

Single and Multiple Penetrations

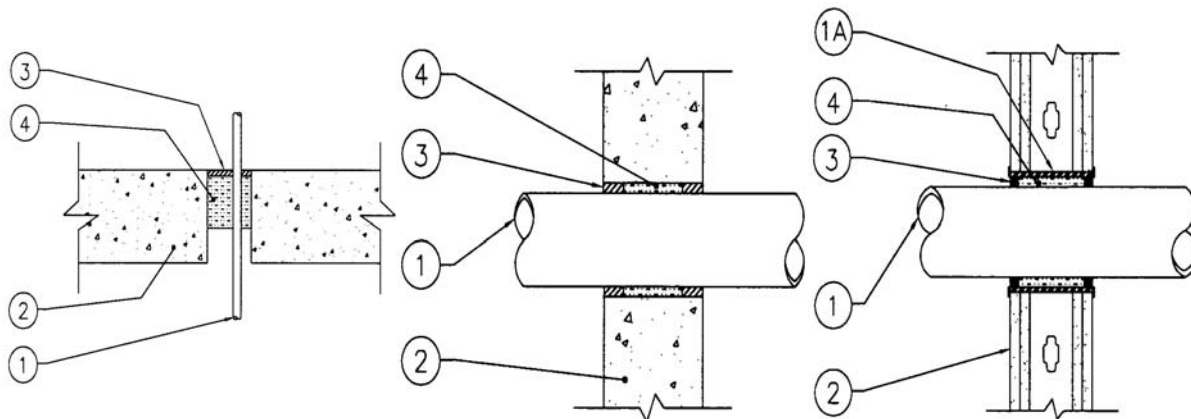
Horizontal or Vertical (floor/ceiling and walls)

Test Standards: ASTM E-814, UL 1479, ULC S115-M11

Test Furnace Internal Positive Pressure Differential – 2.5 Pa (0.01 in. of water) Minimum

CSI Code: 07 84 13 Penetration Firestopping

Penetrating Material & Size	Max Hole Size	Annular Space	Fire "F" Rating	Fire/Hose "FH" Rating	Temp Rating "FTH" Rating
Steel and Cast Iron Pipe (1" to 3") Sch 10 & up	11"	¼" - 4"	2 Hour	2 Hour	35 Min
Steel and Cast Iron Pipe (3½" to 8") Sch 10 & up	16"	¼" - 4"	2 Hour	2 Hour	19 Min
Steel and Cast Iron Pipe (8½" to 24") Sch 10 & up	26"	¼" - 1"	2 Hour	2 Hour	15 Min
Stainless Steel Pipe (1/8" to 24") Sch 5 & up	26"	¼" - 2½"	2 Hour	2 Hour	15 Min
EMT/Steel Conduit Pipe (½" to 1") Sch 10 & up	9"	¼" - 4"	2 Hour	2 Hour	60 Min
EMT/Steel Conduit Pipe (1¼" to 6") Sch 10 & up	8"	¼" - 1"	2 Hour	2 Hour	15 Min
Copper Pipe and Tubing up to 4" ID	12"	¼" - 4"	2 Hour	2 Hour	50 Min
BX/Teck Cables up to 3-3/8" OD (Plastic Jacket)	7"	¼" - 2½"	2 Hour	2 Hour	2 Hour
Loomex/Romex Electrical Wiring to 1½"	6½"	¼" - 2½"	2 Hour	2 Hour	2 Hour
25Pr Telephone Cable (Plastic Jacket)	4"	1/8" - 1"	2 Hour	2 Hour	2 Hour
5/16" OD Cablevision Wire (Plastic Jacket)	4"	1/8" - 1"	2 Hour	2 Hour	2 Hour



System Design Instructions

1. Penetrating Item: Centered or offset in hole, see table above. Single penetrations for steel pipes 6" to 16" (150 to 400mm), up to 5 penetrations for steel pipe, conduit or electrical wiring 1" (25mm) or less in diameter, up to 3 penetrations for copper pipe when 2 are ½" (13mm) or less. Steel pipes over 8" (200mm) in diameter, require ceramic fiber filler material (Item 4).

a) **Metal Sleeve:** Minimum 28 Ga or heavier metal sleeve fit tightly into the opening with a maximum annular space around sleeve to GWB of 1/16" (1.5mm). Metal sleeve used to support mineral wool filler material (Item 4) within hollow cavities.

2. Floor/Ceiling or Wall Fire Separations:

a) 1 and 2 hour rated ASTM E-119 or CAN/ULC S101 metal or wood framed fire rated gypsum wallboard (GWB) wall assemblies. (Note all GWB assemblies require metal sleeves when using 4100NS*)

b) Cast in place normal or light density concrete floor/ceiling assemblies minimum thickness of 4½" (114mm) or;

c) Cast in place concrete wall assemblies having a minimum cross section thickness of 6" (150mm) or;

d) Hollow or concrete filled unit masonry (concrete block) wall assemblies laid up with mortar having a minimum cross section thickness of 8" (200mm).

- 3. Firestop System Component 1:** PFP Partners – Firestop 4100NS* (non sag) or 4800*DW for vertical or horizontal applications or 4100SL* (self leveling) for horizontal applications. Each product must be installed at a minimum thickness of ¼" (6mm) or 5100SP* (mastic) for vertical or horizontal applications sprayed into place with a minimum wet film thickness of 1/8" (3mm). Use 5100SP* only where the annular space does not exceed 2" (50mm). Always overlap 5100SP* onto the surface of the substrate a minimum of ½" (13mm). Do not thin 5100SP* firestop mastic when spraying, use equipment capable of applying material as supplied. On GWB and metal sleeve installations use only 4100NS* or 4800DW* at a minimum thickness of ¼" (6mm).
- 4. Firestop System Component 2:** Filler Material, mineral rock wool or ceramic fiber insulation with minimum density of 4-6 PCF (68 kg/m³) compressed a minimum of 25% into the annular space at a minimum depth of 3½" (88mm). Recess filler material ¼" (6mm) for 4100*NS or 4800DW* sealant placement. Do not recess filler material for 5100SP* applications. On GWB and metal sleeve installations fill to full depth of sleeve allowing ¼" (6mm) for sealant placement on each side.

***WH Labeled Component**