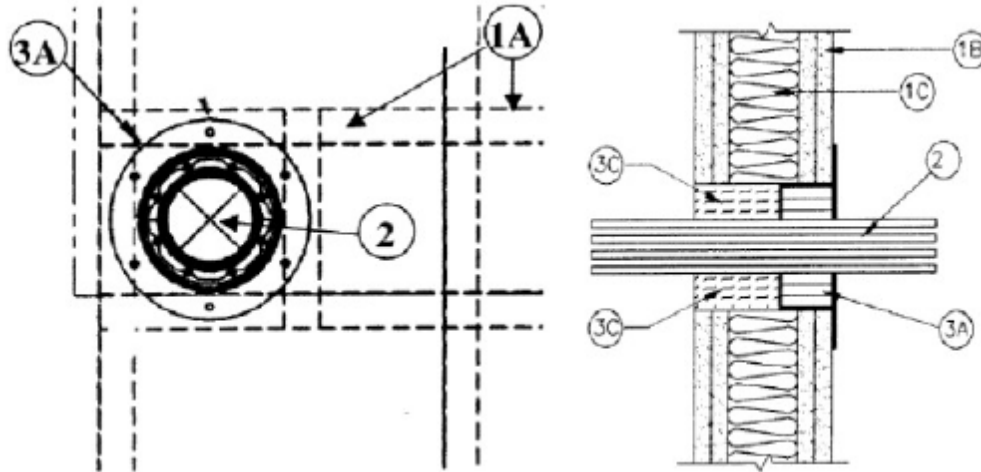


Appendix E

FIRE STOP DESIGN 639

F Rating – 1 and 2 HR (see item 1)
T Rating – 0 and $\frac{3}{4}$ HR (see item 1 and 3)
 T_{FM} Rating – 0 and $\frac{3}{4}$ HR (see item 1 and 3)



1. WALL ASSEMBLY. One or two hour fire rated gypsum wall assembly constructed with steel channel studs.

A. Steel studs (not shown) are channel shaped, min 3-5/8 in. (92 mm) deep and 1-5/8 in. (41 mm) wide with 1/2 in. (13 mm) folded back flanges. Fabricated from 20 MSG galvanized steel, spaced a max of 16 in. (400 mm) on center. Additional framing members are to be installed to form a rectangular box having dimensions which are a max 1/4 in. (6 mm) greater than the width and height of the firestop device frame (Item 3A), excluding mounting flanges. Max area of framed opening is 50 in² (323 cm²) [R-150 Device]. Max dimension of the opening is 7 in. wide x 7 in. high (178 mm x 178 mm) [R-150 Device].

B. Gypsum Board. Min 5/8 in. (16 mm) thick x 4 ft (1.2 m) wide gypsum wallboard applied to each side of the wall. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual wall assembly hourly rating design criteria however 1 hour walls shall use at least 1 layer of Type X gypsum board and 2 hour walls shall use at least 2 layers of 1/2 in (13 mm) thick type C gypsum board.

C. Mineral Wool. Mineral wool batts or blankets shall completely fill the stud cavity.

The hourly F rating is 1 and 2 hr for 1 and 2 hr rated assemblies, respectively.

The hourly T and T_{FM} ratings are 0 hr and $\frac{3}{4}$ hr for 1 and 2 hr rated assemblies, respectively, unless shown otherwise below.

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2. CABLES. Aggregate cross-sectional area of the cables in each device shall be from 0 to 100% fill. Cables shall be rigidly supported on both sides of the wall assembly.

Max 3/C No. 500 kcmil MC type copper conductor power cable with ethylene propylene rubber (EPR) insulation and PVC jacket material.

3. FIRESTOP SYSTEM. The firestop system shall consist of the following:

Firestop Devices – Circular firestop device for use in preformed openings. The firestop device shall be inserted into the framed opening and friction fit on one side of the wall assembly. Each device consists of a single/multi-diameter elastomeric sealing module and a steel compression plate. The square openings of each device frame shall be filled with a single elastomeric sealing module with a max of one (1) cable per sealing module. The steel flange of each firestop device shall be secured to the steel stud framing of the wall assembly through the gypsum wallboard layer by means of No. 8 x 3 in. (75 mm) long self-drilling, self-tapping steel screws through the predrilled holes in the device frame mounting flange. The sheets of the multi-diameter sealing module halves are removed one by one until a max gap of 0.04 in. (1 mm) is formed between the two modules halves. After installation of the modules into the device, the bolts of the compression unit are tightened to form an effective seal around the cables. The device shall be installed in accordance with the manufacturer's written installation instructions

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Frame and Sealing Module Unit

Types RS-23; RS-25; RS-31; RS-43; RS-50; RS-68; RS-75; RS-100; RS-125 and RS-150 and their corresponding flanges SLFR23; SLFR25; SLFR31; SLFR43; SLFR50; SLFR68; SLFR75; SLFR100; SLFR125 and SLFR150.

Types RS ES-23; RS ES-25; RS ES-31; RS ES-43; RS ES-50; RS ES-68; RS ES-75; RS ES-100; RS ES-125 and RS ES-150 and their corresponding flanges SLFRS23; SLFRS25; SLFRS31; SLFRS43; SLFRS50; SLFRS68; SLFRS75; SLFRS100; SLFRS125 and SLFRS150.

Types RS PE-23; RS PE-25; RS PE-31; RS PE-43; RS PE-50; RS PE-68; RS PE-75; RS PE-100; RS PE-125 and RS PE-150 and their corresponding flanges SLFRS23; SLFRS25; SLFRS31; SLFRS43; SLFRS50; SLFRS68; SLFRS75; SLFRS100; SLFRS125 and SLFRS150.

B. Silicone RTV Sealant (not shown) – A min ¼ in. (6 mm) diameter bead of silicone RTV sealant shall be applied as a gasket between the device frame mounting flange and the gypsum wallboard. The sealant bead shall be located between the edge of the opening and the line of fasteners around the entire perimeter of the framed opening.

C. Packing Material – Pieces of minimum 3 in. (75 mm) thick, min 2.8 lbs/ft³ (45 kg/m³) density mineral wool batt insulation cut to line the four (4) sides of the through opening within the wall cavity. Pieces are cut to length and tightly friction fit between the framing of the wall opening and cables and in-between cables flush with the wall surface.