

System No. F-A-5015
F Rating — 2 Hr
T Ratings — 1/2 and 3/4 Hr (See Item 3)

1. Floor Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete.

1A. Floor Assembly - (Optional - Not Shown) — The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series Designs in the Fire Resistance Directory and as summarized below:

A. Steel Floor and Form Units* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.

B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete.

2. Firestop Device* — Cast in place firestop device permanently embedded during concrete placement or grouted in concrete floor assembly in accordance with accompanying installation instructions with a max 2 in. (51 mm) projection above the top surface of the concrete.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 680-75/2.5"N, CP 680-110/4"N, CP 680-160/6"N, CP 682-75/2.5", CP 682-110/4", CP 680-M 2", CP 680-M 3", CP 680-M 4", CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6"

3. Through Penetrants — One metallic pipe, conduit or tubing to be installed within the firestop device. Pipe, conduit or tubing to be rigidly supported on both sides of floor assembly. The following types of pipe, conduit or tubing may be used:

A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.

C. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.

The firestop device and metallic penetrant shall be sized as follows:

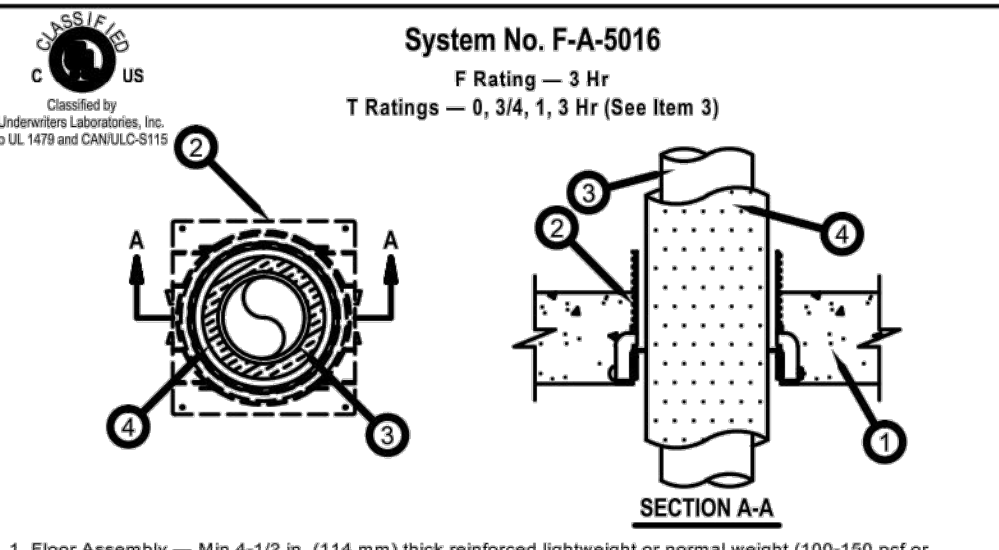
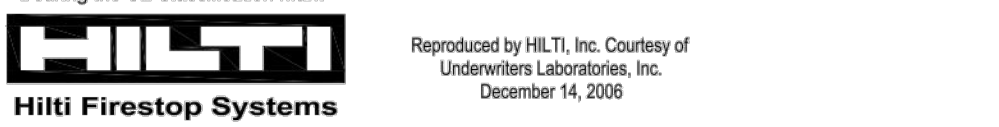
Nom Pipe Diam, in. (mm)	Nom Thick. Of Pipe Insul., in. (mm)	Firestop Device	T-Rating, Hr
1/2 (13)	1 (25)	CP 680-75/2.5"N, CP 682-72/2.5"CP 680-M 2", CP 680-P 2"	3/4
1 (25)	3/4 (19)	CP 680-75/2.5"N CP 680-P 3"	1/2
1 (25)	1 (25)	CP 680-M 3", CP 680-P 3"	1/2
1 (25) (see Item 5)	1 (25)	CP 682-110/4"CP 680-M 4"	1/2
2 (51)	1 (25)	CP 680 110/4"N, CP682 110/4"CP 680-M 4", CP 680-P 4"	1
2 (51)	3/4 (19)	CP 680-100/4"NCP 680-P 4"	1/2
4 (102)	3/4 (19)	CP 680-160/6"NCP 680-P 6"	1/2

4. Tube Insulation - Plastics* — Nom 3/4 or 1 in. (19 or 25 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing.

See Plastics* (QMF22) Category in the Plastics Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL94 Flammability Classification of 94-5VA may be used.

5. Packing Material — (Not Shown) — When using a 1 in. (25 mm) diam pipe with 1 in. (25 mm) thick AB/PVC pipe insulation in a 4 in. (102 mm) device, and a min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation shall be firmly packed into top of devices, flush with the top of the device.

Bearing the UL Classification Mark



System No. F-A-5016
F Rating — 3 Hr
T Ratings — 0, 3/4, 1, 3 Hr (See Item 3)

1. Floor Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete.

1A. Floor Assembly - (Optional - Not Shown) — The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series Designs in the UL Fire Resistance Directory and as summarized below:

A. Concrete — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete.

B. Steel Floor and Form Units* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.

2. Firestop Device* — Cast in place firestop device permanently embedded during concrete placement or grouted in concrete floor assembly in accordance with accompanying installation instructions with a max 2 in. (51 mm) projection above the top surface of the concrete.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 680-110/4" N, CP 680-160/6" N, CP 682-75/2.5", CP 682-110/4", CP 680-M 2", CP 680-M 3", CP 680-M 4", CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6"

3. Through Penetrants — One metallic pipe or tubing to be installed within the firestop device. Pipe or tubing to be rigidly supported on both sides of floor assembly. The following types of pipe or tubing may be used:

Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.

Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipes.

The firestop device and metallic penetrant shall be sized as follows:

Nom Pipe Diameter*	Nom Pipe Cover-in. (mm)	Firestop	T Rating-Hr
1/2 in. (13 mm)	1 (25)	CP 680-75/2.5"N, CP 682-75/2.5" CP 680-M 2", CP 680-P 2"	3
1 in. (25 mm)	1 (25)	CP 680-110/4"N, CP 682-110/4" CP 680-M 3", CP 680-P 3", CP 680-M 4", CP 680-P 4"	3/4
2 in. (51 mm)	3/4 (19)	CP 680-110/4"N CP 680-P 4"	1
4 in. (102 mm)	3/4 (19)	CP 680-160/6"N CP 680-P 6"	3/4

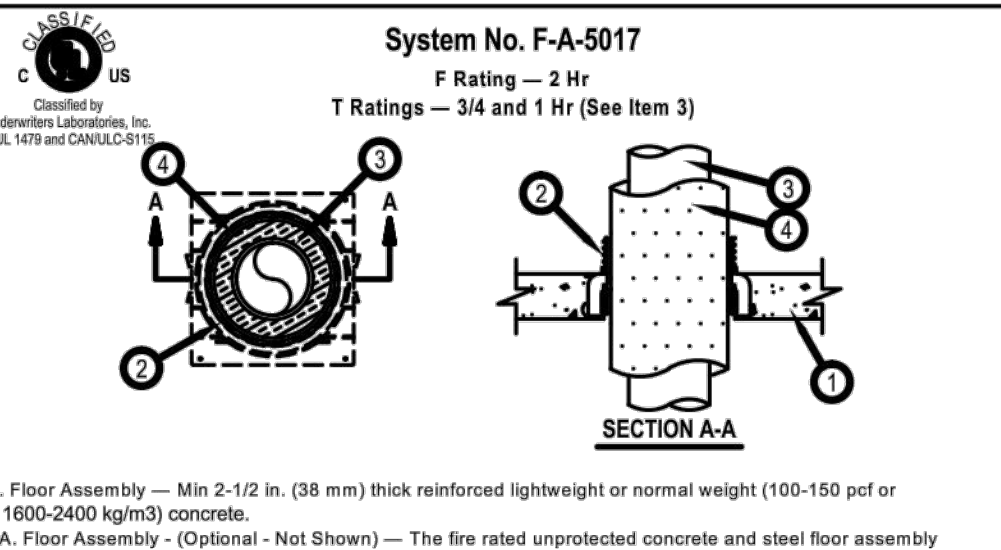
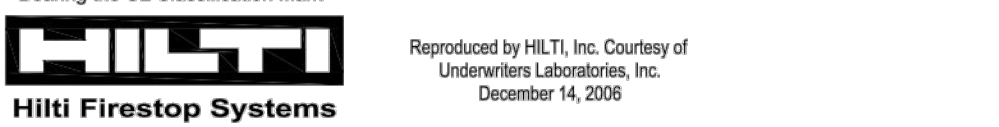
* - When pipe diameter smaller than shown in above table is used, the insulated pipe shall be installed in conjunction with Item 5 and the T Ratings are 0 hr.

4. Tube Insulation - Plastics* — Nom 3/4 or 1 in. (19 or 25 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing.

See Plastics* (QMF22) Category in the Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL94 Flammability Classification of 94-5VA may be used.

5. Packing Material — (Not Shown) When pipe sizes are less than those shown in the table in Item 3, min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool insulation shall be firmly packed to the fullest extent possible within the device flush with top surface of device.

*Bearing the UL Classification Mark



System No. F-A-5017
F Rating — 2 Hr
T Ratings — 3/4 and 1 Hr (See Item 3)

1. Floor Assembly — Min 2-1/2 in. (38 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete.

1A. Floor Assembly - (Optional - Not Shown) — The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series Designs in the Fire Resistance Directory and as summarized below:

A. Concrete — Min 2-1/2 in. (38 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete.

B. Steel Floor and Form Units* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.

2. Firestop Device* — Cast in place firestop device permanently embedded during concrete placement or grouted in concrete floor assembly in accordance with accompanying installation instructions with a max 2 in. (51 mm) projection above the top surface of the concrete.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 680-75/2.5"N, CP 680-110/4"N, CP 680-160/6"N, CP 682-75/2.5", CP 682-110/4", CP 680-M 2", CP 680-M 3", CP 680-M 4", CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6"

3. Through Penetrants — One metallic pipe or tubing to be installed within the firestop device. Pipe or tubing to be rigidly supported on both sides of floor assembly. The following types of pipe or tubing may be used:

A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.

C. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.

The firestop device, metallic penetrant and pipe covering shall be sized as follows:

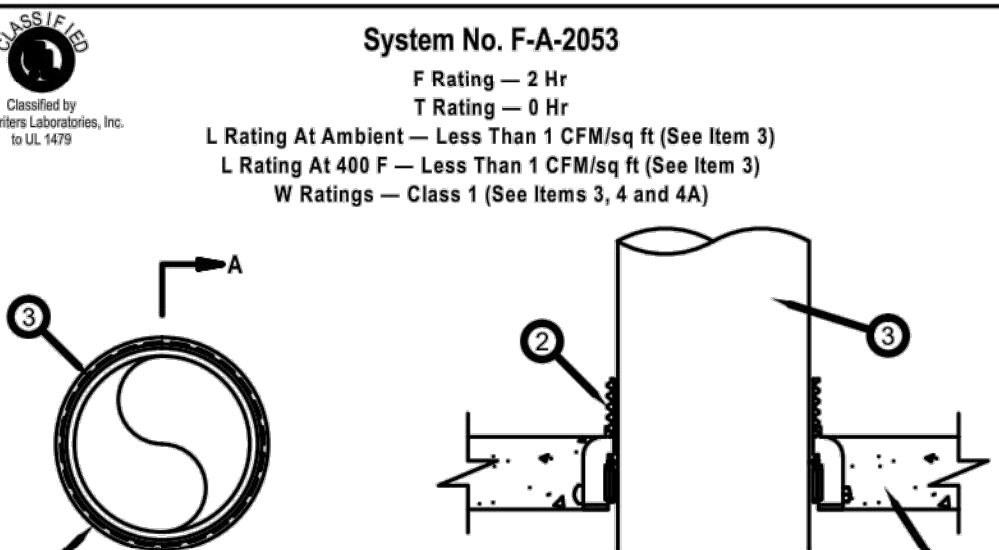
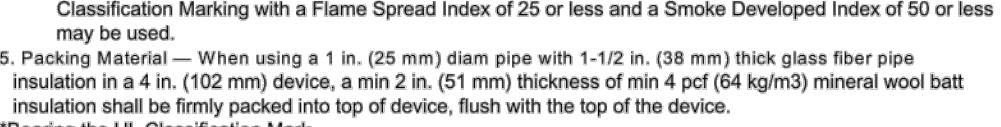
Nom Pipe Diam, in. (mm)	Nom Pipe Covering Thickness, in. (mm)	Firestop Device	T Rating, Hr
1/2 (13)	1 (25)	CP 680-75/2.5"N, CP 682-75/2.5" CP 680-M 2", CP 680-P 2"	3/4
1 (25)	1 (25)	CP 680-M 3", CP 680-P 3"	3/4
1 (25) (See Item 5)	1-1/2 (38)	CP 680-M 4", CP 680-P 4"	3/4
2 (51)	1 (25)	CP 680-110/4"N, CP 682-110/4" CP 680-M 4", CP 680-P 4"	1
2 (51)	2 (51)	CP 680-160/6"N CP 680-P 6"	3/4
4 (102)	1 (25)	CP 680-160/6"N CP 680-P 6"	3/4

4. Pipe Covering* — Nom 1, 1-1/2 and 2 in. (25, 38 and 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units, jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied SSL 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.

5. Packing Material — When using a 1 in. (25 mm) diam pipe with 1-1/2 in. (38 mm) thick glass fiber pipe insulation in a 4 in. (102 mm) device, a min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation shall be firmly packed into top of device, flush with the top of the device.

*Bearing the UL Classification Mark



System No. F-A-2053
F Rating — 2 Hr
T Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft (See Item 3)
L Rating At 400 F — Less Than 1 CFM/sq ft (See Item 3)
W Ratings — Class 1 (See Items 3, 4 and 4A)

1. Floor Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete.

1A. Floor Assembly - (Optional - Not Shown) — The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and in the manner specified in the individual D900 Series designs in the UL Fire Resistance Directory and as summarized below:

A. Concrete — Min 2-1/2 in (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete.

B. Steel Floor and Form Units* — Composite or non-composite max 3 in. (76 mm) deep galv steel fluted units as specified in the individual Floor-Ceiling Design.

2. Firestop Device* — Cast in place firestop device permanently embedded during concrete placement or grouted in concrete assembly in accordance with accompanying installation instructions. The 3, 4 and 6 in. devices may extend a max 2 in. (51 mm) above the top surface of the concrete. The max extension above the slab for the 2 and 2.5 in. devices is not restricted.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 680-75/2.5"N, CP 680-110/4"N, CP 680-160/6"N, CP 680-P 2", CP 680-P 3", CP 680-P 4", CP 680-P 6"

3. Through Penetrants — One nonmetallic pipe or conduit to be installed within the firestop system. Pipe or conduit to be rigidly supported on both sides of floor assembly. For W Rating with Water Barrier Module, pipe shall be installed from bottom of device. The following types and sizes of nonmetallic pipes or conduits may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 5 in. (127 mm) diam (or smaller) Schedule 40 solid or cellular 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 6 in. (152 mm) diam (or smaller) SDR11 or SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

C. Rigid Nonmetallic Conduit (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).

The firestop devices and nonmetallic penetrants shall be sized as follows:

Nom Pipe Diameter	Firestop Device
1/2 in. to 2 in. (19 mm to 51 mm)	CP 680-75/2.5"N CP 680-P 2"
3 in. (76 mm)	CP 680-P 3"
3 in. to 4 in. (76 mm to 102 mm)	CP 680-110/4"N CP 680-P 4"
6 in. (152 mm)	CP 680-160/6"N CP 680-P 6"

++ L Rating applies only to CP 680-P devices and only when the nom diam of pipe equals size of device (2 in. diam pipe in 2" device etc.). L Rating does not apply to CP 680N devices.

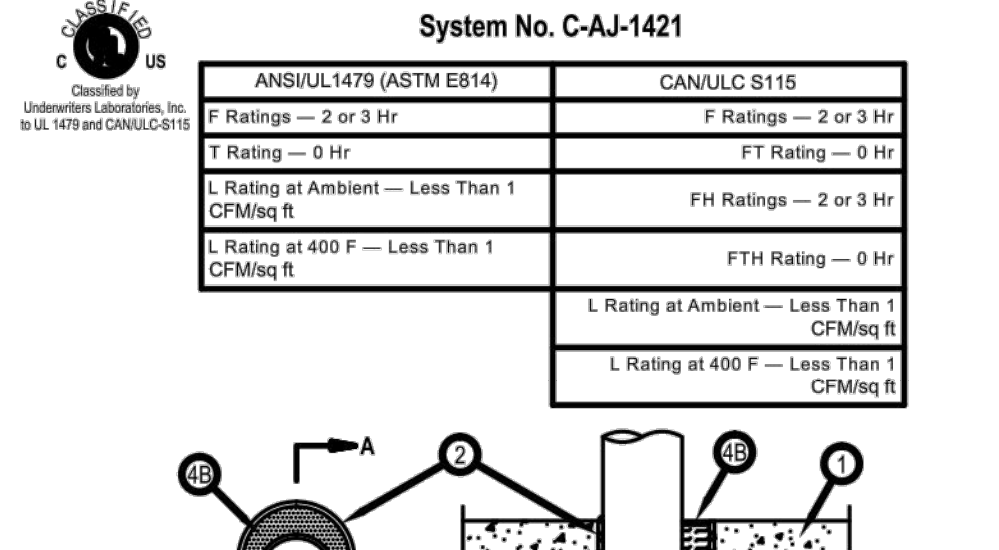
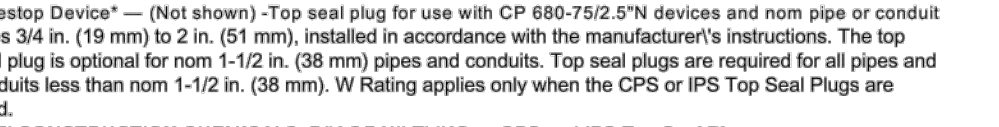
4. Firestop Device* — (Not shown) - Top seal plug for use with CP 680-75/2.5"N devices and nom pipe or conduit sizes 3/4 in. (19 mm) to 2 in. (51 mm), installed in accordance with the manufacturer's instructions. The top seal plug is optional for nom 1-1/2 in. (38 mm) pipes and conduits. Top seal plugs are required for all pipes and conduits less than nom 1-1/2 in. (38 mm). W Rating applies only when the CPSS or IPS Top Seal Plugs are used.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CPSS and IPS Top Seal Plugs

4A. Firestop Device* - Water Barrier Module* - (Optional, Not Shown) - Applied to nom 2", 3" and 4" water barrier modules used in combination with the CP 680-P 2", CP 680-P 3" and CP 680-P 4" devices, respectively, and supplied by device manufacturer. Module is threaded onto top of device. W Rating applies only when water barrier module is used.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — Water Barrier Module

*Bearing the UL Classification Mark



System No. C-AJ-1421
F Ratings — 2 or 3 Hr
T Rating — 0 Hr
L Rating at Ambient — Less Than 1 CFM/sq ft
L Rating at 400 F — Less Than 1 CFM/sq ft

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 6 in. (152 mm).

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

2. Metallic Sleeve — (Optional) Nom 6 in. (152 mm) diam (or smaller) Schedule 40 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces.

3. Through-Penetrant — One metallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe, tube or conduit and periphery of opening shall be min 0 in. (point contact) to max 5-3/8 in. (137 mm) at the point contact location on both sides of floor or wall assembly. The following types and sizes of metallic pipes or conduits may be used:

A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.

C. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.

D. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel conduit.

F. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT).

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

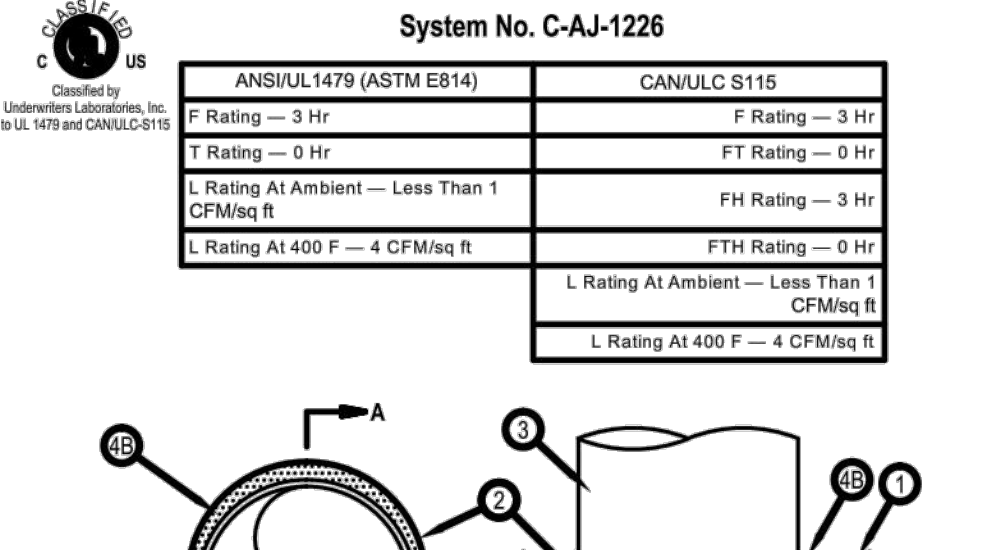
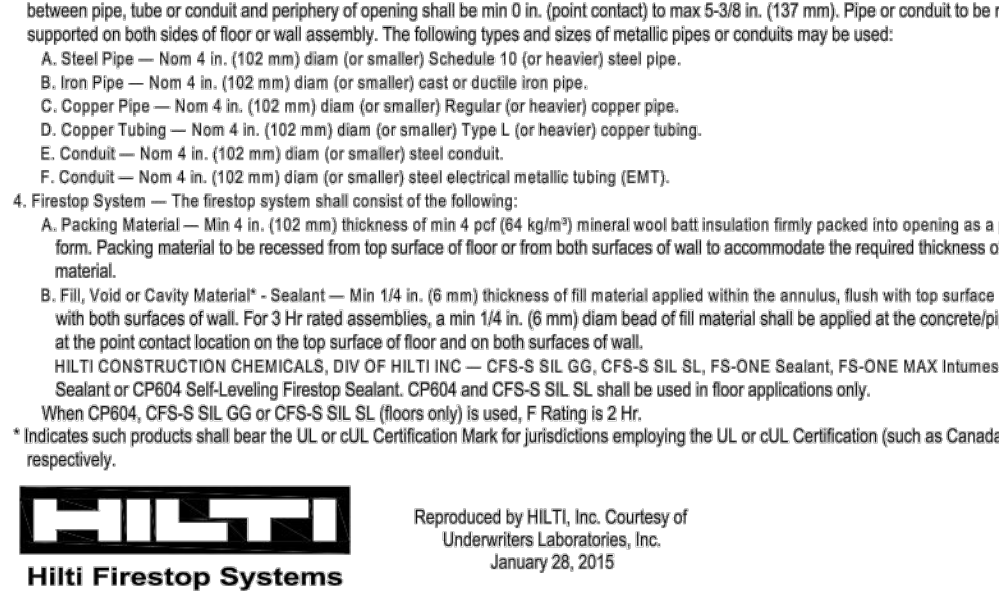
A. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall to accommodate the required thickness of fill material.

B. Fill Void or Cavity Material* - Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall. For 3 Hr rated assemblies, a min 1/4 in. (6 mm) diam bead of fill material shall be applied at the concrete/pipe interface at the point contact location on both sides of floor or wall assembly. The following types and sizes of metallic pipes or conduits may be used:

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-S SIL GG, CFS-S SIL SL, FS-ONE Sealant, FS-ONE MAX Intumescent Sealant or CP604 Self-Leveling Firestop Sealant. CP604 and CFS-S SIL SL shall be used in floor applications only.

When CP604, CFS-S SIL GG or CFS-S SIL SL (floors only) is used, F Rating is 2 Hr.

* 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-AJ-1226
F Rating — 3 Hr
T Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft
L Rating At 400 F — 4 CFM/sq ft

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 32 in. (813 mm).

2. Metallic Sleeve — (Optional) Nom 32 in. (813 mm) diam (or smaller) Schedule 40 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 5 in. (76 mm) above floor or beyond both surfaces of wall.

2A. Sheet Metal Sleeve — (Optional) Max 6 in. (152 mm) diam, min 26 ga. galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. (102 mm) below the bottom of the deck and a max of 1 in. (25 mm) above the top surface of the concrete floor.

2B. Sheet Metal Sleeve — (Optional) - Max 12 in. (305 mm) diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. (102 mm) below the bottom of the deck and a max of 1 in. (25 mm) above the top surface of the concrete floor.

3. Through-Penetrant — One metallic pipe, tube or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. (48 mm). Penetrant may be installed with continuous point contact. Penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic penetrants may be used:

A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.

C. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Conduit — Nom 6 in. (152 mm) diam (or smaller) steel conduit.

F. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT).

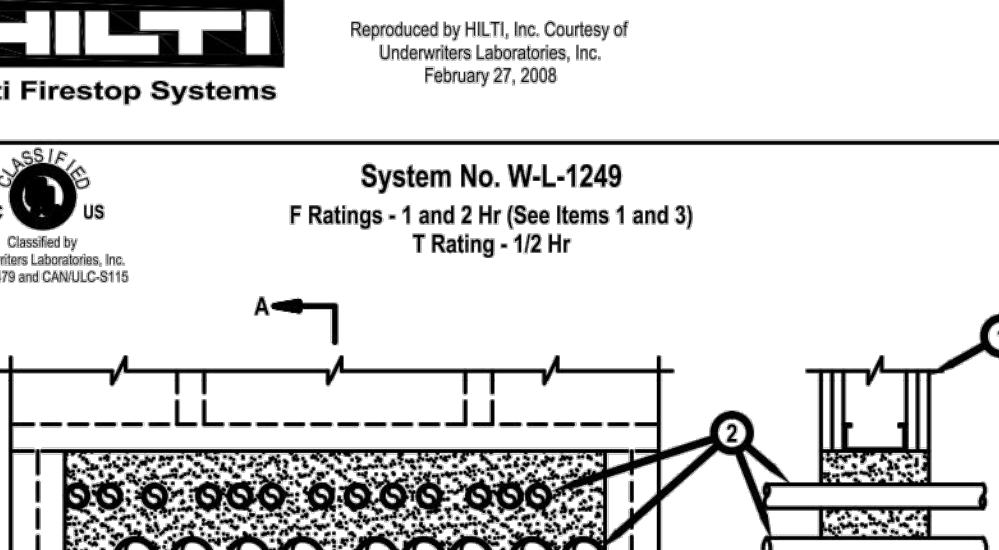
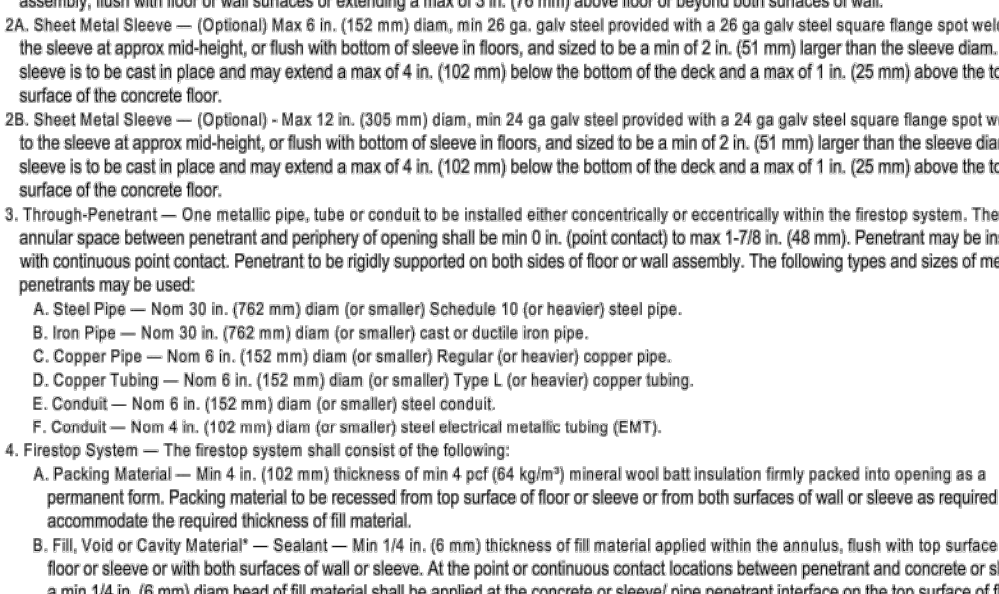
4. Firestop System — The firestop system shall consist of the following:

A. Packing Material — Min 4 in. (102 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 sleeve or from both surfaces of wall or sleeve as required to accommodate the required thickness of fill material.

B. Fill Void or Cavity Material* - Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with top surface of floor or sleeve or with both surfaces of wall or sleeve. At the point or continuous contact locations between penetrant and concrete or sleeve, a min 1/4 in. (6 mm) diam bead of fill material shall be applied at the concrete or sleeve/ pipe penetrant interface on the top surface of floor and 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.



System No. W-L-1249
F Ratings - 1 and 2 Hr (See Items 1 and 3)
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 described in the individual U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs Steel studs 3-1/2 in. deep, fabricated from 25 MSG galv steel, spaced max 24 in. OC.

B. Gypsum Boards* The gypsum board type, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max area of opening is 360 sq in. with max dimension of 30 in.

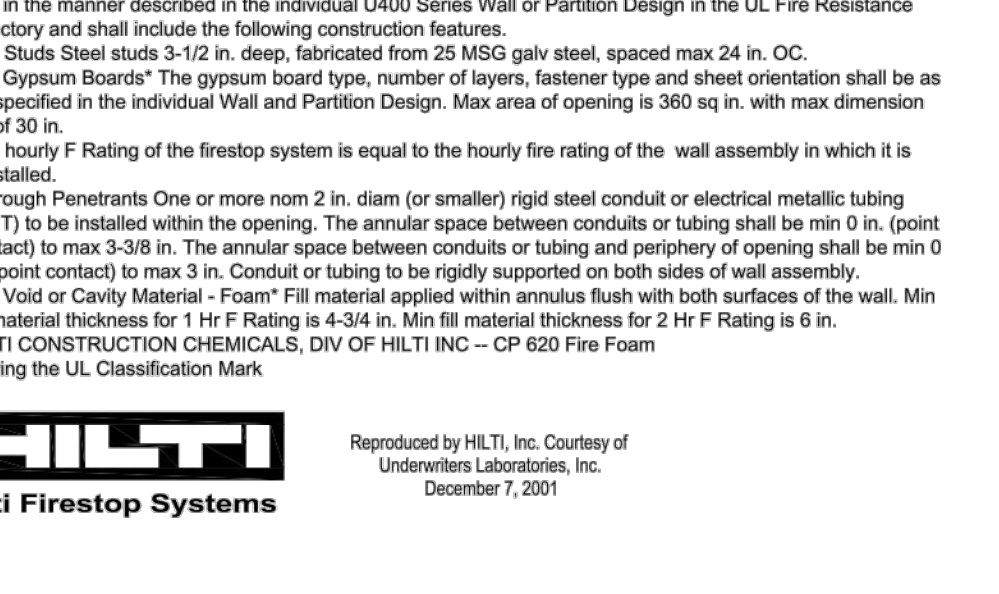
The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Through Penetrants One or more nom 2 in. diam (or smaller) rigid steel conduit or electrical metallic tubing (EMT) to be installed within the opening. The annular space between conduits or tubing shall be min 0 in. (point contact) to max 3-3/8 in. The annular space between conduits or tubing and periphery of opening shall be min 0 in. (point contact) to max 3 in. Conduit or tubing to be rigidly supported on both sides of wall assembly.

3. Fill Void or Cavity Material - Foam* Fill material applied within annulus flush with both surfaces of the wall. Min fill material thickness for 1 Hr F Rating is 4-3/4 in. Min fill material thickness for 2 Hr F Rating is 6 in.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 620 Fire Foam

*Bearing the UL Classification Mark



- Notes:
- Refer to section 15084 of the specifications. For Quality Control requirements, refer to the Quality Control portion of the specification.
 - Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
 - Minimum and maximum Width of Joints
 - Type and thickness of fire-rated construction. The minimum assembly rating of the firestop assembly shall meet or exceed the highest rating of the adjacent construction.
 - If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.
 - References:
 - 2013 Underwriter's Laboratories Fire Resistance Directory, Volume 2
 - NFPA 101 Life Safety Code
 - All governing local and regional building codes
 - Firestop System installation must meet requirements of ASTM E-814 (UL 1479) tested assemblies that provide a fire rating equal to that of construction being penetrated.
 - All rated through-penetrations shall be prominently labeled with the following information:
 - ATTENTION: Fire Rated Assembly
 - UL System #
 - Product(s) used
 - Hourly Rating (F-Rating)
 - Installation Date

PRELIMINARY
NOT FOR
CONSTRUCTION

KING+PARKS MULTI-FAMILY RESIDENCES

PROJECT SITE: NE Martin Luther King Jr. Boulevard & N Rosa Parks Way
OWNER: Portland Community Reinvestment Initiatives Inc. (PCRI)
6329 NE Martin Luther King Jr. Blvd. Portland, Oregon 97211

MERRYMAN BARNES ARCHITECTS 4713 N.BINNAME, SUITE 304 PORTLAND, OREGON 97217 p. 503.222.3753
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MECHANICAL DETAILS

M6.8

NOT FOR CONSTRUCTION

PRICING SET

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