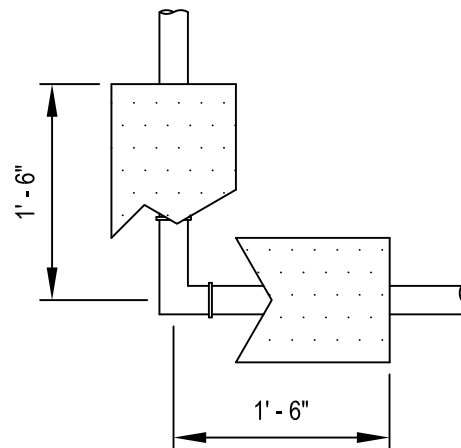
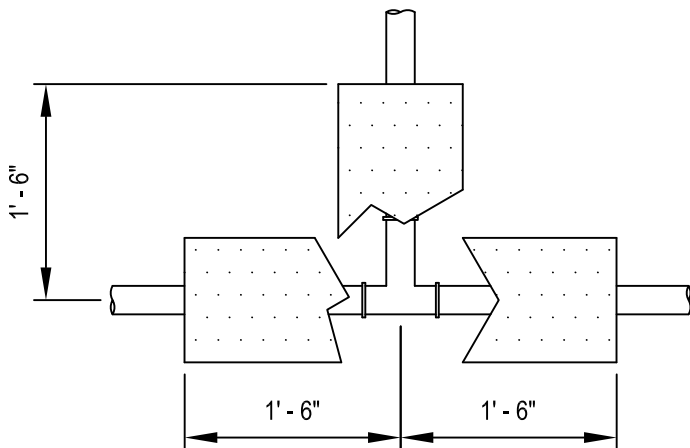
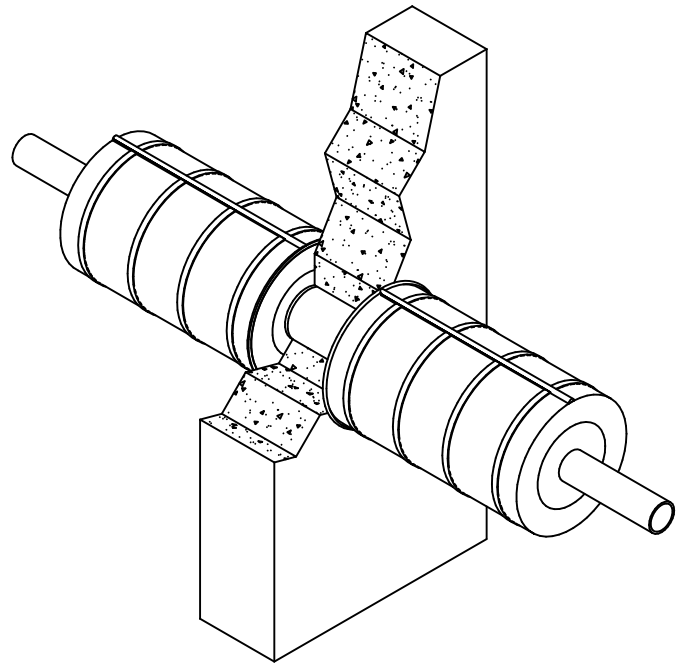
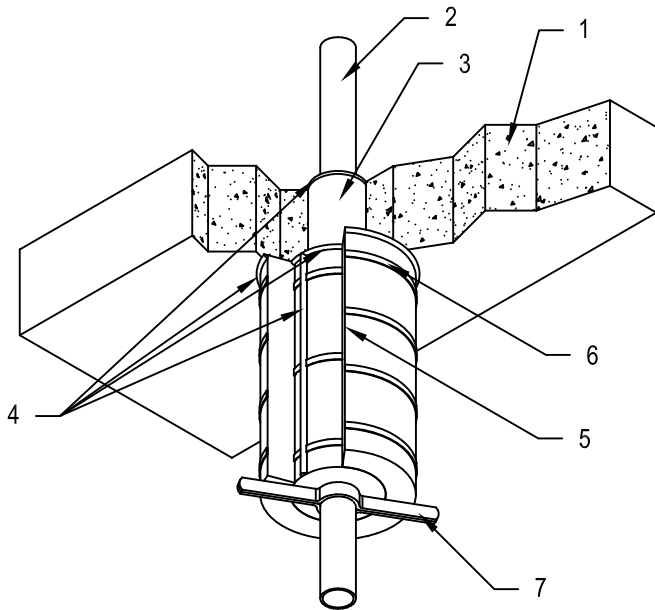
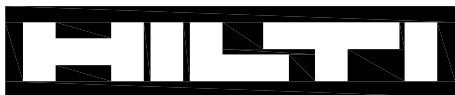


Hilti Corporation
 Design Number HI/PF 120-02
 Through Penetration
FS-ONE MAX Intumescent Firestop Sealant
 ASTM E 814 (2011) & UL 1479 (2010)
 F Rating: 2 Hours
 T Rating: 2 Hours
 H Rating: 2 Hours
 CAN/ULC S115 (2005) at 2.5Pa
 FTH: 2 Hours

HI/PF 120-02



Item 8



Hilti Firestop Systems

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 December 16, 2014



Hilti Corporation
Design Number HI/PF 120-02
Through Penetration
FS-ONE MAX Intumescent Firestop Sealant
ASTM E 814 (2011) & UL 1479 (2010)
F Rating: 2 Hours
T Rating: 2 Hours
H Rating: 2 Hours
CAN/ULC S115 (2005) at 2.5Pa
FTH: 2 Hours

1. **FLOOR/CEILING OR WALL ASSEMBLY:** Use a two-hour fire-rated floor/ceiling assembly or concrete or block wall assembly consisting of min. 7 in. (178 mm) thick normal weight (100-150 pcf (1600-2400 kg/m³)) reinforced concrete. Create a round through-opening with a max. diameter of 4 in. (102 mm).
2. **PENETRATING ITEM:** Install max. 2 in. (51 mm) diameter copper tubing centered or offset a max. 1-7/8 in (48 mm) in the through opening created in the floor/ceiling or wall assembly (Item 1).
3. **PACKING MATERIAL:** Install min. 4 pcf (64 kg/m³) density mineral wool batt insulation in the annular space, compressed min. 25% around the penetrating item (Item 2) as follows:
 - Floor Ceiling Assembly-Install nominal 6-3/4 in. (171 mm) layer recessed 1/4-inch (6 mm) from the top of the floor/ceiling assembly (Item 1)
 - Wall Assembly: Install nominal 6-1/2 in. (165 mm) layer recessed 1/4 in. (6 mm) from both surfaces of the wall assembly (Item 1).
 If the floor/ceiling or wall assembly (Item 1) is greater than 7 in., the 18 in. length of insulation (Item 5) may be reduced the amount the floor/ceiling or wall assembly (Item 1) exceeds 7 in. If the insulation (Item 5) is reduced, the packing material (Item 3) must be increased by the same thickness in the annular space.
4. **CERTIFIED COMPANY:** Hilti Corporation
CERTIFIED PRODUCT: Sealant
MODEL: FS-ONE MAX Intumescent Firestop Sealant
 Apply nominal 1/4 in. (6 mm) layer of FS-ONE MAX Intumescent Firestop Sealant to fill the 1/4 in. (6 mm) void left after installing the packing material (Item 3). After installing the insulation (Item 5) around the penetrating item (Item 2), apply a nominal 1/4 in. (6 mm) bead of FS-ONE MAX Intumescent Firestop Sealant in the longitudinal seam of the insulation and at the insulation (Item 5) and floor/ceiling or wall assembly (Item 1) interface.
5. **INSULATION:** Install two layers of 2 in. thick, 18 in long, 8 pcf (128 kg/m³) density hollow cylindrical mineral wool pipe insulation around penetrating item (Item 1) installed below the floor/ceiling assembly (Item 1) or on both sides of the wall assembly (Item 1).
6. **STAINLESS STEEL CLAMP:** Install ½ in. (13 mm) wide stainless steel hose clamps to secure insulation (Item 5) around penetrating item (Item 2). Install hose clamps around the inner layer of insulation spaced 2 in. (51 mm) from the ends of the insulation and 12 in. (305 mm) on center (oc) between. Install hose clamps around the outer layer of insulation spaced 2 in. (51 mm) from the ends of the insulation and 8 in. (203 mm) on center between.
7. **RISER CLAMP:** Install 2 in. (51 mm) galvanized steel riser clamp around penetrating item (Item 2) flush with the end of the insulation (Item 5) (not required on horizontal penetration).
8. **TEE/ELBOW (Optional):** Attach to penetrating item (Item 2) when required. When installing tee or elbow at a distance greater than 18 in. (457 mm) from the floor/ceiling or wall assembly (Item 1), insulation (Item 5) is only required from the floor/ceiling or wall assembly (Item 1) to the Tee or elbow. If the tee or elbow is less than 18 in. (457 mm) from the floor/ceiling or wall assembly (Item 1), insulation (Item 5) must be installed from the floor/ceiling or wall assembly (Item 1) to the tee or elbow and installed min. 18 in. (457 mm) from the junction of the tee or elbow in both directions. Secure insulation (Item 5) around tee/elbow using stainless steel hose clamps (Item 6) spaced 8 in. (203 mm) oc.



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