



SOUDAL

Complete Firestop Systems Guide

Passive Fire Protection products are tested to various test requirements, please check with your local building code for the requirements within your municipality.

Firestop Systems are tested to worse-case scenario, use this guide as a rule of thumb.

1. Any pipe or conduit with a diameter smaller than the listed value may be used.
2. Any pipe or conduit with a wall thickness heavier than the listed value may be used.
3. Any cable tray with a width and / or loading depth narrower than the listed value may be used.
4. Any cable with similar insulation / jacketing and smaller size or gauge may be used.
5. A rated Firestop system "F" rating may be applied to a wall or floor of equal or lesser "F" rating, the system then is rated at the lesser "F" rating. References to tested systems are as follows:

UL indicates Underwriters Laboratories, Inc. (US)

cUL indicates Underwriters Laboratories, Inc. to Canadian Standards (Canada)

FM indicates Factory Mutual Research

SP indicates Underwriters Laboratories of Canada **SWR** indicates Southwest Research Institute

ITS indicates ETL Intertek Testing Services (formerly Warnock Hersey) **OPL** indicates Omega Point Laboratories, now owned & operated by ITS

Brief Definitions: Firestop & Draftstop

- **ASTM E-84:** "Surface Burning Characteristics of Building Materials" or ASTM E-84 usually refers to the flame spread or smoke development characteristics of a product (i.e. wall paper, coatings, carpet, etc.)
- **ASTM E-119:** "Fire Test of Building Construction and Materials", constructed to evaluate the ability of a fire-resistive floor or wall assembly to perform its barrier function, resisting the passage of heat, flames, hot gasses, and smoke in a fire situation.
- **ASTM E-136:** "Test Method for Behavior of Materials in a vertical Tube Furnace at 1400 degrees F". This test evaluates the ability of a material to be considered non-combustible. Weight loss of the test sample and heat rise due to the flammable content of the sample, are key criteria.
- **ASTM E-814 / UL1479:** "Standard Method of Fire Tests of Through Penetration Firestops". ASTM E-814 is a test to measure the performance of Firestop sealants in through penetration applications. The wall / ceiling / floor unit will be exposed to a furnace at temperatures ranging from 1725 to 2000° for a certain amount of time. At the conclusion of the test, the assembly will be subjected to a hose stream test. To pass the test, a fire-stop must stop the fire from traveling from the exposed side of the wall to the other side of the wall. It also must withstand the exposure to the hose stream test (30 psi if less than a four hour rating is achieved).
- **ASTM E-1966 / UL2079:** "Tests for Fire Resistance of Building Joint Systems". Expansion (Floor to Floor, Wall to Floor, Wall to Wall & Head of Wall) Joints that are first tested to the ASTM E-1399 where the joint is cycled (typically 500 times) through an intended range of movement before it is exposed to fire temperatures as those stated above. For the Head of Wall (HW-D) and Wall to Wall (WW-D) the joint is exposed to a hose stream test similar to the above after the fire temperature exposure test.
- **Draft Stop:** A material, device or construction installed to restrict the movement of air within open spaces of concealed areas of building components such as crawl spaces, floor-ceiling assemblies and roof-ceiling assemblies and attics. This may apply in residential and commercial construction.
- **Fireblocking:** Building materials installed to resist the free passage of flame and gasses to other areas of the building through small concealed spaces. This applies mainly to residential One & Two Family homes only.
- **Fireproofing:** The application of fire retardant cementitious, fibrous, wrap, or intumescent products to bare, unprotected steel structural beams, columns, or decks of a building. Fireproofing is most commonly spray applied, although it is possible to trowel apply as well. Fireproofing is designed to prevent the flash spread of fire, but will not prevent smoke and toxic gasses from traveling to unprotected areas.
- **Firestopping:** The installation of specially designed materials into an opening in a fire rated separation (floor, ceiling or wall) to contain the spread of fire, smoke, and toxic gas between areas of a building. Firestopping is commonly needed in such areas as mechanical, plumbing, and electrical penetrations, head of wall, edge of slab, and expansion construction joints. It is intended to buy time to exit the area of a fire and prevent the spread of the fire before it can be brought under control.

Firestop Systems Index

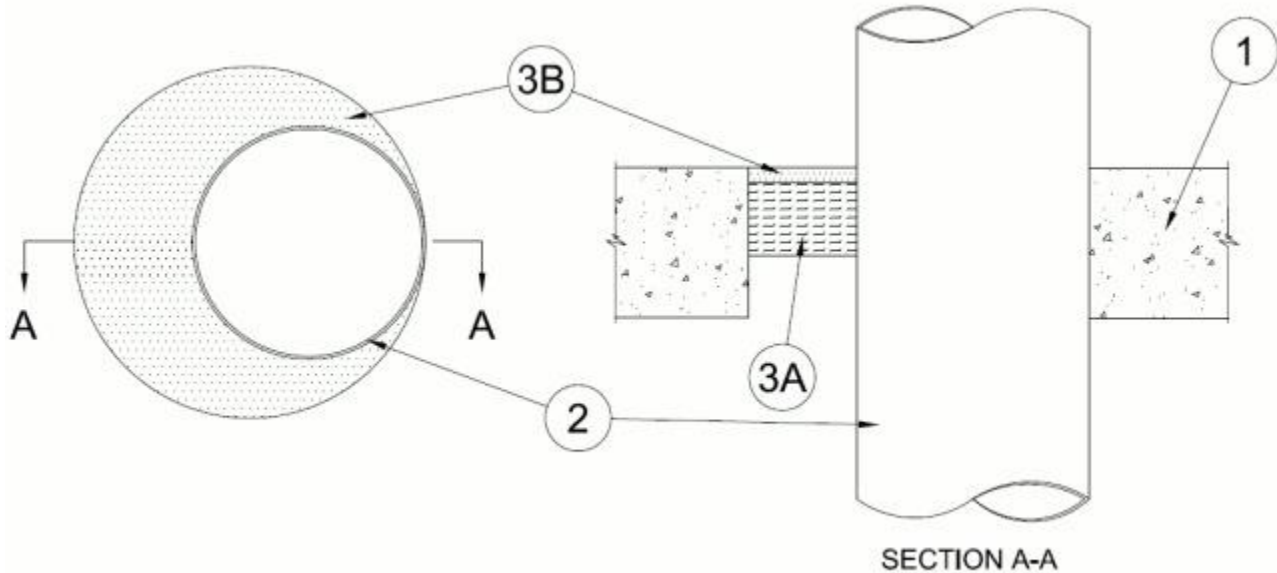
Assembly	Penetrant	Soudal Product	U.L. System	F-Rating	Page
Minimum 4 ½" Concrete Floor or Wall	Max 8" Steel Pipe, 4" Copper Pipe/Tubing, 6" Conduit	Acryrub Firestop	C-AJ-1649	2 Hr.	4
Minimum 9" Concrete Floor or Wall	Max 4" PVC, 4" CPVC, 2" PEX	Acryrub Firestop	C-BK-2043	1 Hr.	6
Minimum 9 1/4" Concrete Floor or Wall	Max 1 ½" PVC, 1 ½" CPVC	Acryrub Firestop	C-BJ-2049	1 Hr.	8
Minimum 4 1/2" Concrete Wall	Telecom, Romex, Coaxial & Metal Clad Cables w/Max 4" Diameter Opening	Acryrub Firestop	W-J-3221	2 Hr.	10
Minimum 5" Concrete Wall	Steel Sleeve- Max 1 ¼" Flexible Gas Pipe	Acryrub Firestop	W-J-1257	2 Hr.	12
	Multiple Communications Cable Combinations & Fiber Optics	Acryrub Firestop	W-J-3220	2 Hr.	14
Minimum 6" Concrete Wall	Max 23" x 23" 24 Gauge or Heavier Steel Duct	Acryrub Firestop	W-J-7148	2 Hr.	16
Gypsum Wall	Max 1 ¼" Flexible Steel Gas Pipe	Acryrub Firestop	W-L-1513	2 Hr.	18
	Max 4" Steel/Iron Pipe and Conduit	Acryrub Firestop	W-L-1514	2 Hr.	20
	Multi-conductor, Telephone & Fiber Optic Cables w/Nom ¾" Diameter Opening	Acryrub Firestop	W-L-3421	2 Hr.	22
	Max 64% Fill of Coaxial, Telecom, Metal Clad & SER Cables w/Max 4" Diameter Opening	Acryrub Firestop	W-L-3422	2 Hr.	24
	Max 23" x 23" 24 Gauge or Heavier Steel Duct	Acryrub Firestop	W-L-7237	2 Hr.	26

System No. C-AJ-1649

December 08, 2015

F Rating — 2 Hr

T Rating — 0 Hr



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/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 11-1/4 in. (284 mm).

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

2. Through Penetrant — One metallic pipe, tubing or conduit installed concentrically or eccentrically within the firestop system. An annular space of min 0 in. (point contact) to max 2-3/4 in. (70 mm) is required between the penetrant and the periphery of the opening. Pipe, tubing or conduit to be rigidly supported on each side of the floor or wall assembly. The following types and sizes of metallic pipes, tubing or conduit may be used:

- A. **Steel Pipe** — Nom 8 in. (203 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
- B. **Copper Pipe** — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.
- C. **Copper Tubing** — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
- D. **Conduit** — Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in. diam (or smaller) steel electrical metallic tubing.

3. Firestop System — The firestop system shall consist of the following:

- A. **Packing Material** — Min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* - Caulk — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

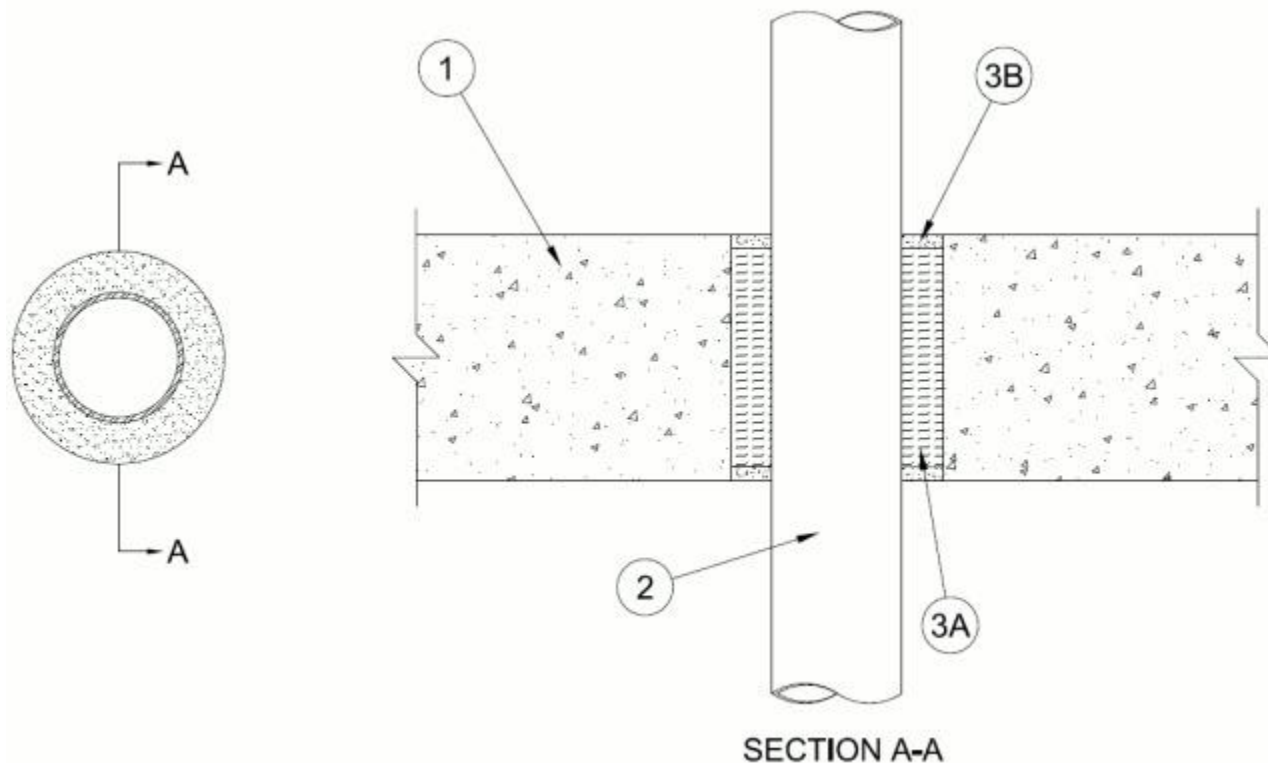
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

System No. C-BK-2043

December 08, 2015

F Rating — 2 Hr

T Rating — 0 Hr



1. Floor or Wall Assembly — Min 9 in. (229 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) reinforced concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 6 in. (152 mm).

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

2. Through Penetrant — One nonmetallic pipe to be installed concentrically within opening. The annular space between pipe and periphery of opening shall be 3/4 in. (19 mm). Pipe to be rigidly supported on both sides of the floor or wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) piping systems.

B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

C. Crosslinked Polyethylene (PEX) Tubing — Nom 2 in. (51 mm) diam (or smaller) SDR 9 PEX tubing for use in closed (process or supply) piping systems.

3. Firestop System — The firestop system shall consist of the following:

A. Packing Material — Min 8 in. (203 mm) thickness of min 2.8 pcf (45 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be

recessed from top surface of floor or both surfaces of wall as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* - Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within annulus, flush with both surfaces of floor or wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

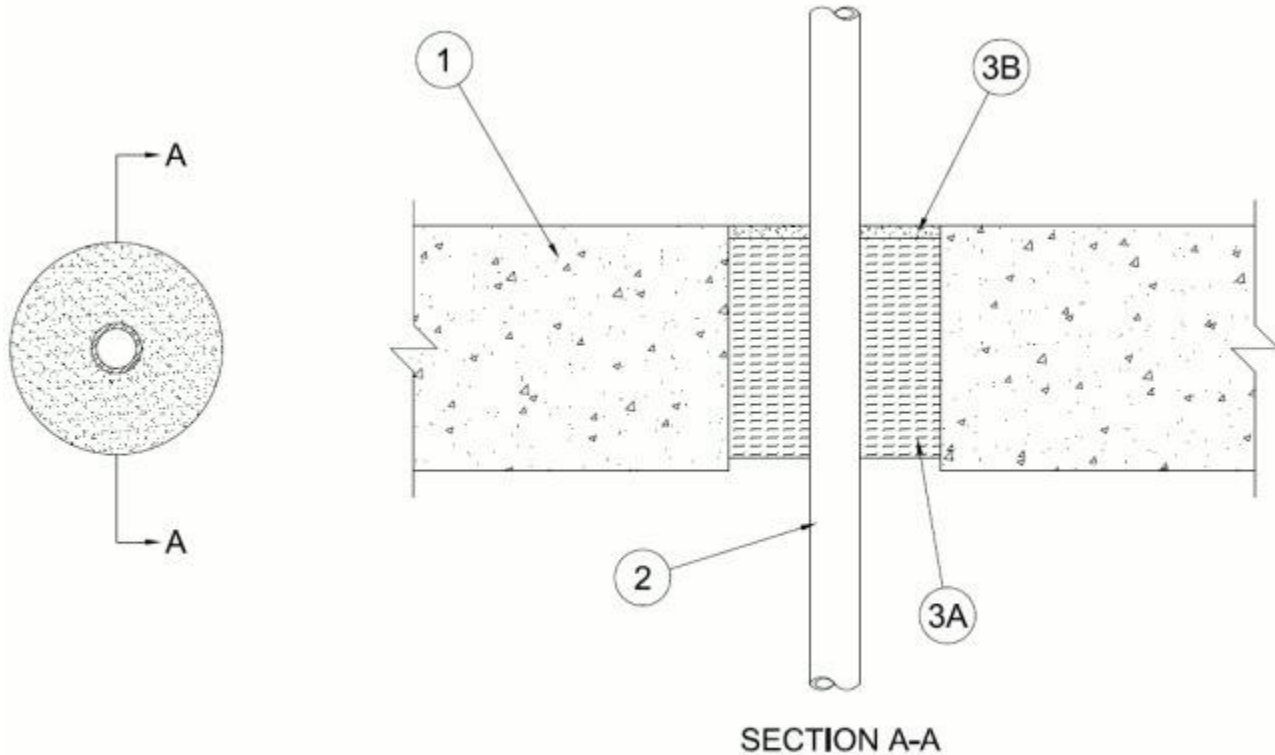
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

System No. C-BJ-2049

December 08, 2015

F Rating — 1Hr

T Rating — 0 Hr



1. **Floor or Wall Assembly** — Min 9-1/4 in. (235 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) reinforced concrete. Max diam of opening is 8 in. (203 mm). Wall may also be constructed of any UL Classified **Concrete Blocks***.

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

2. **Through Penetrant** — One nonmetallic pipe to be installed concentrically within opening. The annular space between pipe and periphery shall be 3-1/16 in. (78 mm). Pipe to be rigidly supported on both sides of the floor or wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. **Polyvinyl Chloride (PVC) Pipe** — Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** — Nom 1-1/2 in. (38 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

3. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — Min 8 in. (203 mm) thickness of min 2.8 pcf (45 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be

recessed from top surface of floor or both surfaces of wall as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* - Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within annulus, flush with top surface of floor or both surfaces of wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

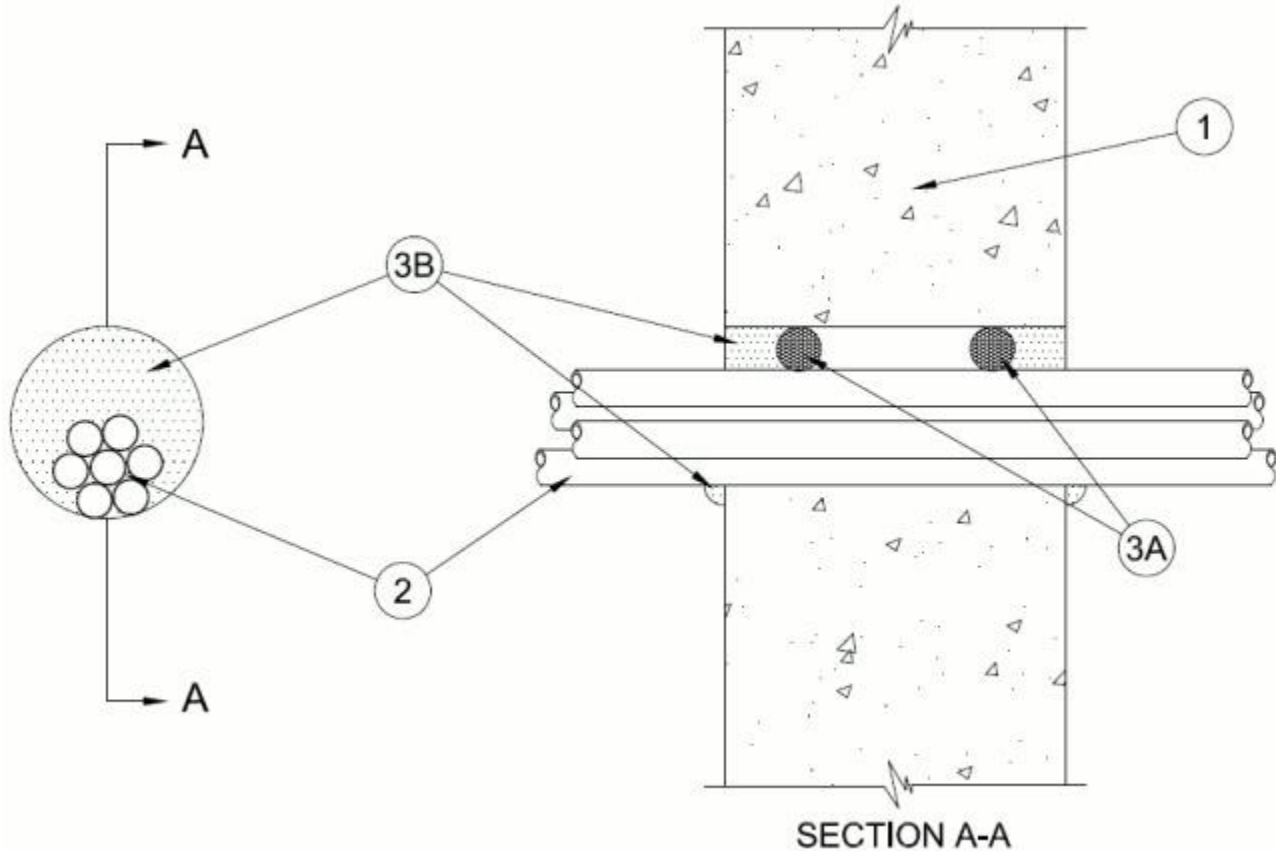
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

System No. W-J-3221

December 08, 2015

F Rating — 2 Hr

T Rating — 1/2 Hr



1. Wall Assembly — Min 4-1/2 in. (114 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 4 in. (102 mm).

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

2. Cables — Aggregate cross-sectional area of cables to be min 25 percent to max 64 percent of the aggregate cross-sectional area of the opening. Cables to be tightly bundled and rigidly supported on both sides of wall assembly. The annular space between cables and periphery of opening shall be min 0 in. (point contact) to max 2 in. (51 mm). Any combination of copper conductor cables of the following types and sizes may be used:

- A. Max 2/C with ground, No. 12 AWG MC (BX) cable with polyvinyl chloride (PVC) insulation on conductors inside a steel armored jacket.
- B. Max 3/C with ground, No. 12 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.
- C. Max 3/C with ground, No. 10 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.

- D. Max 25 pair, No. 20 AWG (or smaller) copper conductor telephone cable with XLPE/PVC insulation, with or without PVC jacket.
- E. Max RG59/U (or smaller) television coaxial cable with fluorinated ethylene insulation and jacketing.
- F. Max 4 pair, No. 24 AWG (or smaller) copper conductor data cable with Hylar insulation and jacketing.
- G. Max 2/C, No. 22 AWG (or smaller) copper conductor alarm cable with PVC insulation.
- H. Max 1/C, No. 14 AWG (or smaller) Type MTW or THHN or THWN or gas & oil res II 600V (UL) or AWM VW-1 power cable.
- I. Max 1/C, No. 10 AWG (or smaller) Type THHN or THWN gasoline & oil resistant II 600V VW-1 E116364 (UL) power cable.
- J. Max 4/C, No. 18 AWG Type CL-2 Barostat II Sun res (UL) Listed thermostat cable.
- K. Max 3/C, No. 4/0 with ground, AWG aluminum Triple E Alloy AA8176 Type SE cable Style U Type XHH-W-2 CDRS E32071 (UL) service entrance cable.

3. Firestop System — The firestop system shall consist of the following:

- A. **Packing Material** — (Optional) — Foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.
- B. **Fill, Void or Cavity Material* - Caulk** — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At point contact location, a 1/2 in. (13 mm) diam bead of caulk applied at interface of cables and periphery of opening on both surfaces of wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

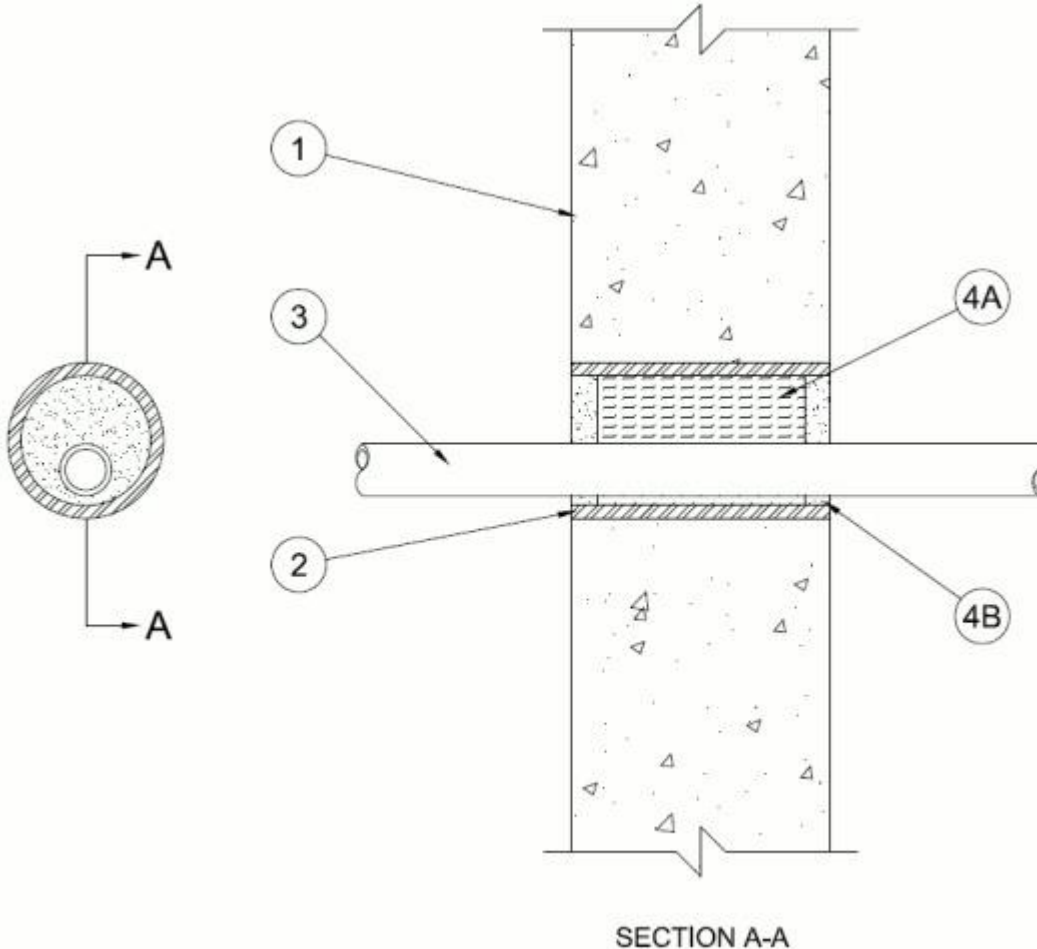
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

System No. W-J-1257

December 08, 2015

F Rating — 2 Hr

T Rating — 0 Hr



1. **Wall Assembly** — Min 5 in. (127 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 3 in. (76 mm).

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

2. **Steel Sleeve** — Nom. 3 in. (76 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe cast or grouted into wall. Length of steel sleeve to be equal to thickness of wall.

3. **Through Penetrant** — One nom 1-1/4 in. (32 mm) OD (or smaller) flexible steel gas pipe, to be installed concentrically or eccentrically within the firestop system. The annular space shall be min 1/4 in. (6 mm) to max 1-1/8 in. (29 mm). Piping to be rigidly supported on both sides of wall assembly.

OMEGA FLEX INC

4. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — Min 4 in. (102 mm) thickness of min 2.8 pcf (45 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material* - Sealant** — Min 1/2 in. (13 mm) thickness of fill material applied within annulus, flush with both surfaces of floor or wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

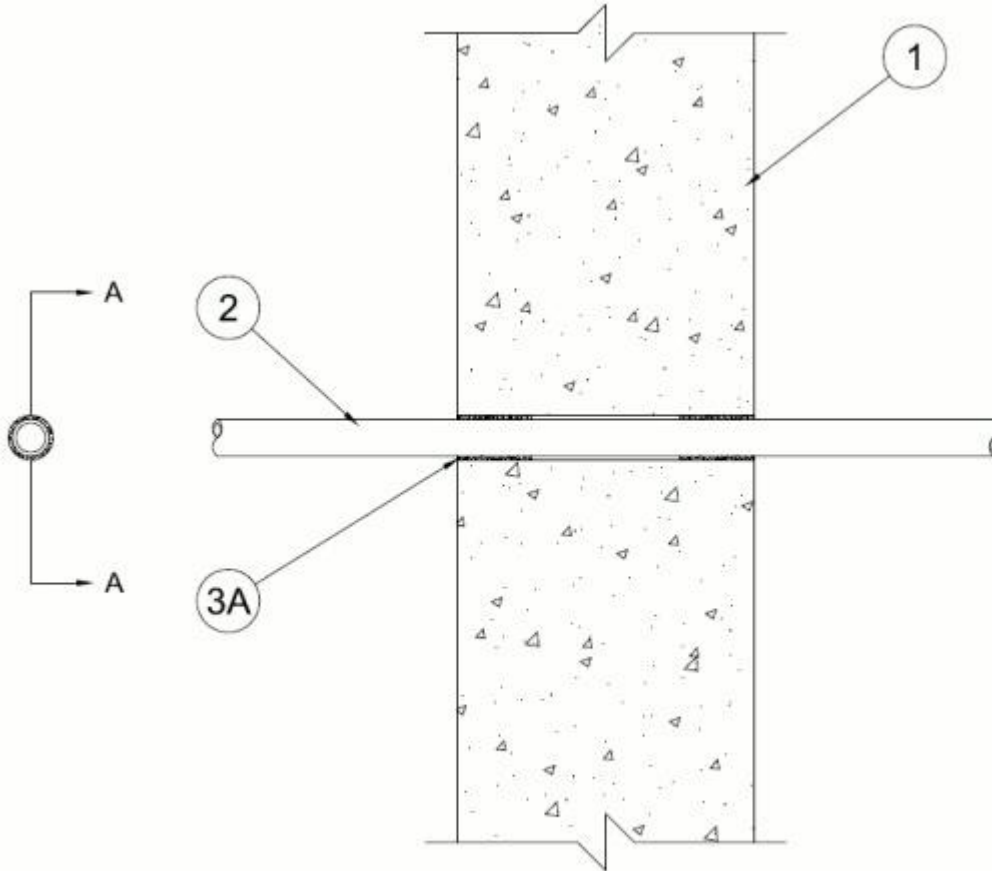
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

System No. W-J-3220

December 08, 2015

F Rating — 2 Hr

T Rating — 0 Hr



SECTION A-A

1. **Wall Assembly** — Min 5 in. (127 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Diameter of opening is 3/4 in. (19 mm).

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

2. **Cables** — One multi-conductor cable centered within a nom 3/4 in. (19 mm) opening. Cable to be rigidly supported on both sides of the wall assembly. The following types and sizes of cables may be used:

- A. Max 25 pr telephone cable No. 24 AWG (or smaller). Max diam. 0.40 in. (10 mm).
- B. Max seven conductor No. 12 AWG (or smaller). Max diam 1/2 in. (13 mm) wire cable.
- C. Max. 50 cond. (or smaller) fiber optic cable. Max. diam 0.68 in. (17 mm).

3. **Firestop System** — The firestop system shall consist of the following:

A. Fill, Void or Cavity Material* - Sealant — Min 1-1/4 in. (32 mm) fill material applied within annulus, flush with both surfaces of wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

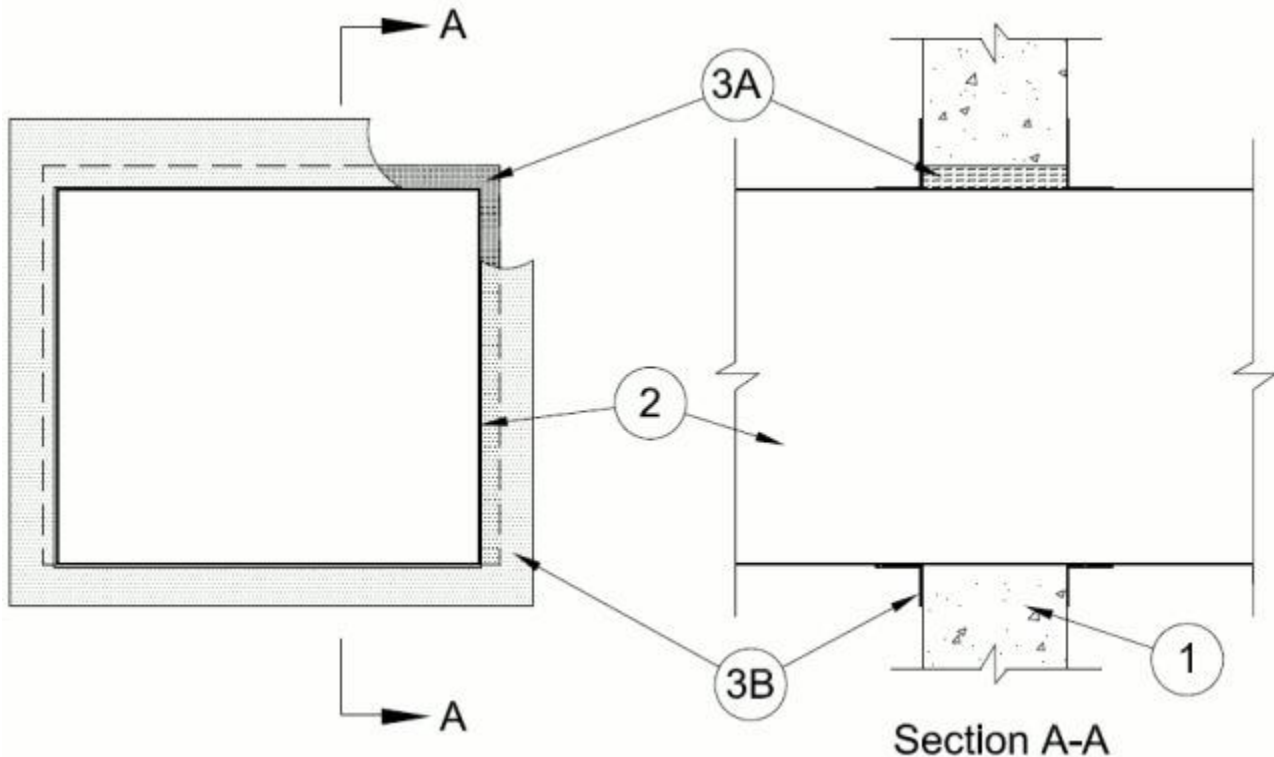
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

System No. W-J-7148

December 08, 2015

F Rating — 2 Hr

T Rating — 0 Hr



1. **Wall Assembly** — Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max area of opening is 576 sq in. (0.37 m²) with a max dimension of 24 in (610 mm).

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

2. **Steel Duct** — Max 23 by 23 in. No. 24 gauge (or heavier) steel duct to be installed either concentrically or eccentrically within the opening. The annular space shall be min 0 in. (point contact) to max 1 in. (25 mm). Duct to be rigidly supported on both sides of wall assembly.

3. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — Min 6 in.(152 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form, flush with both surfaces of wall.

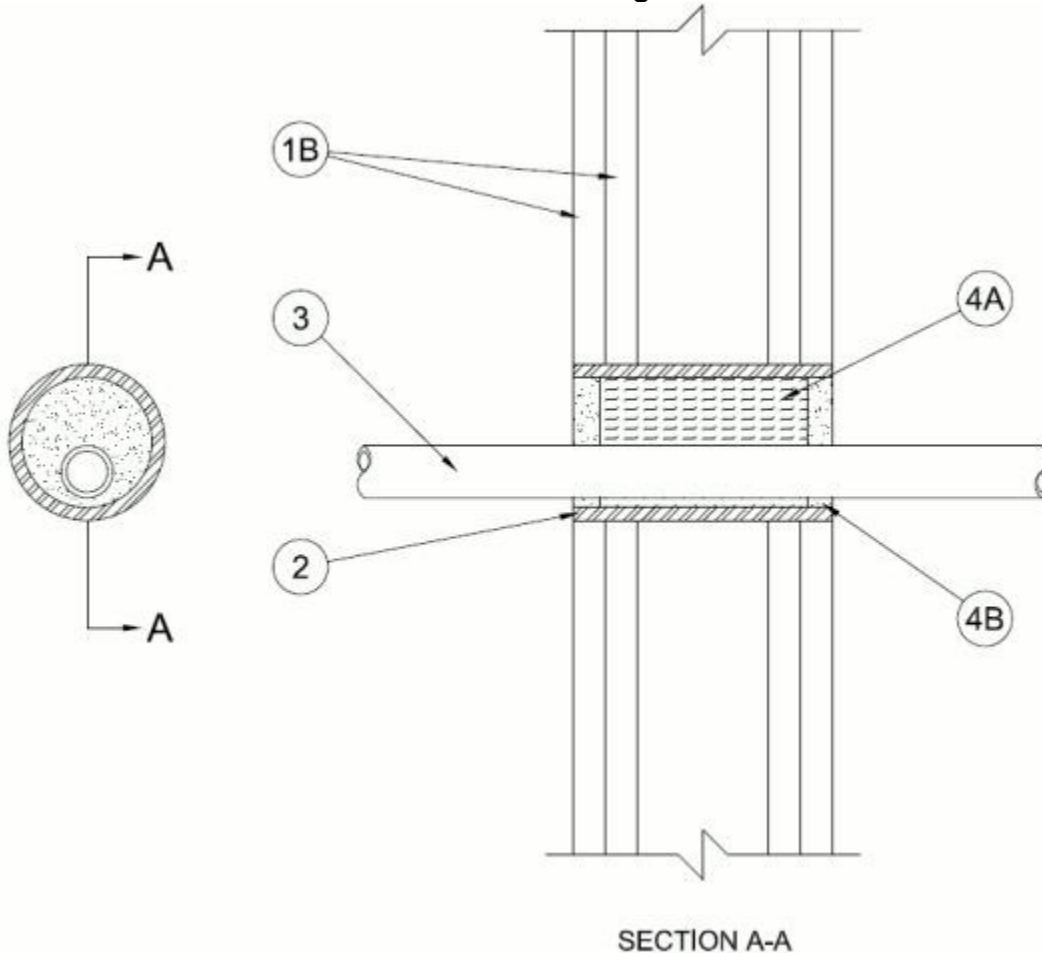
B. **Fill, Void or Cavity Material* - Caulk** — Min 3/16 in. (5 mm) wet thickness of fill material sprayed or brushed to completely cover mineral wool packing material on each side of the wall and to overlap a min of 2 in. onto wall and duct surfaces.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

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

System No. W-L-1513

December 08, 2015
F Rating — 1 and 2 Hr
T Rating — 0 Hr



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board / stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — One or two layers of nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Max diam of opening is 3 in. (76 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Steel Sleeve — Nom. 3 in (76 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe sleeve friction fit in nom 3 in. (76 mm) diam opening. Length of steel sleeve to be equal to thickness of wall.

3. **Through Penetrant** — One nom 1-1/4 in. (32 mm) diam (or smaller) flexible steel gas pipe, to be installed concentrically or eccentrically within the firestop system. The annular space shall be min 1/4 in. (6 mm) to max 1-1/8 in. (29 mm). Piping to be rigidly supported on both sides of wall assembly.

OMEGA FLEX INC

4. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — Min 4 in. (102 mm) thickness of min 2.8 pcf (45 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material* - Sealant** — Min 1/2 in. (13 mm) thickness of fill material applied within annulus, flush with both surfaces of wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

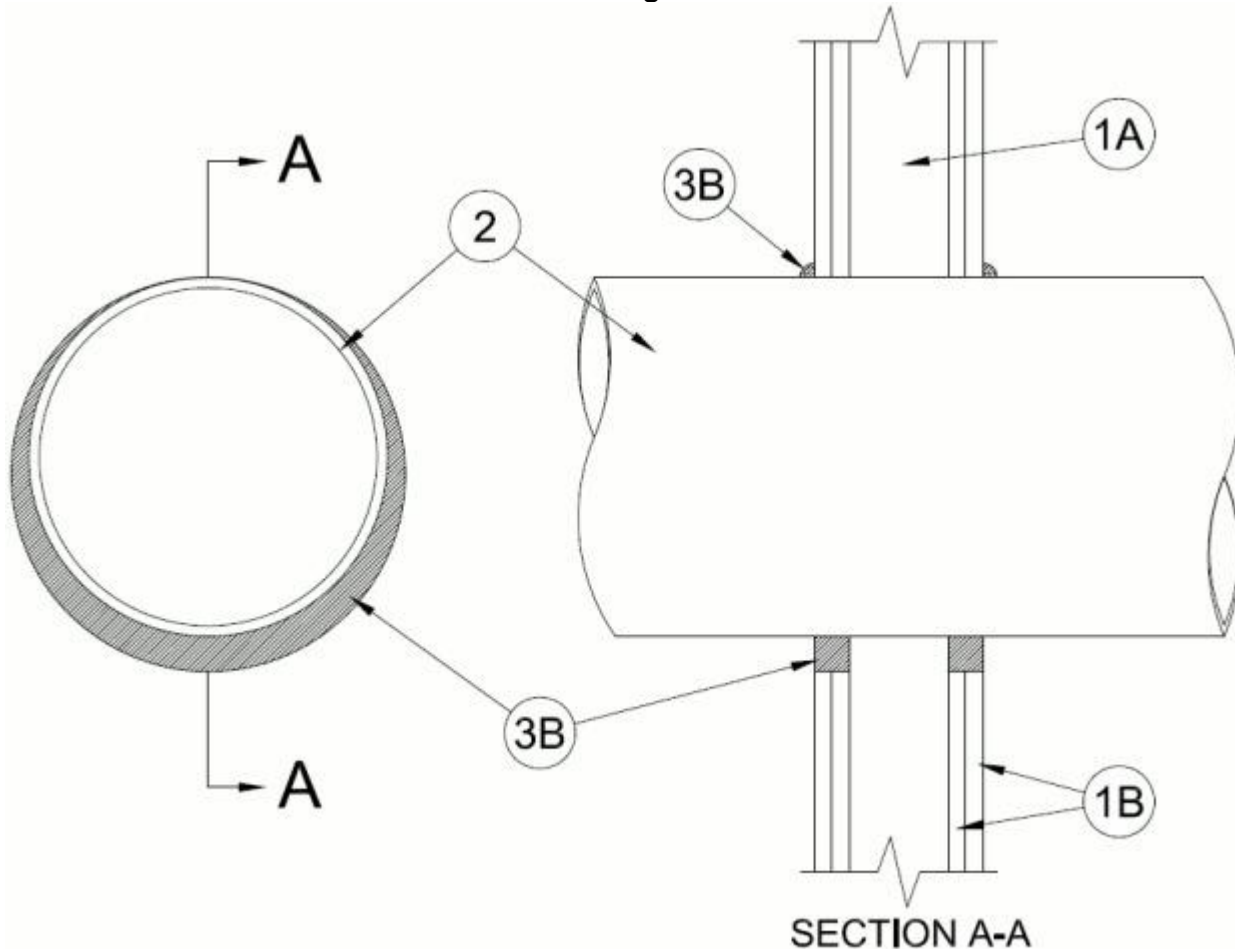
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

System No. W-L-1514

December 08, 2015

F Rating — 1 and 2 Hr (See Item 1)

T Rating — 0 Hr



1. **Wall Assembly** — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall framing consists of steel channel studs Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

B. **Gypsum Board*** — One or two layers of nom 5/8 in. (16 mm) thick gypsum wallboard as specified in the individual Wall and Partition Design. Max diam of opening is 14 in. (356 mm).

2. **Through Penetrant** — One metallic pipe, conduit or tubing to be installed concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:

A. **Steel Pipe** — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe. A nom annular space of 0 (point contact) to 1-1/4 in. (32 mm) is required within the firestop system.

B. **Iron Pipe** — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) cast iron pipe. A nom annular space of 0 (point contact) to 1-1/4 in. (32 mm) is required within the firestop system.

C. **Conduit** — Nom 4 in. (102 mm) diam (or smaller) steel conduit or nom 4 in. (102 mm) diam (or smaller) steel electrical metallic conduit A nom annular space of 0 (point contact) to 1 in. is required within the firestop system.

3. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — (Optional, Not Shown) — In 2 hr wall assemblies, foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from each surface of the wall to accommodate the required thickness of fill material.

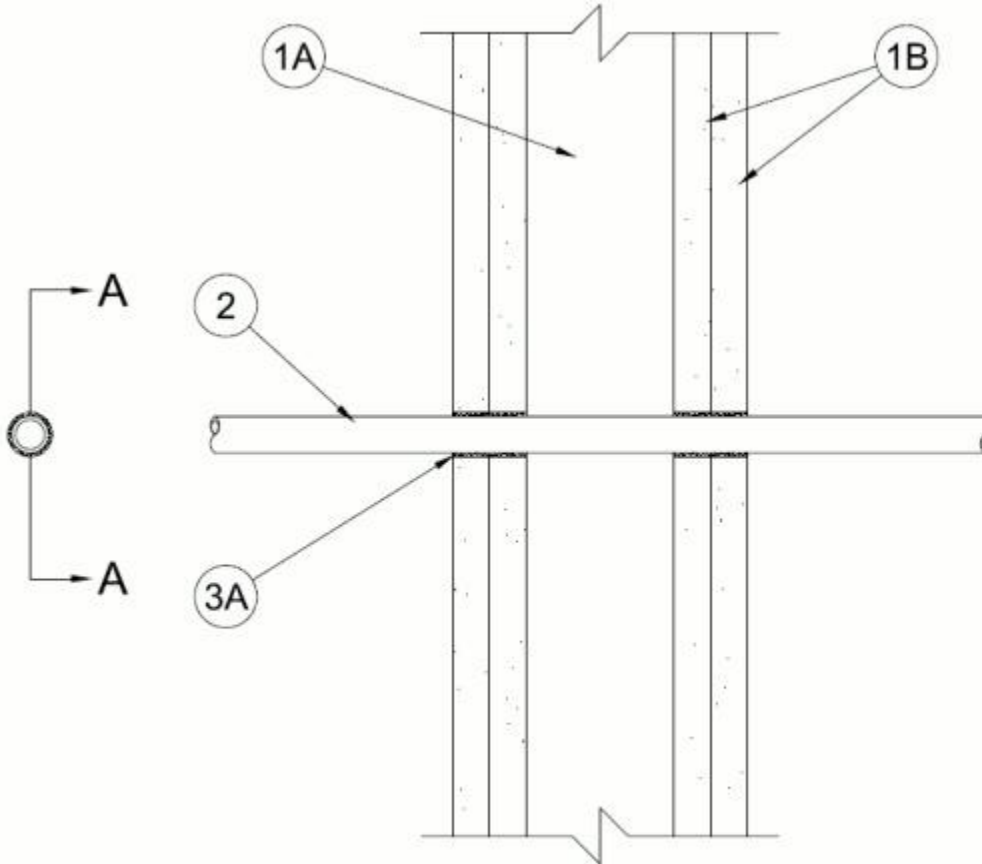
B. **Fill, Void or Cavity Material* - Caulk** — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus on both surfaces of the wall assembly. A min 1/2 in. (13 mm) diam bead of caulk shall be applied to the pipe/gypsum board interface at the point contact location on both sides of wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

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

System No. W-L-3421

December 08, 2015
F Rating — 1 and 2 Hr
T Rating — 0 Hr



SECTION A-A

1. **Wall Assembly** — The 1 or 2 hr fire-rated gypsum board / stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following features:

A. **Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.

B. **Gypsum Board*** — One or two layers of nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Nom. diam of opening is 3/4 in. (19 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. **Cables** — One multi-conductor cable centered within a nom 3/4 in. (19 mm) diam opening. Cable to be rigidly supported on both sides of wall assembly. The following types and sizes of cables may be used:

- A. Max 25 pr telephone cable No. 24 AWG (or smaller). Max diam 0.40 in. (10 mm).
- B. Max seven conductor No. 12 AWG (or smaller). Max diam 1/2 in. (13 mm) wire cable.
- C. Max. 50 cond. (or smaller) fiber optic cable. Max. diam 0.68 in. (17 mm).

3. **Firestop System** — The firestop system shall consist of the following:

- A. **Fill, Void or Cavity Material* - Sealant** — Min 1-1/4 in. (32 mm) fill material applied within annulus, flush with both surfaces of wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

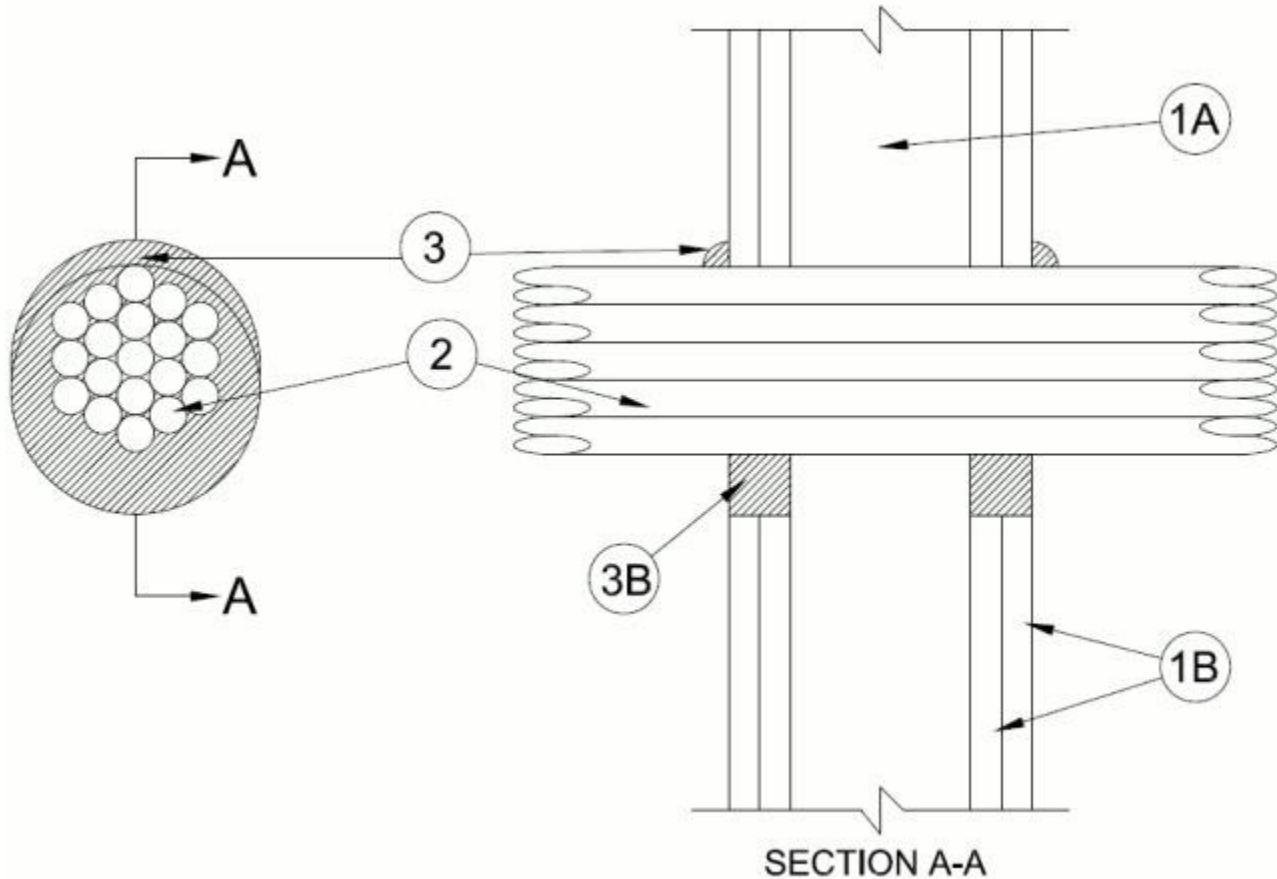
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

System No. W-L-3422

December 08, 2015

F Rating — 1 and 2 Hr (See Item 1)

T Rating — 1/2 Hr



1. **Wall Assembly** — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (52 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610) OC.

B. **Gypsum Board*** — One or two layers of nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Max diam of opening is 4 in. (102 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. **Cables** — Aggregate cross-sectional area of cables to be min 25 percent to max 64 percent of the aggregate cross-sectional area of the opening. Cables to be tightly bundled and rigidly supported on both sides of wall assembly. The annular space between the cables and the periphery of opening shall be min 0 in. (point contact) to max 2 in. Any combination of following types and sizes of copper conductor cables may be used:

- A. Max 2/C with ground, No. 12 AWG MC (BX) cable with polyvinyl chloride (PVC) insulation on conductors inside a steel armored jacket.
- B. Max 3/C with ground, No. 12 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.
- C. Max 3/C with ground, No. 10 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.
- D. Max 25 pair, No. 20 AWG (or smaller) copper conductor telephone cable with XLPE/PVC insulation, with or without PVC jacket.
- E. Max RG59/U (or smaller) television coaxial cable with fluorinated ethylene insulation and jacketing.
- F. Max 4 pair, No. 24 AWG (or smaller) copper conductor data cable with Hylar insulation and jacketing.
- G. Max 2/C, No. 22 AWG (or smaller) copper conductor alarm cable with PVC insulation.
- H. Max 1/C, No. 14 AWG (or smaller) Type MTW or THHN or THWN or gas & oil res II 600V (UL) or AWM VW-1 power cable.
- I. Max 1/C, No. 10 AWG (or smaller) Type THHN or THWN gasoline & oil resistant II 600V VW-1 E116364 (UL) power cable.
- J. Max 4/C, No. 18 AWG Type CL-2 Barostat II Sun res (UL) Listed thermostat cable.
- K. Max 3/C, No. 4/0 with ground, AWG aluminum Triple E Alloy AA8176 Type SE cable Style U Type XHH-W-2 CDRS E32071 (UL) service entrance cable.

3. Firestop System — The firestop system shall consist of the following:

- A. **Packing Material** — (Optional, Not Shown) — For 2 hr wall assemblies, foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.
- B. **Fill, Void or Cavity Material* - Caulk** — Min 5/8 in.(16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At point contact location, 1/2 in. (13 mm) diam bead of caulk applied at interface of cables and periphery of opening on both surfaces of wall.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

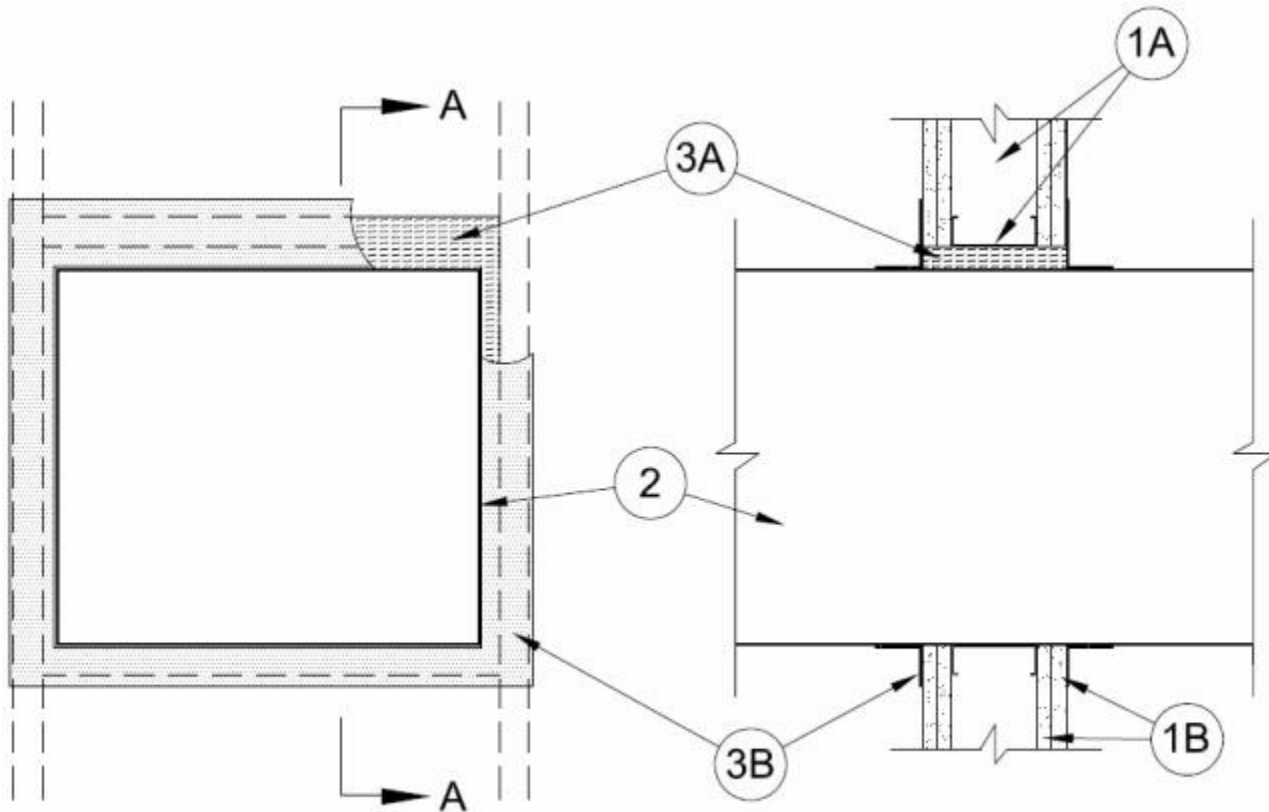
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

System No. W-L-7237

December 08, 2015

F Rating — 1 and 2 Hr (See Item 1)

T Rating — 0 Hr



Section A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing shall consist of steel channel studs. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC. Additional framing members shall be used to completely frame around opening.

B. Gypsum Board* — Min 5/8 in. (16 mm) thick, 4 ft (1219 mm) wide with square or tapered edges. The gypsum board type, thickness, number of layers and orientation shall be as specified in the individual U400 or V400 Wall and Partition Design. Max area of opening is 576 sq in. (0.37 m²) with a max dimension of 24 in. (610 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Steel Duct — Max 23 by 23 in. (584 by 584 mm) No. 24 gauge (or heavier) steel duct to be installed either concentrically or eccentrically within the opening. The annular space shall be min 0 in. (point contact) to max 1 in. (25 mm) Duct to be rigidly supported on both sides of wall assembly.

3. Firestop System — The firestop system shall consist of the following:

A. Packing Material — Min 6 in. (152 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form, flush with both surfaces of wall.

B. Fill, Void or Cavity Material* - Caulk — Min 3/16 in.(5 mm) wet thickness of fill material sprayed or brushed to completely cover mineral wool packing material on each side of the wall and to overlap a min of 2 in. (51 mm) onto gypsum board and duct surfaces.

SODAL ACCUMETRIC — Soudal Acryrub Firestop

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