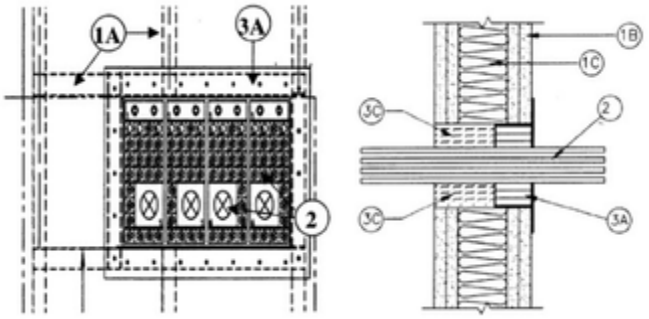
Wall & Floor Penetration Fire Stops (FM Approval Class Number 4990)

Fire Stop Design 635

F Rating – 1 and 2 HR (see item 1)
T Rating – 0 and ½ HR (see item 1 and 3)
T_{FM} Rating – 0 and ½ HR (see item 1 and 3)



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

   a. Wood studs to consist of nominal 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) o.c. with nominal 2 by 4 in. (51 by 102 mm) lumber. Steel studs are channel shaped, min 3-5/8 in. (92 mm) deep and 1-5/8 in. (41 mm) wide with ½ 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 ¼ 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 250 in^2 (1613 cm^2) [G-8x4 Device]. Max dimension of the opening is 21-1/16 in. wide x 11-5/8 in. high (535 mm x 295 mm) [G-8x4 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 ½ 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 ½ hr for 1 and 2 hr rated assemblies, respectively.

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. Any combination of the following types and sizes of cables can be used.

   Max 4/C No. 8 AWG copper conductor power cable with cross linked polyolefin insulation and neoprene jacket materials.

   Max 19/C No. 14 AWG TC or TC-ER type copper conductor control power cable with ethylene propylene rubber (EPR) insulation and chlorinated polyethylene (CPE) jacket materials.

   Max 3/C No. 750 kcmil metal clad or Tech 90 type copper conductor power cable with XLP insulation and PVC

jacket material.

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

Max 3/C No. 14 AWG MC type copper conductor power cable with XLP insulation and PVC jacket material.

Max 2/C No. 14 AWG metal clad or Tech 90 type copper conductor power cable with XLP insulation and PVC jacket material.

Max 3/C No. 500 kcmil TC or TC-ER copper conductor power cable with Okinite FRM insulation and PVC jacket material

Max 3/C No. 500 MCM TC or TC-ER copper conductor power cable with polyethylene and PVC jacket material

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

a. Firestop Devices – Each firestop device consists of a rectangular steel frame, multi-diameter elastomeric sealing modules, steel stay plates and a compression unit consisting of a Roxtec Wedge. The firestop device shall be inserted into the framed opening on one side of the wall assembly. 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 spaced a max of 3-1/2 in. (89 mm) on center in the device frame mounting flange. When wood studs are used, fasteners shall be ¼ x 3 in. (6.4 x 75 mm) long wood screws. The rectangular opening(s) of each device frame shall be filled with multiple rows of multi-diameter elastomeric sealing modules with a max of one (1) cable per sealing module. 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. When the number of sealing modules exceeds the number of cables, the solid cylindrical cores of the unpenetrated multi-diameter sealing modules shall be left in place or “blank” (solid) sealing modules shall be used. During the installation of the elastomeric sealing modules, thin steel stay plates shall be used to separate the rows of sealing modules and to retain the sealing modules within the steel frame. After installation of the modules, the bolts of the compression unit are tightened to form an effective seal around the penetrants and insert modules. The device shall be installed in accordance with the manufacturer’s written installation instructions.

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/ft^3 (45 kg/m^3) 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.

3a.

Frames, Sealing Modules

Frames

G-2x1; G-2x2; G-2x3; G-2x4; G-4x1; G-4x2; G-4x3; G-4x4; G-6x1; G-6x2; G-6x3; G-6x4; G-8x1; G-8x2; G-8x3; G-8x4;

GH-2x1; GH-2x2; GH-2x3; GH-2x4; GH-4x1; GH-4x2; GH-4x3; GH-4x4; GH-6x1; GH-6x2; GH-6x3; GH-6x4; GH-8x1; GH-8x2; GH-8x3; GH-8x4;

GH-2x1 FL100; GH-2x2 FL100; GH-2x3 FL100; GH-2x4 FL100; GH-4x1 FL100; GH-4x2 FL100; GH-4x3 FL100; GH-

4x4 FL100; GH-6x1 FL100; GH-6x2 FL100; GH-6x3 FL100; GH-6x4 FL100; GH-8x1 FL100; GH-8x2 FL100; GH-8x3 FL100; GH-8x4 FL100;

GH BG-2x1; GH BG-2x2; GH BG-2x3; GH BG-2x4; GH BG-4x1; GH BG-4x2; GH BG-4x3; GH BG-4x4; GH BG-6x1; GH BG-6x2; GH BG-6x3; GH BG-6x4; GH BG-8x1; GH BG-8x2; GH BG-8x3; GH BG-8x4;

GHM-2x1; GHM-2x2; GHM-2x3; GHM-2x4; GHM-4x1; GHM-4x2; GHM-4x3; GHM-4x4; GHM-6x1; GHM-6x2; GHM-6x3; GHM-6x4; GHM-8x1; GHM-8x2; GHM-8x3; GHM-8x4;

GHM BG 2x1; GHM BG 4X1; GHM BG 6X1; GHM BG 8X1;

SF-2x1; SF-2x2; SF-2x3; SF-2x4; SF-4x1; SF-4x2; SF-4x3; SF-4x4; SF-6x1; SF-6x2; SF-6x3; SF-6x4; SF-8x1; SF-8x2; SF-8x3; SF-8x4;

Sealing Modules
RM, RM ES, RM PE, RM BG, RM ES B, RM BG B or RM PE B Sealing Modules
*When RM ES B, RM BG B or RM PE B sealing modules are used, the T and T_{FM} ratings are 0 Hr.

Company Name:	Roxtec International AB
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Company Website:	http://www.roxtec.com
New/Updated Product Listing:	No
Listing Country:	Sweden
Product Type:	Misc Firestopping Devices
Certification Type:	FM Approved