant to fill the void left on both sides of the wall assembly (Item 1) after installing the packing material (Item 3).

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Hilti Firestop Systems

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