XHEZ.C-AJ-8309 - Through-penetration Firestop Systems

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

XHEZ - Through-penetration Firestop Systems
XHEZ7 - Through-penetration Firestop Systems Certified for Canada

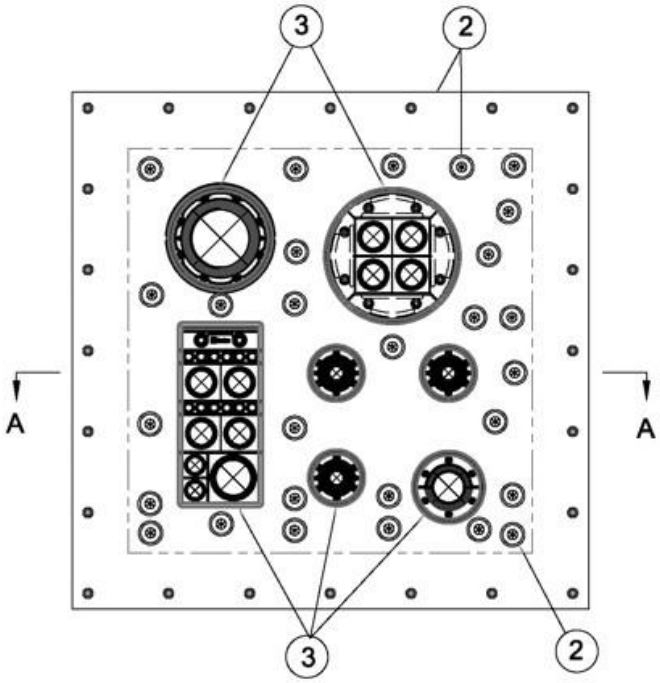
See General Information for Through-penetration Firestop Systems

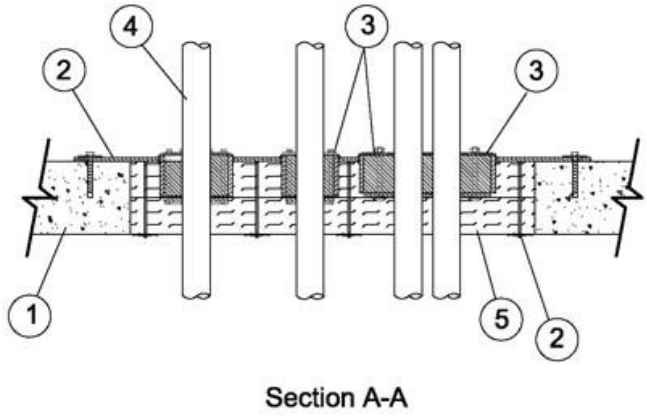
See General Information for Through-penetration Firestop Systems Certified for Canada

System No. C-AJ-8309

May 01, 2020

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating - 2 Hr	F Rating - 2 Hr
T Ratings - 0, 1/2, 3/4, 1 and 2 Hr (See Item 4)	FT Ratings - 0, 1/2, 3/4, 1 and 2 Hr (See Item 4)
	FH Rating - 2 Hr
	FTH Ratings - 0, 1/2, 3/4, 1 and 2 Hr (See Item 4)





Section A-A

1. **Floor or Wall Assembly —** Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m^3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max area of opening 625 $in.^2$ (4032 cm^2) with max dimension 25 in. (635 mm).

See **Concrete Blocks** (CAZT) in the Fire Resistance Directory for names of manufacturers.

2. **Firestop Device* — Steel Plate —** Min 0.25 in. (6 mm) thick stainless or mild steel plate having precut openings with factory welded sleeves and/or frames for firestop devices. Plate sized to lap min of 3-1/2 in. (89 mm) onto floor or wall surfaces around periphery of opening. Plate secured to top surface of floor or both surfaces of wall with min 5/16 in. (8 mm) diam by 2-1/4 in. (57 mm) long steel anchor screws in conjunction with 5/16 in. (8 mm) by 1-1/2 in. (38 mm) diam steel washers around periphery of opening. Fasteners to be installed within 1 in. (25 mm) of each corner of plate with max spacing between fasteners not to exceed 5 in. (127 mm). Steel plate provided with factory installed weld pins and friction fit washers for securement of packing material (Item 5) within the annular space of the opening. Steel plate with weld pins is provided by firestop device manufacturer. In wall openings, insulation weld pins are attached to one plate only.

3. **Firestop Device(s)* —** One or more firestop devices to be installed within the sleeved/framed holes in steel plate (Item 2) at top surface of floor or both surfaces of wall . The device frames/sleeves may be oriented to extend toward the top or bottom of the floor opening, or either side of the wall opening. Any combination of the following firestop devices may be used:

A. **Firestop Device* —** Circular RS transit firestop device for use in pre-drilled or pre-formed openings, sized to the OD of the penetrant and installed per the accompanying installation instructions. Each device consists of two semi-circular elastomeric inserts with removable elastomeric layers and steel compression plates. The elastomeric layers of the device are removed one by one until a max gap of 0.04 (1 mm) is formed between the two inserts. After installation of the device into the opening, the nuts of the compression plate are tightened to form an effective seal around the penetrating item.

ROXTEC INTERNATIONAL AB — Types RS-23, RS-25, RS-31, RS 43, RS-50, RS-68, RS-75, RS-100, RS-125 or RS-150.

Types RS-23 ES, RS-25 ES, RS-31 ES, RS 43 ES, RS-50 ES, RS-68 ES, RS-75 ES, RS-100 ES, RS-125 ES or RS-150 ES.

Types RS-23 PE, RS-25 PE, RS-31 PE, RS 43 PE, RS-50 PE, RS-68 PE, RS-75 PE, RS-100 PE, RS-125 PE or RS-150 PE.

ROXTEC INC — Type ROX RS-50, ROX RS-68, ROX RS-75, or ROX RS-100.

B. **Firestop Device* —** Circular R transit firestop device kit for use in pre-drilled or pre-formed openings, sized to the OD of the penetrant and installed per the accompanying installation instructions. Each device consists of a round elastomeric insert with steel compression plates and square packing space for the penetrants and elastomeric sealing modules. Each module consists of two module halves and elastomeric layers shaped into a semi-circle. The sealing modules are fit around the through penetrant within the opening and the layers are removed one by one until a max gap of 0.04 (1 mm) is formed between the two module halves. After installation of the modules into the device, the bolts of the compression plate are tightened to form an effective seal around the penetrants.
ROXTEC INTERNATIONAL AB — Types R-70, R-75, R-100, R-125, R-127, R-150 or R-200. Types R-70 ES, R-75 ES, R-100 ES, R-125 ES, R-127 ES, R-150 ES or R-200 ES.

ROXTEC INC — Type ROX R-100, ROX R-127, ROX R-150, ROX R-200.

C. **Firestop Device* —** Firestop devices each consist 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 frame with integral frame flange shall be welded to either side of each steel plate (Item 3). 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 cable in each sealing module in accordance with manufacturer installation instructions. The sheets of the multi diameter sealing modules halves are removed one by one until a max gap of 0.04 in. (1 mm) is formed between the two module 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 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 through penetrants and insert modules.
ROXTEC INTERNATIONAL AB — B 2x1, B 4x1, B 6x1, B 8x1, 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 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 2x2, GHM BG 2x3, GHM BG 2x4, GHM BG-4x1, GHM BG 4x2, GHM BG 4x3, GHM BG 4x4, GHM BG 6x1, GHM BG 6x2, GHM BG 6x3, GHM BG 6x4, GHM BG 8x1, GHM BG 8x2, GHM BG 8x3, GHM BG 8x4, GKOH 2x1, GKOH 4x1, GKOH 6x1, GKOH 8x1, GOH 2x1, GOH 4x1, GOH 6x1, GOH 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

ROXTEC INC — B-2x1, B-4x1, B-6x1, B-8x1, G-2x1, G-4x1, G-6x1, G-8x1, GH-2x1, GH-4x1, GH-6x1, GH-8x1, GH BG-2X1, GH BG-4X1, GH BG-6X1, GH BG-8X1, GHM-2x1, GHM-4x1, GHM-6x1, GHM-8x1, GHM BG-2X1, GHM BG-4X1, GHM BG-6X1, GHM BG-8X1, GOH-2x1, GOH-4x1, GOH-6x1, GOH-8x1, GKOH-2x1, GKOH-4x1, GKOH-6x1, GKOH-8x1, SF-2x1, SF-4x1, SF-6x1, SF-8x1

4. **Through-Penetrants —** Within the loading area for each firestop device (Item 4), any combination of the following types and sizes of through penetrants may be installed. Penetrants to be rigidly supported on both sides of floor or wall assembly.

A. One or more cable(s) may be installed. The cables may be used for a 0 to 100 percent visual fill, with max one cable per sealing module. Any combination of the following types of cables may be used:

A1. Max 1000 kcmil (or smaller) copper conductor shielded or unshielded power cable with polyvinyl chloride (PVC) jacket and ethylene-propylene rubber (EPR) insulation. **The T, FT and FTH Ratings for the firestop system shall not exceed 1 hr when this cable type is used.**

A2. Max 12 pair No. 22 AWG copper conductor communication cable with polyvinyl chloride insulation and jacket materials. **The T, FT and FTH Ratings for the firestop system shall not exceed 1 hr when this cable type is used.**

A3. Multiple fiber optic communication cables jacketed with polyvinyl chloride and having a max outside diameter of 1/4 in. (6 mm). **The T, FT and FTH Ratings for the firestop system shall not exceed 1 hr when this cable type is used.**

A4. Max 100 pair No. 24 AWG copper conductor communication cable with polyvinyl chloride insulation and jacket materials. **The T, FT and FTH Ratings for the firestop system shall not exceed 1/2 hr when this cable type is used.**

A5. Max 3/C with ground - No. 6 AWG (or smaller) cable with cross-linked polyethylene insulation and PVC jacket. **The T, FT and FTH Ratings for the firestop system are 0 hr when this cable type is used.**

A6. Max 4/C with Ground - No. 8 AWG (or smaller) cable with cross-linked polyethylene insulation and PVC **The T, FT and FTH Ratings for the firestop system are 0 hr when this cable type is used.**

B. **Metallic Penetrant —** Within the loading area for each firestop device module, the metallic penetrant specified below may be used. The following types and sizes of metallic penetrants may be used:

B1. Nom 4 in. (102 mm) diam (or smaller) AISI 304 Sch 40 stainless steel pipe. For Firestop Device Item 3C, max diam of penetrant is 2 in. (102 mm).

B2. Nom 4 in. (102 mm) diam (or smaller) Sch 40 steel pipe. For Firestop Device Item 3C, max diam of penetrant is 2 in. (102 mm).

B3. Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit.
The T, FT and FTH Ratings for the firestop system when metallic penetrants are used shall not exceed 1 hr except that when the metallic pipe (Item 5B) exceeds 2 in. (51 mm) diam, the T, FT and FTH Ratings are 3/4 hr. When the firestop system employs only 1/8 in. (3.2 mm) diam metallic penetrants in the RS25 firestop device, the T, FT and FTH Ratings are 2 hr.

5. **Packing Material —** Mineral wool batt insulation is provided as a component of the Firestop Device (Item 2). The batts of insulation, precut to size for the intended firestop opening configuration, are provided by the firestop device manufacturer. Packing material to be installed into opening against steel plate to completely fill the annular space within the opening between and around the firestop devices, penetrants and periphery of opening. Insulation is compression fit to full depth of opening and retained in position with the steel plate insulation weld pins and friction fit washers provided by firestop device manufacturer. Small pieces of insulation to be stuffed into opening as needed to fill any voids evident between and around the penetrants to attain the full packing depth. Seams in the insulation layers to be tightly butted and offset between layers.

6. **Fill, Void or Cavity Materials* — Sealant —** A min 1/4 in. (6 mm) diam bead of sealant shall be applied as a gasket between the plate (Item 3) and concrete around entire perimeter of through opening, at the top surface of floor or both surfaces of the wall.
See **Fill, Void or Cavity Material** (XHHW) category in the Fire Resistance Directory for names of manufacturers.

6A. **Butyl Rubber Gasket —** (Not Shown) As an alternate to the sealant (Item 6), a nom 5/16 in. (8 mm) thick by 5/16 in. (8 mm) wide butyl rubber gasket with self-adhesive may be installed around the mounting flange. The gasket shall be recessed in approx 1/2 in. (13 mm) and 2 in. (51 mm) from the perimeter of the device frame mounting flange such that the continuous gasket brackets the line of fasteners along each side of the device.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2020-05-01

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