Open Path Devices and Latex Intumescent Firestop Sealants

October 20th,2021

Presented by ;

Eric De Amorim

Canadian National Sales Manager at STI Firestop

FCIA
Firestop Contractors International Association

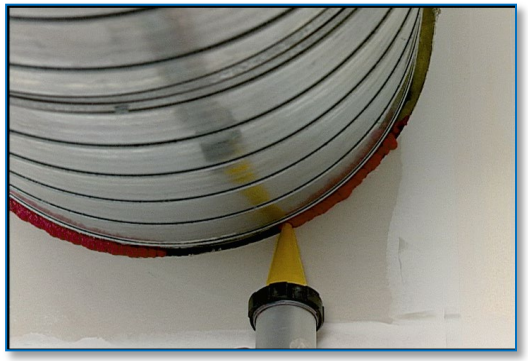
FCIA Virtual Fire-Resistance in Existing Buildings 'DIIM' Symposium Canada

STI
Specified Technologies Inc.

Latex Intumescent Firestop Sealants

What are they?

A specially formulated, independently tested, fire-resistive option for sealing penetrations and joints in fire separation walls and floors, to protect against the spread of fire and smoke.



They play an important part of a balanced fire & life safety plan

Latex Intumescent Firestop Sealants

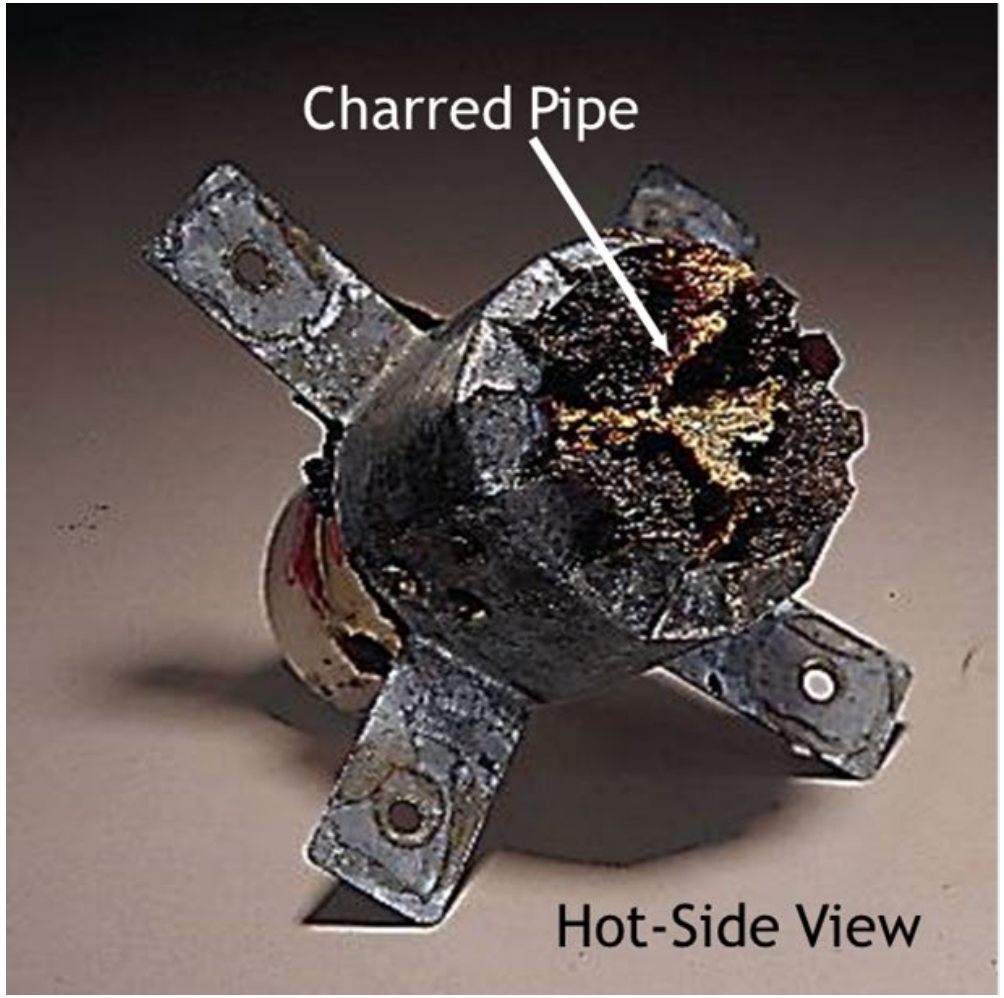
Are they necessary?

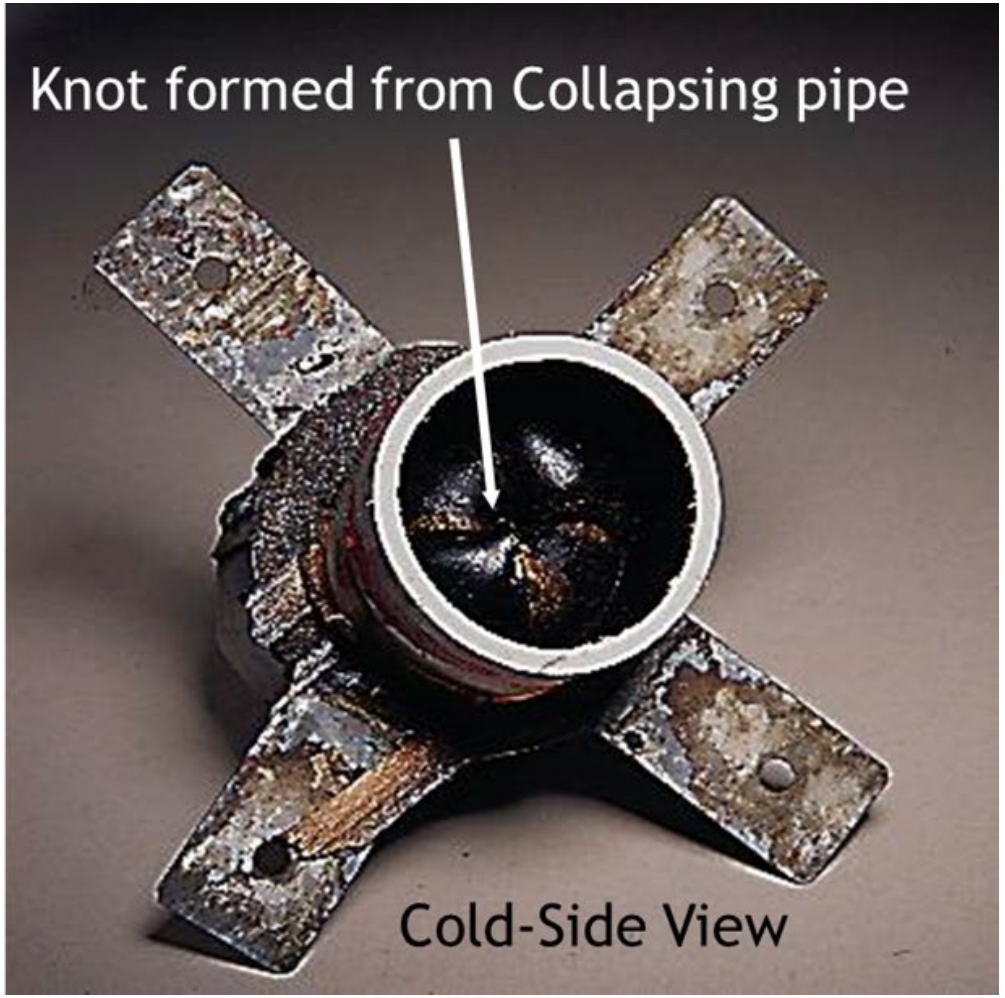
As combustible penetrants soften with heat, intumescent firestop materials will:

1. Collapse the penetrant as it burns
2. Stop fire from spreading
3. Form a tough smoke seal
4. Reduce the transmission of heat

Sometimes

Latex Intumescent Firestop Sealants – Expansion





Latex Intumescent Firestop Sealants – Testing

- It’s important to note that the product alone does not carry a rating.
- The rating is made up of a combination of materials and in Canada, those combined materials are tested to a specific set of requirements defined by CAN/ULC-S115.

The testing standard was developed to ensure that all manufacturers are testing their sealant applications the same way.

Latex Intumescent Firestop Sealants – Testing

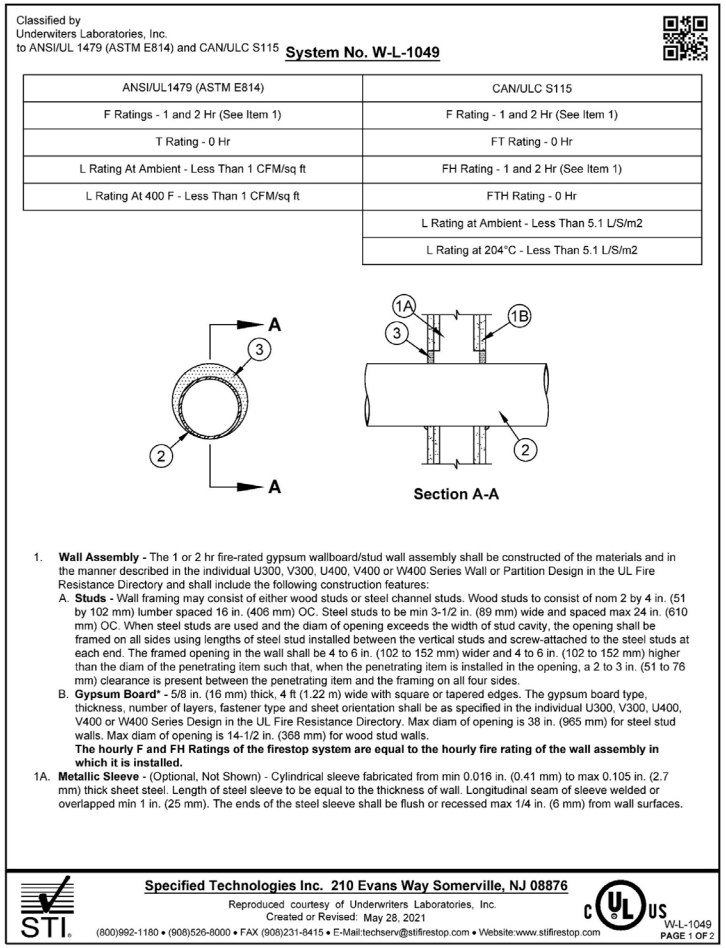
These tested assemblies are intended to provide;

For the Authority Having Jurisdiction;

1. Evidence of compliance
2. Documents by which to inspect

For the installer;

1. Evidence of compliance
2. A set of building instructions



Classified by
Underwriters Laboratories, Inc.
to ANSI/UL 1479 (ASTM E814) and CAN/ULC S115 **System No. W-L-1049**

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Rating - 1 and 2 Hr (See Item 1)
T Rating - 0 Hr	FT Rating - 0 Hr
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Rating - 1 and 2 Hr (See Item 1)
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 0 Hr
	L Rating at Ambient - Less Than 5.1 L/S/m2
	L Rating at 204°C - Less Than 5.1 L/S/m2

Section A-A

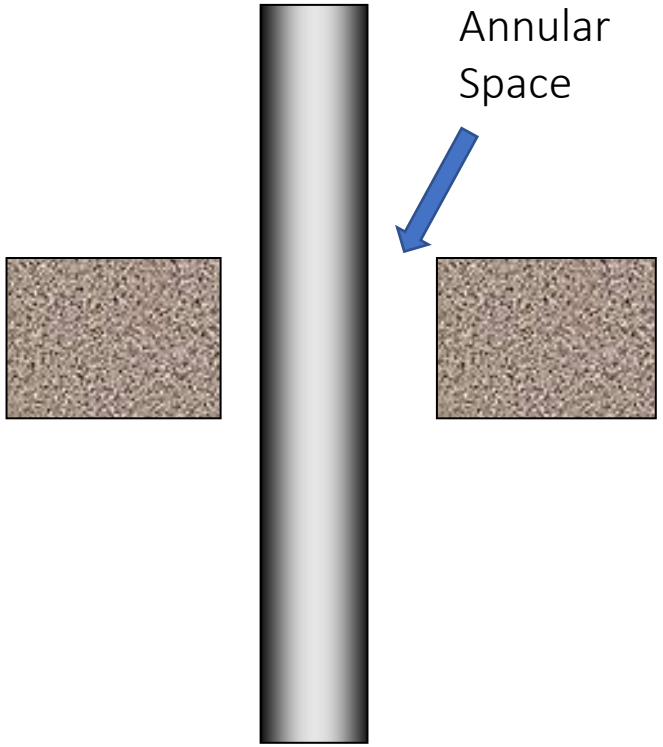
1. **Wall Assembly -** The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, V300, U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction 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. (51 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 mm) OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
   B. **Gypsum Board* -** 5/8 in. (16 mm) thick, 4 ft (1.22 m) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, V300, U400, V400 or W400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 38 in. (965 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.
   The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
1A. **Metallic Sleeve** - (Optional, Not Shown) - Cylindrical sleeve fabricated from min 0.016 in. (0.41 mm) to max 0.105 in. (2.7 mm) thick sheet steel. Length of steel sleeve to be equal to the thickness of wall. Longitudinal seam of sleeve welded or overlapped min 1 in. (25 mm). The ends of the steel sleeve shall be flush or recessed max 1/4 in. (6 mm) from wall surfaces.

Specified Technologies Inc. 210 Evans Way Somerville, NJ 08876
Reproduced courtesy of Underwriters Laboratories, Inc.
Created or Revised: May 28, 2021
(800)992-1180 • (908)526-8000 • FAX (908)231-8415 • E-Mail:techserv@stifirestop.com • Website:www.stifirestop.com
W-L-1049
PAGE 1 OF 2

Latex Intumescent Firestop Sealants – Annular Space

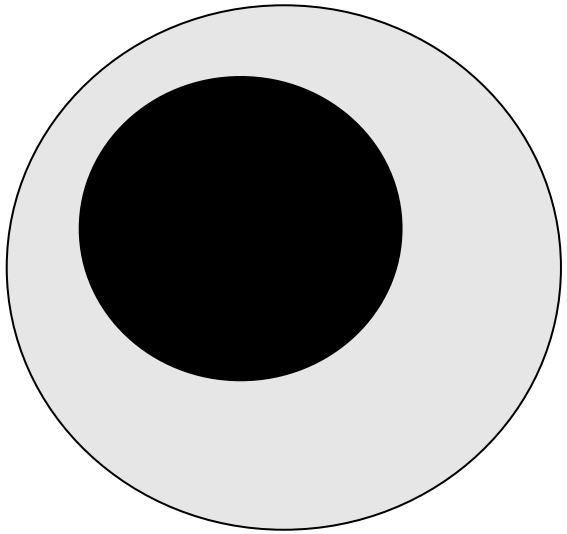
Determining Annular Space

The distance between the outside of the penetrant and the periphery of the opening.

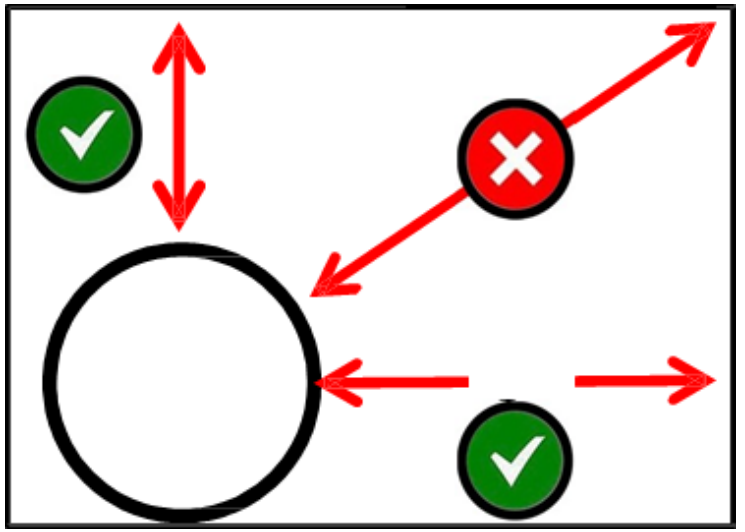


Latex Intumescent Firestop Sealants – Annular Space

Determining Annular Space



For round openings, measure the widest and narrowest distance between the penetrant and the edge of the opening.

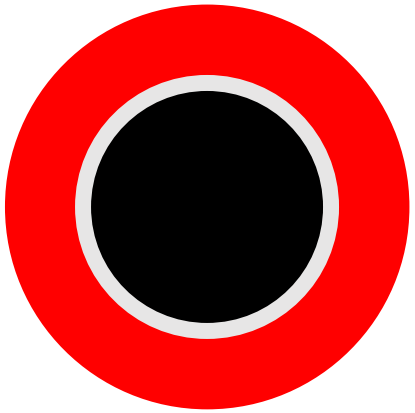


When you have a square or rectangular openings, measure only to points perpendicular to the penetrant, NOT to diagonal points.

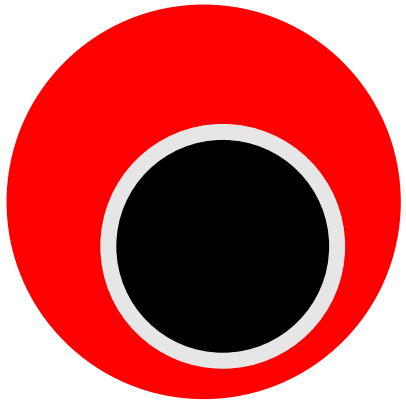
Latex Intumescent Firestop Sealants – Annular Space

Additional considerations

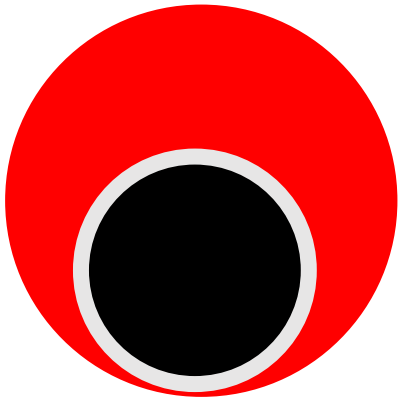
Position of the penetrant inside the opening. * In some cases, the penetrant may even touch the edge of the opening.



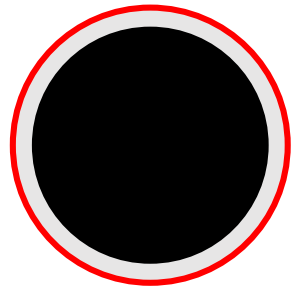
1. Centered



2. Eccentric

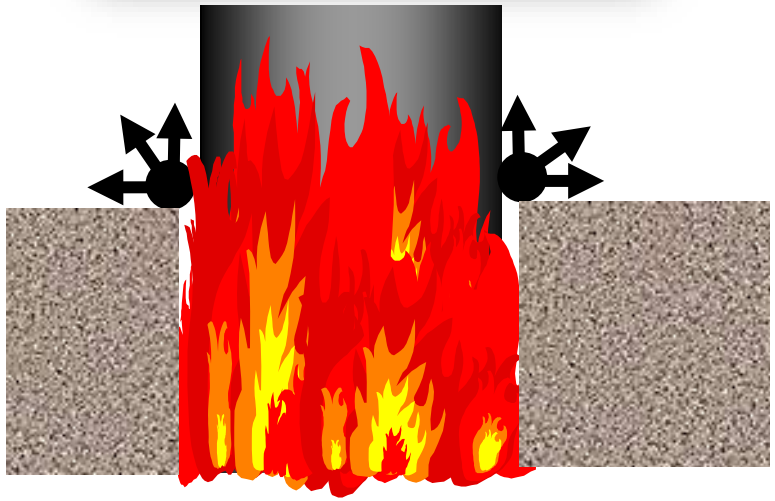


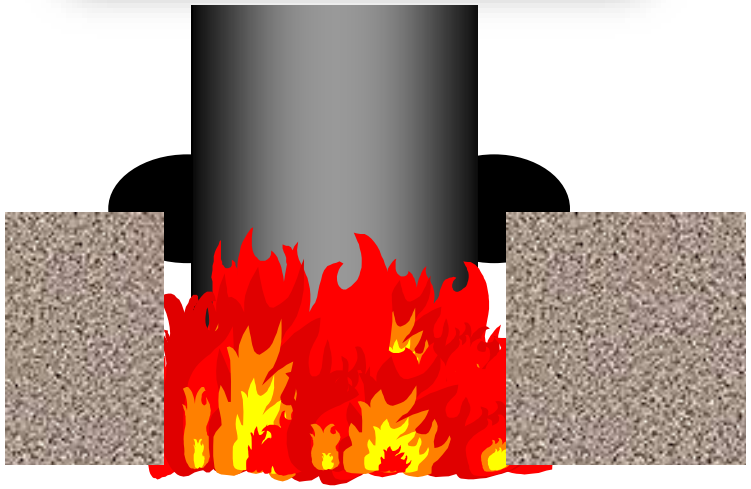
3. Point Contact



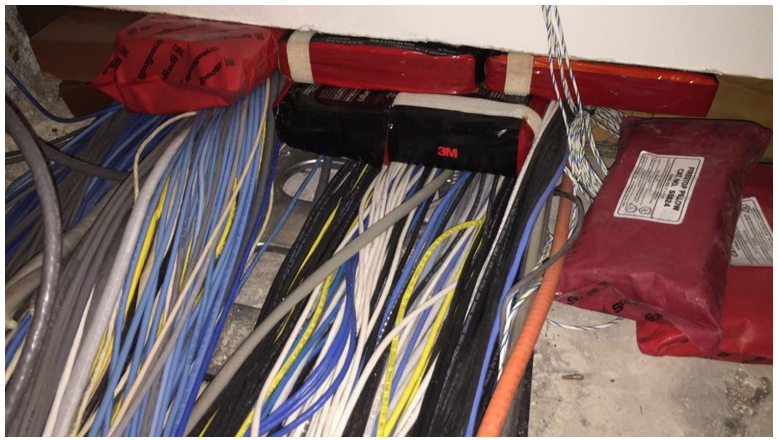
4. Continuous Point Contact

Latex Intumescent Firestop Sealants – Tooling





Latex Intumescent Firestop Sealants – Repair



Latex Intumescent Firestop Sealants – A / D

Advantages & Disadvantages

A = They're the most economical solution for addressing combustible applications.

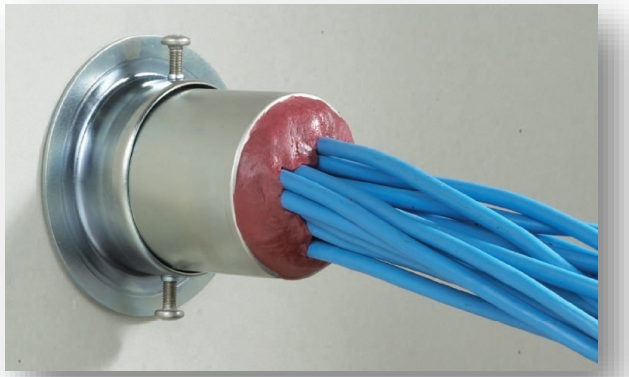
D = They require consistent QA/QC and, destructive inspections are imperative.

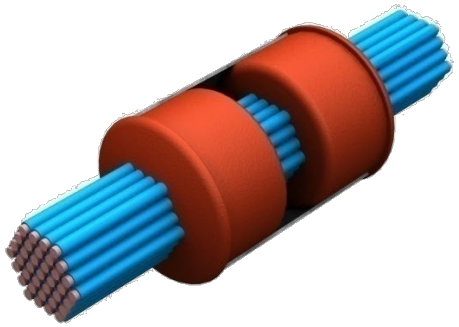
Open Path Devices – What are they?

Open Path Devices – Common Solutions

Common Firestop Solutions for Data Communication Applications

1. Sealant
2. Putty
3. Pillows
4. Firestop Plugs



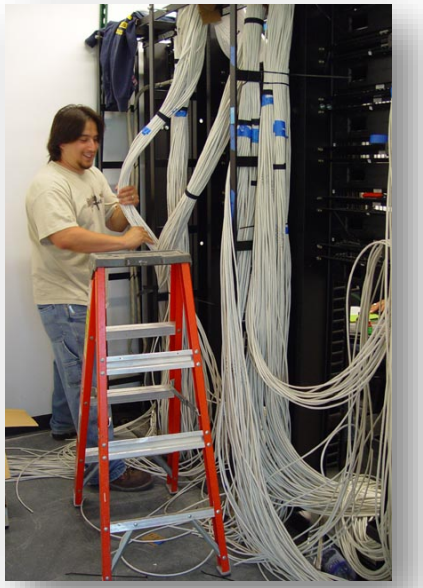


Open Path Devices – Moves, Adds & Changes

The Cause; Moves, Adds & Changes (MAC work)

This is a term used for describing “triggers” in the data communication world.

1. This work is commonly performed during tenant fit out, IT Work and technology upgrades.
2. The problem is that most of the MAC work is done outside the scope of a building permit



Open Path Devices – Consequences of MAC Work

When Firestop Is Removed, we can expect 1 of 8 possible outcomes;

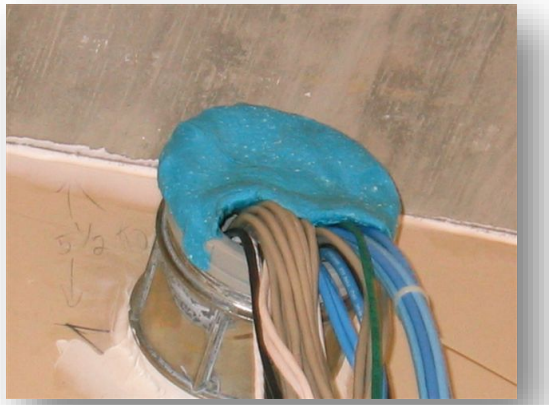
1. Replaced properly
2. Not replaced at all
3. Replaced, but arranged improperly
4. Replaced, but with an inadequate dose
5. Replaced, but multiple products
6. Resealed, but not with firestop
7. Replaced, but cable load increased and exceeds maximum load permissible by ULC system
8. Some combination of the above

NON-COMPLIANT

Open Path Devices – Consequences of MAC Work

Not replaced at all

Removed & never re-installed



Arranged Improperly

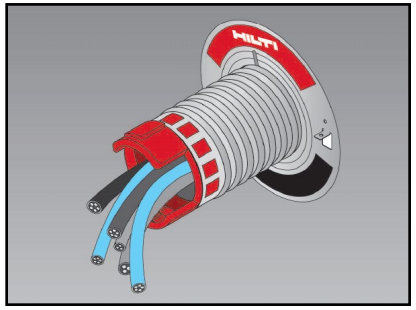
Inadequate dose, and un-tooled material

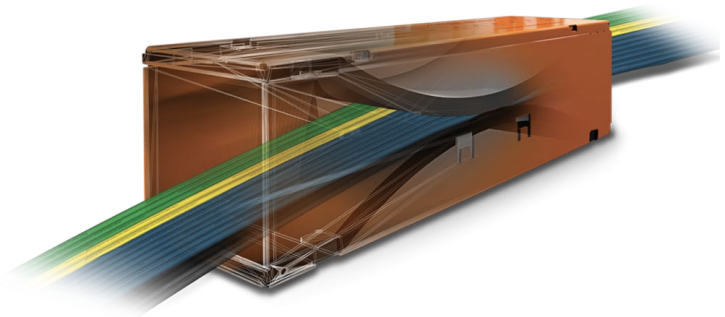
Multiple products / Excessive cable load

Resealed with combustible foam, not firestop

Completely missing

Open Path Devices – New & Existing Construction Solutions

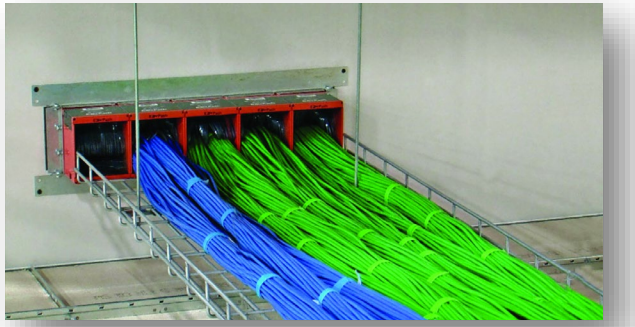


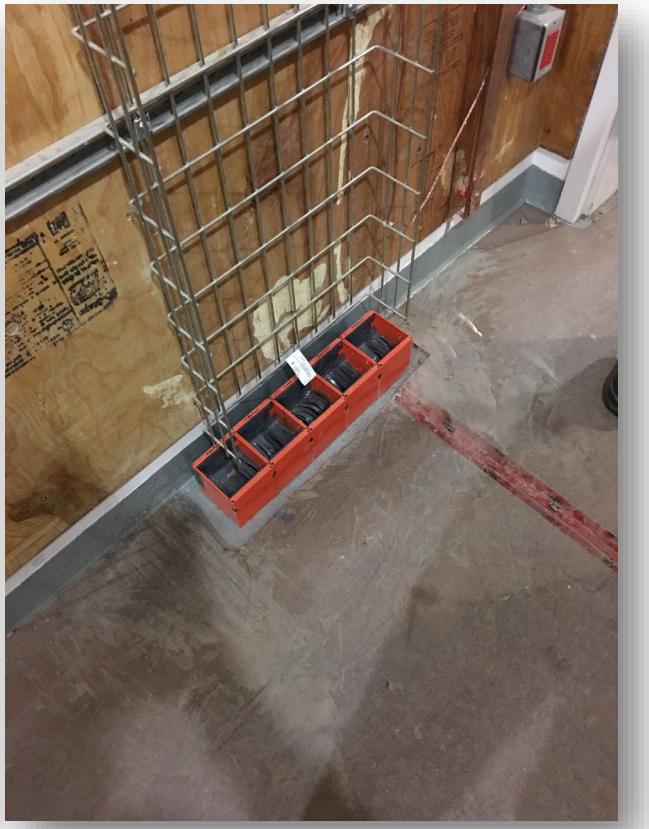


Fire-Rated Pathway Devices

Smoke and Acoustical Pathway

Open Path Devices – New & Existing Construction Solutions





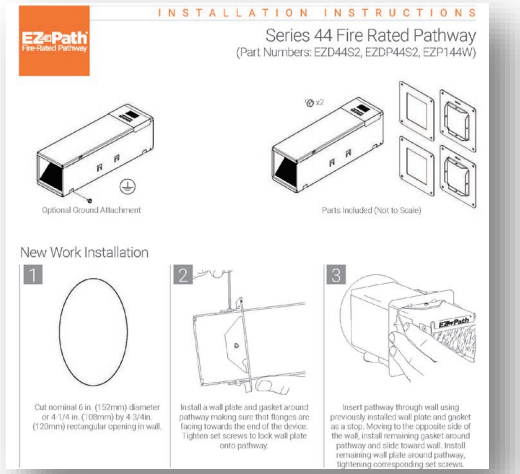
Open Path Devices – New & Existing Construction Solutions

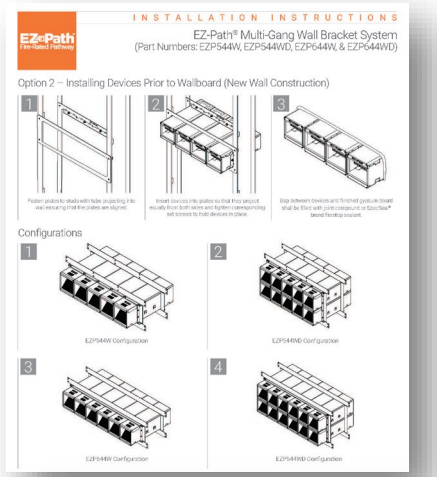
Open Path Devices – New & Existing Construction Solutions

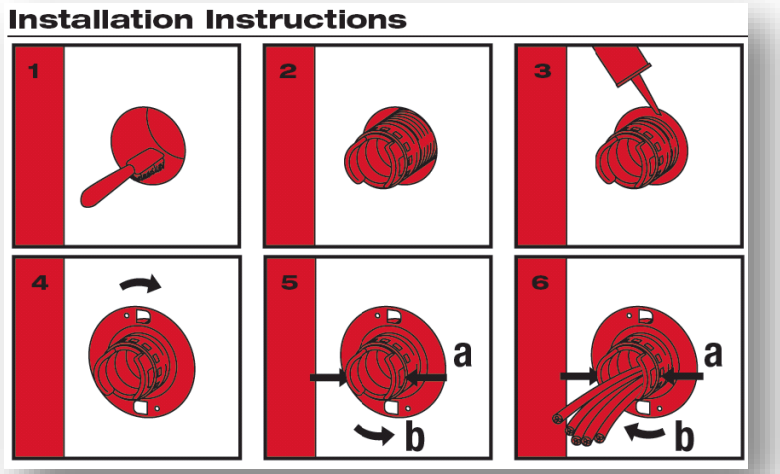
Segregate your cables…

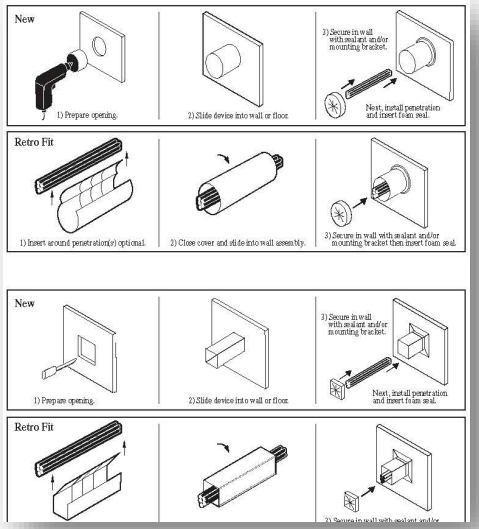
… or foster future compliance

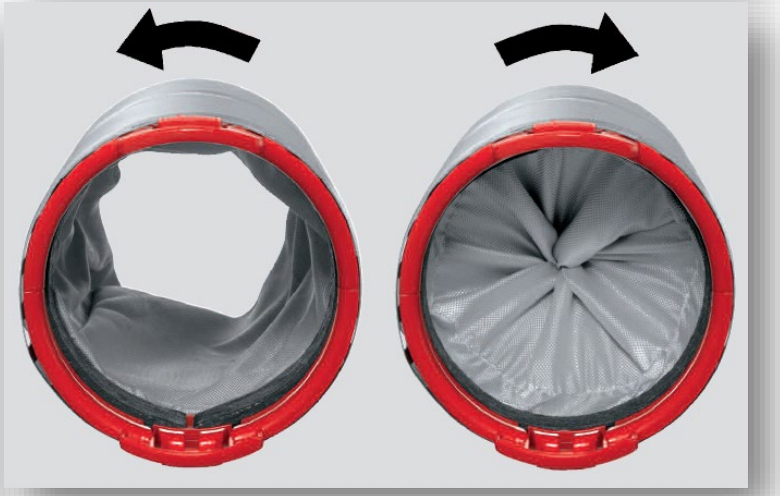
Open Path Devices – Installation







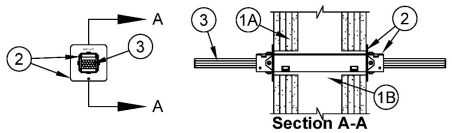




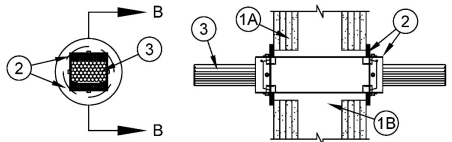
Open Path Devices – Documentation

Classified by
Underwriters Laboratories, Inc.
to ANSI/UL 1479 (ASTM E814) and CAN/ULC S115 **System No. W-L-3377**

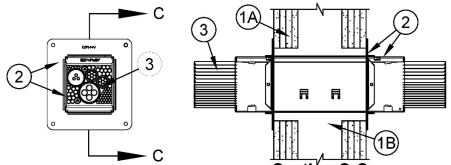
ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1, 2, 3 and 4 Hr (See Items 1 and 3)	F Ratings - 1, 2, 3 and 4 Hr (See Items 1 and 3)
T Rating - 3/4, 1, 1-1/2 and 2 Hr (See Item 3)	FT Rating - 3/4, 1, 1-1/2 and 2 Hr (See Item 3)
L Rating At Ambient - Less than 1 to 7 CFM/Device Module (See Item 2)	FH Ratings - 1, 2, 3 and 4 Hr (See Items 1 and 3)
L Rating At Ambient - Less than 1 to 7 CFM/Device Module (See Item 2)	FTH Rating - 3/4, 1, 1-1/2 and 2 Hr (See Item 3)
	L Rating At Ambient - Less than 1 to 7 CFM/Device Module (See Item 2)
	L Rating at 400 F - Less than 1 to 3 CFM/Device Module (See Item 2)



Section A-A



Section B-B



Section C-C

1. **Wall Assembly -** The 1, 2, 3 or 4 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300, U400, V400 or W400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs -** Wall framing shall 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 max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board* -** Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. See Table for opening sizes.

   The hourly F and FH Ratings are dependent upon the hourly rating of the wall in which it is installed.
2. **Firestop Device* -** Series 22 EZ Path device modules consist of a 1.4 by 1.4 by 10-1/2 in. (36 by 36 by 267 mm) long galv steel tube with an intumescent material lining. Series 33 EZ Path device modules consist of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Series 44+ EZ Path device modules consist of a 4 by 4-5/8 by 14 in. (102 by 118 by 356 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. Firestop device modules secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel screws provided with device. Firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly. The annular space between the device and opening shall be min 0 in. (point contact) to max 1/8 in. (3 mm) for Series 22 device, max 1/2 in. (13 mm) for Series 33 device and max 1/4 in. (6 mm) for Series 44 device. The opening size and L Ratings for each device vary according to whether device module is blank (no cables) or loaded (with cables) and which cable type and size is used, as tabulated below:

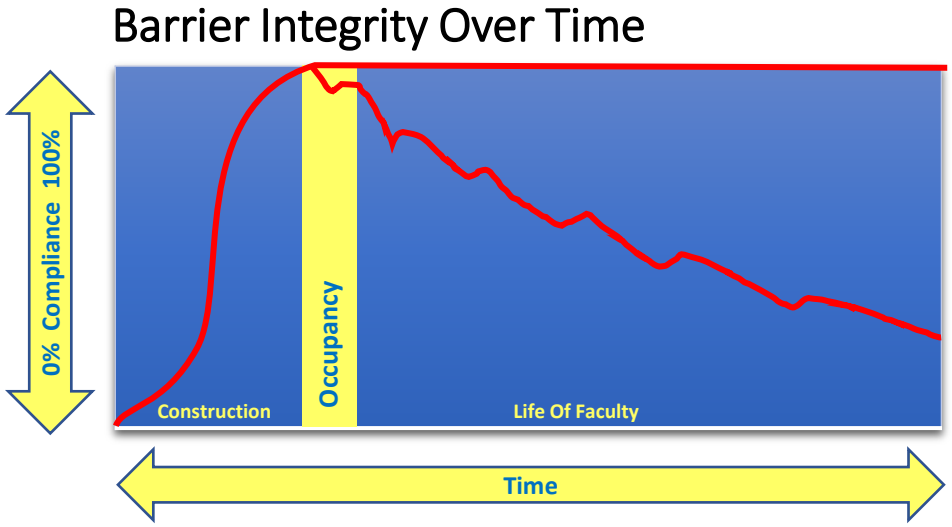
SPECIFIED TECHNOLOGIES INC - EZ PATH Series 22, 33 or 44+ Fire Rated Pathway

Device	Max Cable Fill	Cable Type	L-Rating (CFM)		Opening Size Diam or Dimensions, in. (mm)
			Ambient	400° F	
Series 22	0%	-	1.4	1.4	2 (51) or 1-3/4 x 1-3/4 (44 x 44)
Series 22	1-25%	3A	Less Than 1	Less Than 1	2 (51) or 1-3/4 x 1-3/4 (44 x 44)
Series 22	26-50%	3A	Less Than 1	Less Than 1	2 (51) or 1-3/4 x 1-3/4 (44 x 44)
Series 22	51-75%	3A	Less Than 1	Less Than 1	2 (51) or 1-3/4 x 1-3/4 (44 x 44)
Series 22	76-100%	3A	Less Than 1	Less Than 1	2 (51) or 1-3/4 x 1-3/4 (44 x 44)
Series 22	100%	3F	Less Than 1	Less Than 1	2 (51) or 1-3/4 x 1-3/4 (44 x 44)
Series 33	0%	-	Less Than 1	Less Than 1	4 (102) or 3-1/4 x 3-1/4 (82 x 82)
Series 33	100%	3A	4	3	4 (102) or 3-1/4 x 3-1/4 (82 x 82)
Series 33	100%	3F	1.3	Less Than 1	4 (102) or 3-1/4 x 3-1/4 (82 x 82)
Series 33	100%	3G, 3H	7	2	4 (102) or 3-1/4 x 3-1/4 (82 x 82)
Series 33	100%	3I	1.8	1.8	4 (102) or 3-1/4 x 3-1/4 (82 x 82)
Series 44+	0%	-	Less Than 1	Less Than 1	6 (152) or 4-1/8 x 4-3/4 (120 x 120)
Series 44+	1-25%	3A-3I	1.5	1.5	6 (152) or 4-1/8 x 4-3/4 (120 x 120)
Series 44+	26-50%	3A-3I	2.3	2.3	6 (152) or 4-1/8 x 4-3/4 (120 x 120)
Series 44+	51-75%	3A-3I	2.3	2.3	6 (152) or 4-1/8 x 4-3/4 (120 x 120)
Series 44+	76%-100%	3A-3I	2.3	2.3	6 (152) or 4-1/8 x 4-3/4 (120 x 120)

Open Path Devices – Advantages / Disadvantages

Advantages & Disadvantages

D = Higher front-end cost, however, devices pay for themselves over time
A = In some cases, the front-end cost is your total cost.
A= QA/QC, destructive inspections are generally unnecessary
A = They facilitate MAC work and safely “future” proof the building
A = They greatly reduce oversight and installer mistakes
A= 100% fill capacity permits them to occupy less real estate on walls and floors
A = Certain devices are 100% maintenance free as per UL Evaluation Report



Fin