



Classified by  
Underwriters Laboratories, Inc.  
to CAN/ULC-S115

# System No. W-J-8043

F Rating — 2 Hr

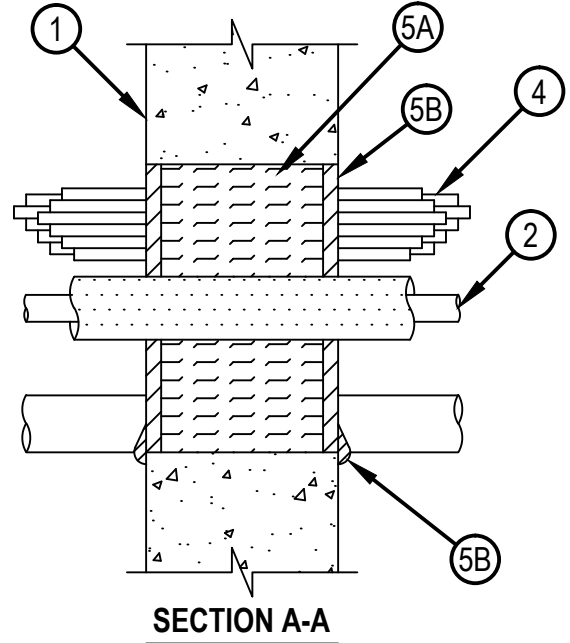
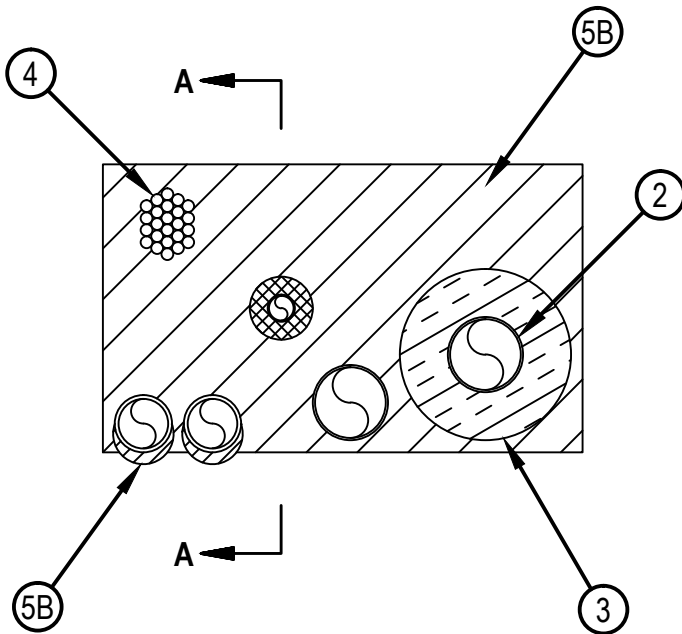
FT Ratings — 0, 1/2, 3/4, 1-1/2 and 2 Hr (See Items 2, 3 and 4)

FH Rating — 2 Hr

FTH Ratings — 0, 1/2, 3/4, 1-1/2 and 2 Hr (See Items 2, 3 and 4)



WJ 8043



System tested with a pressure differential of 2.5 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side.

1. Wall Assembly — Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max area of square, rectangular, or circular opening is 240 sq in. (1548 cm<sup>2</sup> with max dimension of 20 in. (508 mm)  
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Through-Penetrant — One or more pipes, conduit or tubes to be installed within the opening. The total number of through-penetrants is dependent on the size of the opening and the types and sizes of the penetrants. Any combination of the penetrants described below may be used provided that the following parameters relative to the annular spaces and the spacing between the through penetrants are maintained. The separation between the penetrants shall be min 1 in. (25 mm) to max 20 in. (508 mm). The annular space between penetrants and the periphery of opening shall be min 0 in. (point contact) to max 20 in. (508 mm). Pipes, conduit or tubes to be rigidly supported on both sides of wall assembly. The following types and sizes of pipes, conduit or tubes may be used.
  - A. Copper Tubing — Nom 3 in. (76 mm) diam (or smaller) Type L (or heavier) copper tube.
  - B. Copper Pipe — Nom 3 in. (76 mm) diam (or smaller) Regular (or heavier) copper pipe.
  - C. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
  - D. Iron Pipe — Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.
  - E. Conduit — Nom 3 in. (76 mm) diam (or smaller) electric metallic tubing (EMT) or rigid steel conduit.
  - F. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 cellular or solid core PVC pipe for use in closed (process or supply) piping systems.
  - G. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

T Rating is 0 Hr if bare pipe and tubing is used.



Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of  
Underwriters Laboratories, Inc.  
April 26, 2017

## System No. W-J-8043



WJ 8043

3. Pipe Insulation — One or more metallic penetrants (pipe or tubing) may be insulated with the following types of pipe coverings:
- A. Pipe Covering\* — Min 1 in. (25 mm) to max 2 in. (51 mm) thick hollow cylindrical heavy density min 3.5 pcf (56 kg/m<sup>3</sup>) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product.  
See Pipe and Equipment Covering - Materials (BRGU) 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.
  - B. Tube Insulation-Plastics+ — Min 1/2 in. (13 mm) to max 3/4 in. (19 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing.  
See Plastics+ (QMFZ2) category in the Plastics Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL 94 Flammability Classification of 94-5VA may be used.  
The annular space between the insulated penetrants and the periphery of the opening shall be min 0 in. (point contact) The separation between the insulated penetrants and the other penetrants shall be a min 1 in. (25 mm) to max 20 in (508 mm).  
T Rating is 1-1/2 hour if Item 3B is used. T rating is 2 hr if Item 3A is used.
4. Cables — One max 3 in. (76 mm) diam bundle of cables installed within the opening and rigidly supported on both surfaces of wall. The annular space between the tightly-bundled cables and the periphery of the opening shall be min 0 in. (point contact) to max 20 in. (508 mm). The separation between the cable bundle and the other penetrants shall be min 1 in. (25 mm) to max 20 in. (508 mm). Any combination of the following types and sizes of cables may be used:
- A. Max 25 pair No. 24 AWG telephone cable with polyvinyl chloride (PVC) insulation and jacket.
  - B. Max 7/C No. 12 AWG copper conductor power and control cable with PVC or cross-linked polyethylene (XLPE) insulation and PVC jacket.
  - C. Multiple fiber optical communication cable jacketed with PVC and having a max outside diam of 1/2 in. (13 mm).
  - D. Max 3/C No. 8 AWG with bare aluminum ground, PVC insulated steel Metal-Clad+ Cable currently Classified under the Through Penetrating Product\* (XHLY) category.
  - E Max 3/C (with ground) No. 8 AWG (or smaller) nonmetallic sheathed (Romex) cable with PVC insulation and jacket materials.
  - F. RG/U coaxial cable with polyethylene (PE) insulation and polyvinyl chloride (PVC) jacket having a max outside diam of 1/2 in. (13 mm).
  - G. Max 3/4 in. (19 mm) diam copper ground cable with or without PVC jacket.
  - H. Max 1-1/4 in. (32 mm) Diam single or multi conductor mineral-insulated copper-clad cable.  
T Rating is 1/4 hr if cables D, G and H are used. T Rating is 3/4 Hr for any other combination.
5. Firestop System — The firestop system shall consist of the following:
- A. Packing Material — Min 4-3/4 in. (121 mm) thickness of min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material recessed from both surfaces of the wall to accommodate the required thickness of fill material.
  - B. Fill, Void or Cavity Material\* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. At the point contact location between through penetrants and periphery of opening, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the concrete/through penetrant interface on both surfaces of wall.  
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.

+ Bearing the UL Listing Mark

# Bearing the UL Recognized Component Mark



Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of  
Underwriters Laboratories, Inc.  
April 26, 2017