

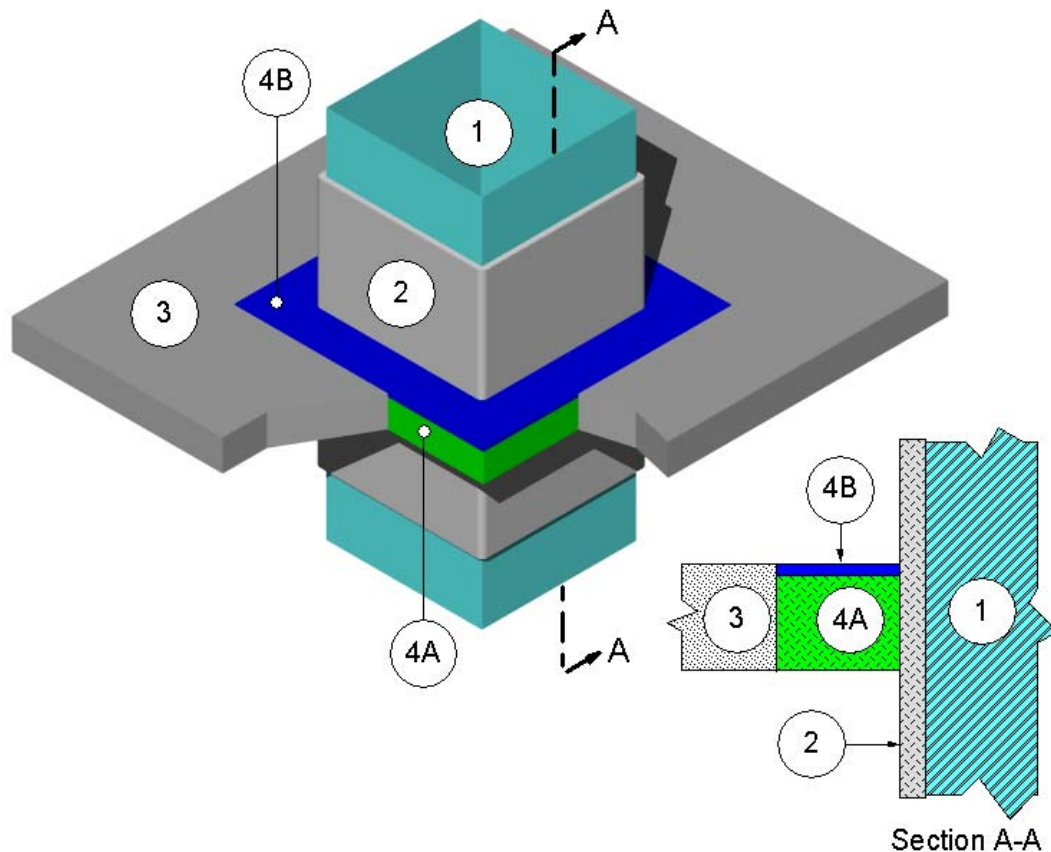
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**Design No. 3MU/PV 120-03**  
**OPL Design Number: FS 560 F**  
**PENETRATION FIRESTOP THROUGH FLOOR ASSEMBLY**

3M Company  
3M Fire Barrier™ Duct Wrap 15A or 20A  
3M Fire Barrier™ Duct Wrap 615  
3M Fire Barrier™ 2000+ Silicone Joint Sealant  
3M Fire Barrier™ Water Tight 1000-NS Silicone Joint Sealant  
3M Fire Barrier™ Water Tight 1003 SL Silicone Joint Sealant

**ASTM E 814-06**  
**T Rating – 2 hr**  
**F Rating – 2 hr**

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1. PENETRATING ITEM: Rectangular or round minimum 24 GA steel duct constructed of sheet steel with a maximum 720 inch<sup>2</sup> area with a maximum 30 inch dimension or 30 inch diameter.

2. CERTIFIED MANUFACTURER: 3M Company  
CERTIFIED PRODUCT: 3M Fire Barrier™ Duct Wrap  
MODEL: 15A, 20A, 615

INSULATION: Before the packing material (Item 4A) and fill material (Item 4B) of the penetration firestop (Item 4) are installed, wrap the penetrating item (Item 1) with at least one layer of minimum 24-inch-wide certified insulation. Minimum 8 pcf density required for grease duct applications. Overlap the ends of certified insulation and secure certified insulation to penetrating item (Item 1) in accord with any 2-hour-rated 3M FRD design listing.

3. FLOOR ASSEMBLY: Symmetrical two-hour-rated solid concrete floor assembly made from reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete. Constructed of one of the following:

A. Solid Concrete – Minimum concrete thickness measured from exposed face to exposed face using one of the following:

1. lightweight concrete is 3.6 inches;
2. sand-lightweight concrete is 3.8 inches;
3. carbonate aggregate concrete is 4.6 inches; and
4. siliceous aggregate concrete is 5.0 inches.

B. Opening – Create an opening in the floor assembly. Position the penetrating item (Item 1) concentrically or eccentrically in the opening so that the annular space ranges from minimum 1-¼ inch to maximum 2-½ inches. The opening shall have a cross-sectional area of maximum 1093 inch<sup>2</sup> and a maximum dimension of 36.75 inches for penetrating item (Item 1).

4. PENETRATION FIRESTOP: Symmetrical penetration firestop constructed of the following components:

A. CERTIFIED MANUFACTURER: 3M Company

CERTIFIED PRODUCT: 3M Fire Barrier™ Duct Wrap

MODEL: 15A, 20A, 615

PACKING MATERIAL: Fill the annular space with minimum 4-pcf mineral wool or certified insulation without the

encapsulation (foil scrim). Cut the packing material into strips. Compress packing material nominally 25% and insert packing material into the annular space. Fill the entire annular space. Recess the surface of packing material nominally 7/16 inches from top surface of the floor assembly (Item 3).

B. CERTIFIED MANUFACTURER: 3M Company

CERTIFIED PRODUCT: 3M Fire Barrier™ Joint Sealant

MODEL: Water Tight 1000-NS Silicone or 2000+ Silicone or Water Tight 1003 SL Silicone

FILL, VOID OR CAVITY MATERIAL: Install minimum 7/16-inch depth of certified fill material into the recess over the packing material (Item 4A) on top side of the floor assembly (Item 3). Screed certified fill material flush with the surface of the floor assembly (Item 3). Overlap the fill material onto face of the insulation (Item 2) and the floor assembly (Item 3) a minimum of ¼ inch.