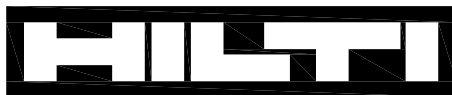
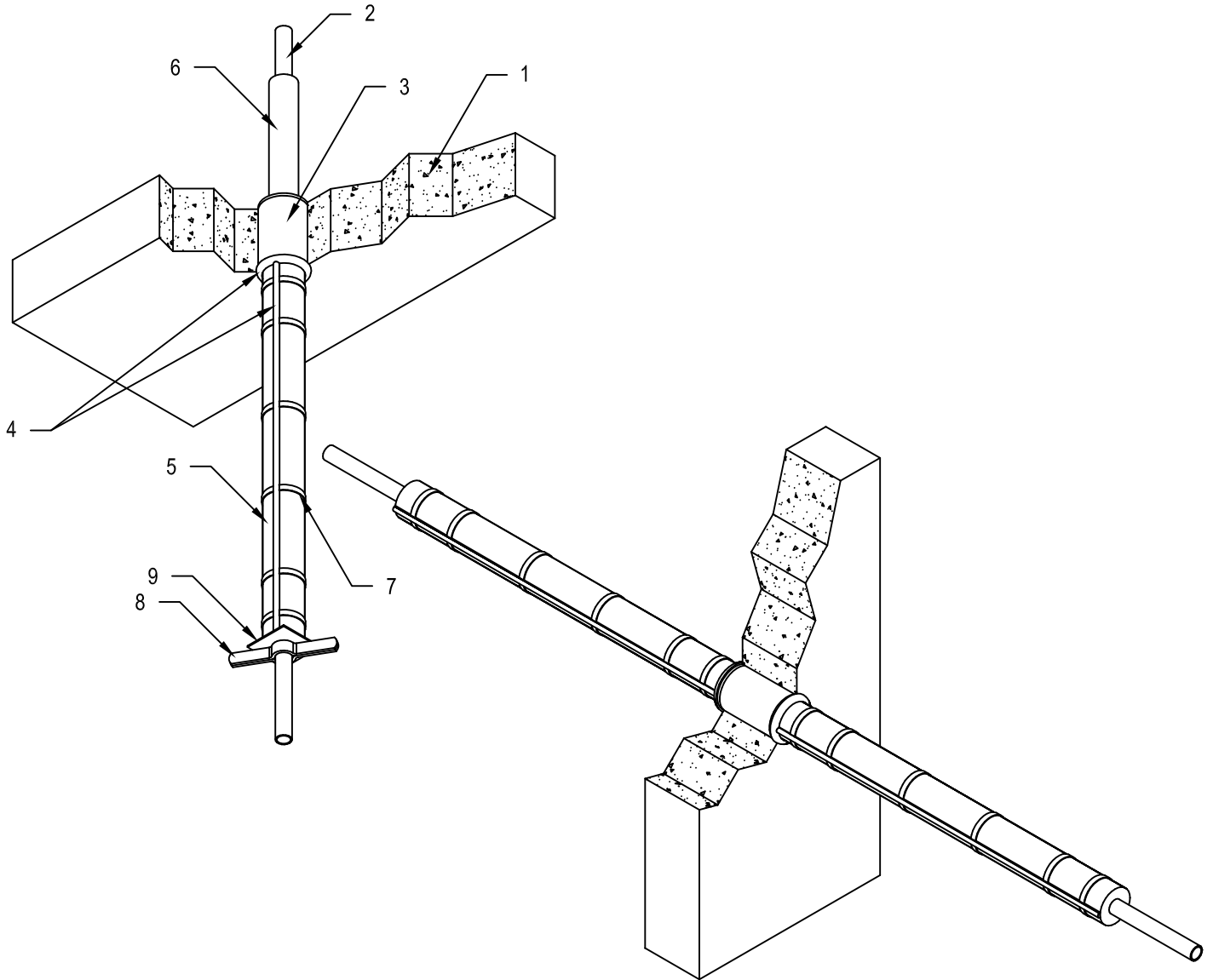


Hilti Corporation
Design Number HI/PF 120-04
Through Penetration
FS-ONE MAX Intumescent Firestop Sealant
ASTM E 814 (2011) & UL 1479 (2010)
F Rating: 2 Hours
T Rating: 2 Hours
H Rating: 2 Hours
CAN/ULC S115 (2011) at 2.5Pa
FTH: 2 Hours

HI/PF 120-04



Hilti Firestop Systems

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Courtesy of Intertek Group
December 16, 2014



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Design Number HI/PF 120-04
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FS-ONE MAX Intumescent Firestop Sealant
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1. FLOOR/CEILING OR WALL ASSEMBLY: Use a two-hour fire-rated floor/ceiling or wall assembly consisting of min. 6 in. (152 mm) thick normal weight (100-150 pcf (1600-2400 kg/m³)) reinforced concrete or hollow or concrete filled Concrete Masonry Units (CMU). Create a round through-opening with a max. diameter of 4 in. (102 mm).
2. PENETRATING ITEM: Install one of the following penetrating items:
 - Max. 1 in. (25 mm) Cast Iron Pipe
 - Max. 1 in. (25 mm) Rigid Steel Conduit or EMT
 - Max. 1 in. (25 mm) Schedule 40 (or thicker) Steel Pipe
 - Max. 1 in. (25 mm) copper tubing
 Install penetrating item centered or offset max. 2-7/8 in. (73 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 25% around the penetrating item (Item 2) as follows:
 - Floor Ceiling Assembly-Install nominal 5-3/4 in. (146 mm) layer recessed 1/4 in. (6 mm) from the bottom of the floor/ceiling assembly (Item 1)
 - Wall Assembly: Install nominal 5-1/2 in. (140 mm) layer recessed 1/4 in. (6 mm) from both surfaces of the wall assembly (Item 1).
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 a 1/2 in. (13 mm) bead at the insulation (Item 5) and floor/ceiling or wall assembly (Item 1) interface.
5. INSULATION: Install one layer of nominal 1 in. (25 mm) thick, 36 in. (914 mm) 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). If the floor/ceiling or wall assembly (Item 1) is greater than 6 in. then the 36 in. (914 mm) insulation may be reduced by the value of the increase in thickness. When this method is used, the glass fiber insulation (Item 6) is always required on the top side of the floor/ceiling assembly (Item 1).
6. GLASS FIBER INSULATION: Install 1/2 in. (13 mm) thick, 12 in. (305 mm) long hollow cylindrical glass fiber insulation with self-sealing tape around the penetrating item (Item 2) on the top surface of the floor/ceiling assembly (Item 1). Glass fiber insulation is not required for wall assemblies (Item 1). When the floor/ceiling assembly (Item 1) exceeds 8 in. (203 mm) in thickness, the glass fiber insulation is not required; however, the insulation (Item 5) must be 36 in. long and may not be reduced as specified in Item 5.
7. STAINLESS STEEL CLAMP: Install 1/2 in. (13 mm) wide stainless steel hose clamps to secure insulation (Item 5) around penetrating item (Item 2). Install hose clamps spaced 2 in. (51 mm) from the ends of the insulation and 8 in. (203 mm) on center between.
8. RISER CLAMP: Install 1 in. (25 mm) galvanized steel riser clamp around penetrating item (Item 2) flush with the end of the insulation (Item 5) (not required on horizontal penetration).
9. STEEL PLATE: Install 4 in. X 4 in. steel plate between the insulation (Item 5) and the riser clamp (Item 8) to prevent the insulation (Item 5) from sagging (not required on a horizontal penetration).



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