

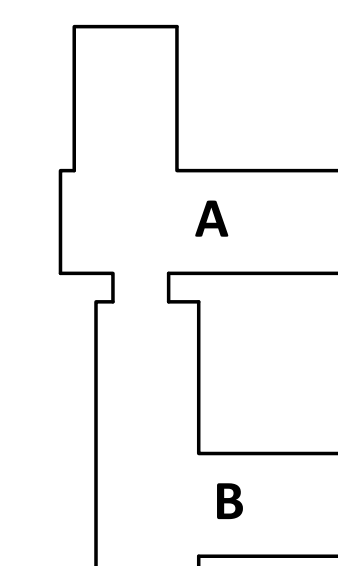


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STAMP 3-15-22



REVISION NO. DATE



KEY PLAN - (INTS)



HOME FORWARD  
5000 NE 42ND  
PORTLAND, OR 97218  
ISSUANCE  
PERMIT SET  
PROJECT NUMBER  
2003  
DATE  
MARCH 18, 2022  
SCALE  
As indicated  
DRAWING TITLE  
MECHANICAL  
DETAILS

SHEET NUMBER

## M6.02

**System No. F-C-7057**

ANSI/UL1479 (ASTM E814)	CANULC S115
F Rating — 1 Hr	F Rating — 1 Hr
T Rating — 1 Hr	FT Rating — 1 Hr
	FH Rating — 1 Hr
	FTH Rating — 1 Hr

**SECTION A-A**

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Hilti Firestop Systems Page: 1 of 2

**System No. F-C-7057**

- Floor-Ceiling Assembly** — The 1 hr fire-rated solid or trussed Lumber joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. The general construction details of the floor-ceiling assembly are summarized below.
  - Flooring System** — Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture as specified in the individual Floor-Ceiling Design. Max area of floor opening is 150 in.2 (0.098 m2) with a max 1.5 in. (38 mm) annular space between duct and framing members.
  - Wood Joists** — Nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists. Insects or Structural Wood Members\* with bracing as required and with ends firestopped. Additional framing members installed to form a square enclosure around the perimeter of the opening in the floor and ceiling.
  - Furring Channels** — (Where Required - Not Shown) — Resilient galv steel furring installed perpendicular to wood joists between gypsum board and wood joists as specified in the individual Floor-Ceiling Design. Furring channels spaced max 24 in. (610 mm) OC. If furring channels are used within the assembly, additional furring channels to be installed along the periphery of the opening.
  - Gypsum Board** — Nom 4 1/2 in. (112 mm) side by 5/8 in. (16 mm) thick as specified in the individual Floor-Ceiling Design. Gypsum board secured to wood joists or furring channels as specified in the individual Floor-Ceiling Design. Max area of ceiling opening is 150 in.2 (0.098 m2) with a max 1.5 in. (38 mm) annular space between duct and framing members.
- Steel Air Duct** — Max 7 in. (178 mm) diam by min 0.0157 in. (No. 30 gauge or 0.40 mm) thick galv steel air duct to be centered within the opening. Max one steel air duct to be installed within opening. Steel duct to be rigidly supported on top side of floor-ceiling assembly.
- Firestop System** — The firestop system shall consist of the following:
  - Packing Material** — Min 9-7/8 in. (251 mm) thickness of unfaced duct wrap material compressed min 25 percent into opening as a permanent form between the insulated steel duct and the periphery of the opening. Packing material to be installed flush with bottom surface of ceiling and recessed from top surface of floor to accommodate the required thickness of fill material.
  - Fill, Void or Cavity Material** — Sealant — Min 3/4 in. (19 mm) thickness of fill material applied within annulus on top surface of floor.
    - SPECIFIED TECHNOLOGIES INC. — SpecSeal Series SSS Sealant or SpecSeal LCI Sealant
    - ESS NELSON FIRESTOP — ES1999 Sealant
    - HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC. — FS-ONE Sealant or FS-ONE-MAX Intumescent Sealant
    - TREMCO INC. — FyreSil Sealant
    - DAP PRODUCTS INC. — DAP Fire Stop Fire-Rated Silicone Sealant
    - 3M COMPANY 3M FIRE PROTECTION PRODUCTS — FB-1000 NS Sealant
    - NAICO INC. — Seal Seal GG-200
  - Duct Wrap Material** — Nom 1/2 in. (13 mm) thick, 8 pcf (128 kg/m3) or nom 1-1/2 in. (38 mm) thick, 6 pcf (96 kg/m3) with foil-scrim facers. The steel duct shall be wrapped with one layer of duct wrap installed in accordance with Ventilation Assembly No. V32. The duct wrap is secured with min No. 18 Gauge (0.342 in. or 1 mm) galvanized steel wire formed into a loop on one end, with the other end passed through the loop, pulled hand tight and bent over. The wires spaced a max 12 in. (305 mm) OC See Ventilation Duct Assemblies in Vol. 2 of the Fire Resistance Directory. The annular space between the insulated steel duct and the periphery of the opening shall be a min 1-1/2 in. (38 mm). A min 1/2 in. high collar consisting of an additional layer of 1/2 in. (13 mm) thick, 6 pcf (128 kg/m3) or nom 1-1/2 in. (38 mm) thick, 6 pcf (96 kg/m3) duct wrap, installed over the duct wrap flush with the top surface of the floor and extending upward. All seams and edges shall be sealed with min 3 in. (76 mm) wide pressure sensitive aluminum 50 tape.
    - UNIFRAX I L L C — FyreWrap DPS or FyreWrap Elite 1.5

\* 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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Hilti Firestop Systems Page: 2 of 2

**1 FLOOR CEILING PENETRATION**  
SCALE: DETAIL

**Fire Rated Submittal**  
1 Hour Ceiling Box Assembly Unit with Rectangular Ceiling Radiation Butterfly Damper  
MODEL: 27003BA Series

1.666.940.0696  
sm@shoemakermg.com

"A" = W+3" "B" = H+3"  
"D" = Collar Dia. +6"

**Standard Features:**

- Factory assembled plenum box with side outlet and square or rectangular ceiling radiation damper
- UL rated for floor/ceiling and roof/ceiling wood truss assemblies L528, L558, L562, L565, L574, L585, P533, P544, P545 and P547 types
- Meets UL263 and NFPA 90A requirements
- CSFM California State Fire Marshal listed

**Ceiling Radiation Damper:**

- 165" fusible link
- 22 gauge galvanized steel blades with ceramic fiberglass cover\*
- Roll formed 22 gauge galvanized steel frame

**Plenum Box:**

- Plenum outer box made of 26 gauge galvanized steel
- Roll formed 26 gauge galvanized steel collar with 1/4" bead
- Fiberglass duct board 1 1/2" thick (R6)
- Minimum size 4"x4"x2" (collar)
- Maximum size 16"x16"x12" (collar)

**Options:**

- Extended length drywall flange
- Stainless steel

Product Notes:  
\*Ceramic fiber blade insulation is not UL listed, required on dampers with free areas less than 80 sq. inches. Dampers with free areas greater than 80 sq. inches are constructed with ceramic fiber blade insulation

**Additional Information:** Submittal Notes

Project / Location: \_\_\_\_\_  
Engineer: \_\_\_\_\_  
Architect: \_\_\_\_\_  
Contractor: \_\_\_\_\_

27003BA-Sub Shoemaker Manufacturing, 618 East 1st Street, Cle Elum, WA Last Revised: 05/07/21

**3 CEILING RADIATION DAMPER BOX**  
SCALE: DETAIL

**System No. W-L-7018**

ANSI/UL1479 (ASTM E814)	CANULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 1 1/2 Hr	FT Rating — 1-1/2 Hr
	FH Rating — 2 Hr
	FTH Rating — 1-1/2 Hr

**SECTION A-A**

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Hilti Firestop Systems Page: 1 of 2

**System No. W-L-7018**

- Steel Duct** — Nom 6 in. (152 mm) diam (or smaller) No. 28 gauge (or heavier) galv steel duct to be installed concentrically within the firestop system. Duct to be rigidly supported on both sides of the wall assembly.
- Pipe Covering** — Nom 1 in. (25 mm) thick hollow cylindrical heavy density (3.5 pcf or 56 kg/m3) glass fiber units jacketed on the outside with an oil service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with built tape supplied with the product. The annular space between the insulated pipe and the steel sleeve shall be min 0 in. (joint contact) to max 1 in. (25 mm).
- See Pipe Equipment Covering** — Materials — (BRGLU) Category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
- Fill, Void or Cavity Material** — Sealant — Min 1-1/4 in. (32 mm) depth of sealant applied within the annulus. Flush with each surface of the wall assembly. At the point contact location between insulated pipe and wall, a min 1/2 in. (13 mm) diam bead of sealant shall be applied on both surfaces of wall, lapping 1/4 in. (6 mm) beyond the periphery of the opening.
- HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC. — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant**

\* 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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Hilti Firestop Systems Page: 2 of 2

**4 FIRE PENETRATION DETAIL — 5" or 6" DUCTS**  
SCALE: DETAIL

**3 DUCT IN JOIST BAY**  
SCALE: NOT TO SCALE

**5 CONCENTRIC GAS VENT**  
SCALE: DETAIL

**5 CONCENTRIC GAS VENT**  
SCALE: DETAIL