HEBERT CONSTRUCTION

9 Gould Road
Lewiston, ME 04240
Ph : (207) 783-2091

Submittal

Job: 150091
Portland Gastro
Portland Gastro
1200 Congress Street
Portland, ME

Spec Section No: 078413
Submittal No: 1
Revision No: 0
Sent Date: 5/12/2016

Spec Section Title:

Submittal Title: Penetration Firestopping

REVIEWED & APPROVED
FOR
Portland Gastro
078413.01 Plumbing &
HVAC Pipe Fire Stopping

Contractor:
Hebert Construction LLC

Contractor's Stamp

SUBMITTAL _____
SHIPMENT _____
FABRICATION _____
APPROVED AS NOTED Reviewed
REVISED & RESUBMIT _____
NOT APPROVED _____
DATE 5/12/16 BY TRH
HEBERT CONSTRUCTION LLC

PDT Architects PA
Ann Fisher

Architect's Stamp

Engineer's Stamp

Submittal Transmittal

Date:	June 7, 2016
To/Company:	Dawn M. Clark, Assistant Project Mgr. Hebert Construction 2 Gould Road Saco, ME 04240
Project:	Portland Gastroenterology Center
Reviewed By:	Ann M. Fontaine-Fisher AIA, LEED AP BD+C
Submittal:	078413.01 Plumbing & HVAC Pipe Fire Stopping

SUBMITTAL REVIEW COMMENTS:

1. See attached PDT review comments.

PDT SUBMITTAL REVIEW ACTION:

- ❑ REVIEWED
- ❑ FURNISH AS CORRECTED
- ❑ REVISE AND RESUBMIT
- ❑ REJECTED
- ❑ SUBMIT SPECIFIED ITEM

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. Review of a specific item shall not include review of an assembly of which the item is a component. The contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all other trades and performing all Work in a safe and satisfactory manner.

NOTE:

If you feel that a Change in Contract Sum or Contract Time is required, please submit a Change Order Proposal prior to proceeding with this Work.

CC: Owner, File

PDT
ARCHITECTS

SUBMITTAL REVIEW NOTES

DATE:	June 7, 2016
PROJECT:	Portland Gastroenterology Center - #14054
REVIEWED BY:	Matt Pitzer
SPECIFICATION:	Fire Stopping
SUBMITTAL:	Submittal 1/ Revision 0

COMMENTS:

1.

ACTION:

- ❑ REVIEWED
- ❑ FURNISH AS CORRECTED
- ❑ REVISE AND RESUBMIT
- ❑ REJECTED
- ❑ SUBMIT SPECIFIED ITEM

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. Review of a specific item shall not include review of an assembly of which the item is a component. The contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all other trades and performing all Work in a safe and satisfactory manner.

49 DARTMOUTH STREET
PORTLAND, MAINE 04101
207-775-1059
207-775-2694 FAX
www.pdtarchs.com

SUBMITTAL **SUBM-21**
PORTLAND GASTRO 3RD & 4TH FLR
PORTLAND, ME.

#16133

GENERAL CONTRACTOR ..... HEBERT CONSTRUCTION
LEWISTON, ME.

SUBMITTED BY ..... JOHNSON & JORDAN
SCARBOROUGH, ME.
(207) 883-8345

SUBCONTRACTOR ..... N/A

SUPPLIER ..... F.W.WEBB CO.
SOUTH PORTLAND, ME.

SPECIFICATION SECTION 078413

PARAGRAPH ..... 1.1 – 3.5

ITEM ..... PLUMBING & HVAC PIPE
FIRESTOPPING

JOHNSON&JORDAN, INC.

18 Mussey Rd. Scarborough, ME
Approved_____ Approved as Noted_____
Re-Submit_____ Reviewed_____
Subject to Architects Approval _____
Date_____ By_____

Firestop Submittal Package

Northeast Firestopping Solutions

Project: J & J Portland Gastroenterology
161 Marginal Way
Portland, ME 04101

Date: May 12, 2016

Submitted by: Charles A. Fogg, DRI
Business Director
19 Industrial Park Road
Saco, ME 04072

This submittal is auto-generated based on user-selected inputs.
Therefore, Hilti makes no representation as to the suitability of these systems for their intended use.

Hilti. Outperform. Outlast.

Hilti Firestop
Saving lives
through innovation
and education

Table Of Contents

UL Listings

C-AJ-2168 (US Only)..... 1
C-AJ-2218 (US Only)..... 2
C-AJ-2335 (US Only)..... 3
C-AJ-2419 (US Only)..... 4
C-AJ-2647 (US Only)..... 5
C-AJ-5091..... 7

CP 648-E (Endless)

Product Data Sheet for CP 648-E Firestop Wrap Strip..... 9
UL Certificate of Compliance for CP 648-E and CP 648-S Firestop Wrap Strip..... 10
LEED Information for CP 648-S and CP 648-E Firestop Wrap Strip..... 11

FS-ONE MAX

Product Data Sheet for FS-ONE MAX Intumescent Firestop Sealant..... 12
Buy American Certification for FS-ONE MAX Intumescent Firestop Sealant..... 13
LEED Information for FS-ONE MAX Intumescent Firestop Sealant..... 14

Mineral wool

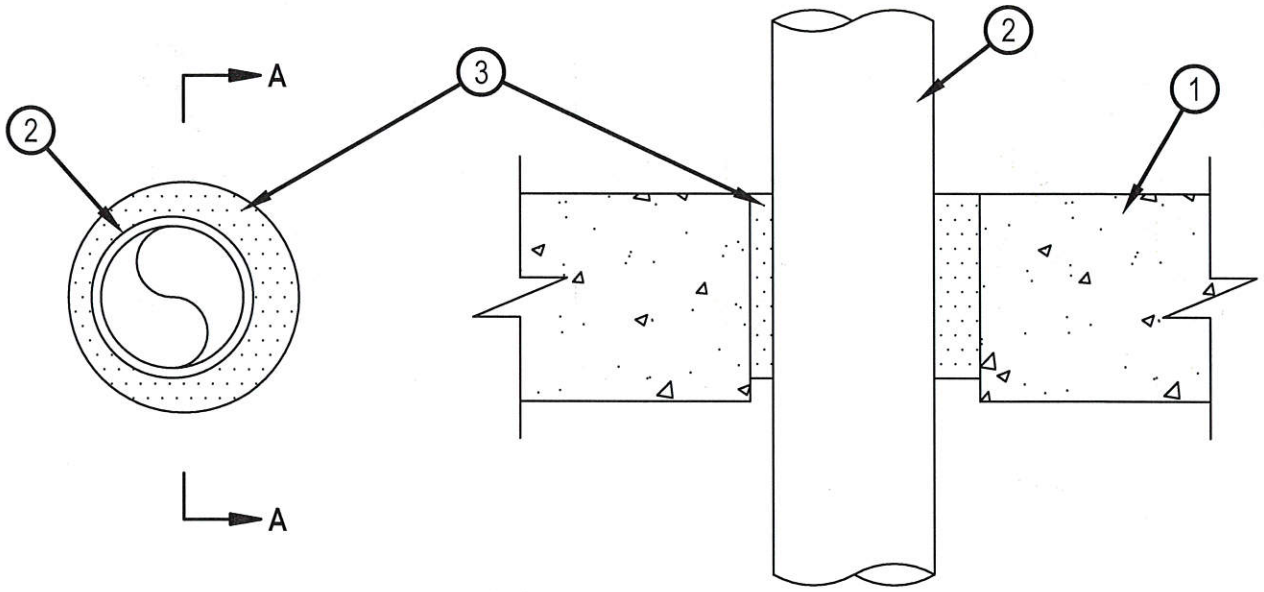
UL Certificate of Compliance for Mineral Wool..... 1
LEED Information for Mineral Wool..... 16

CAJ 2168

Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. C-AJ-2168

F Rating -- 2 and 3 Hr (See Item 2)
T Rating -- 0 Hr



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/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 5 in. (127 mm).

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

2. Nonmetallic Pipe — Nom 3 in. (76 mm) diam (or smaller) Schedule 40 polyvinyl chloride (PVC) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. One pipe to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 1/2 in. (13 mm) to a max 1 in. (25 mm). Pipe to be rigidly supported on both sides of floor or wall assembly.

When nom pipe diam exceeds 2 in. (51 mm), the F rating of the firestop system is 2 hr when the FS-ONE MAX sealant (Item 3) is used, and 3 hr when the FS-ONE sealant (Item 3) is used.

3. Fill, Void or Cavity Material* — Sealant — Min 4 in. (102 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.

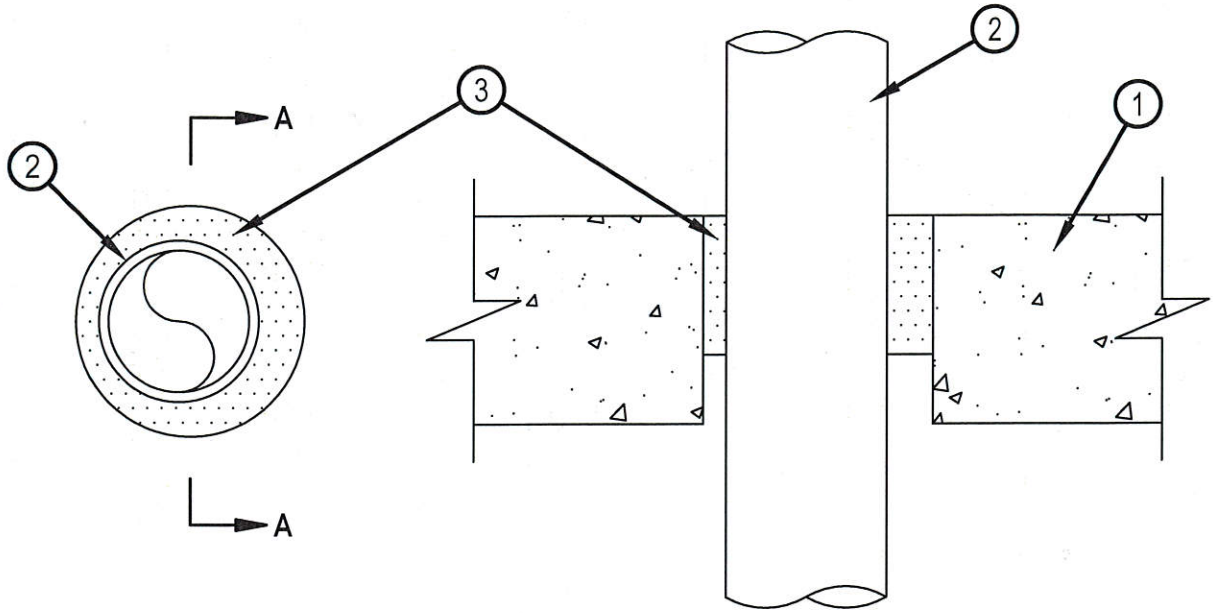
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

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

Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. C-AJ-2218

F Rating -- 2 Hr
T Rating -- 0 Hr



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/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks+. Max diameter of opening is 5 in. (127 mm).

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

2. Through Penetrants — One nonmetallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 1/2 in. (13 mm) to a max 1 in. (25 mm). The pipe or conduit to be rigidly supported on both sides of floor or wall. The following types and sizes of pipes may be used:

   A. Polyvinyl Chloride (PVC) Pipe — Nom 3 in. (76 mm) diameter (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 3 in. (76 mm) diameter (or smaller) SDR 17 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

3. Fill, Void or Cavity Material+ — Sealant — Min 3-1/2 in. (89 mm) of FS-ONE MAX Intumescent Sealant or min 3 in. (76 mm) thickness of FS-ONE Sealant applied within the annulus, flush with top surface of floor or with 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.

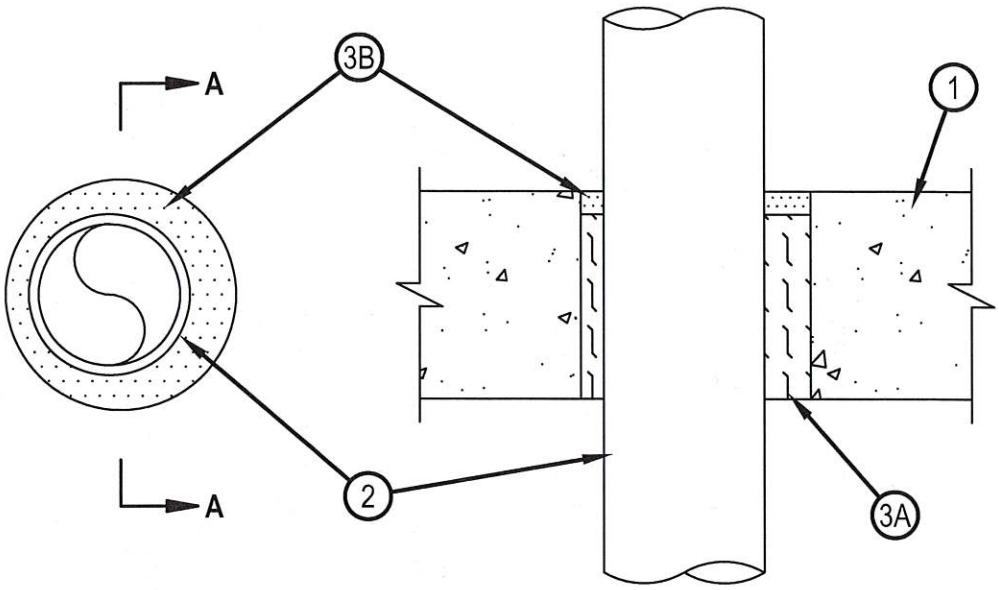
CLASSIFIED

Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. C-AJ-2335

F Rating -- 3 Hr
T Rating -- 2-3/4 and 3 Hr (See Item 3)

CAJ 2335



SECTION A-A

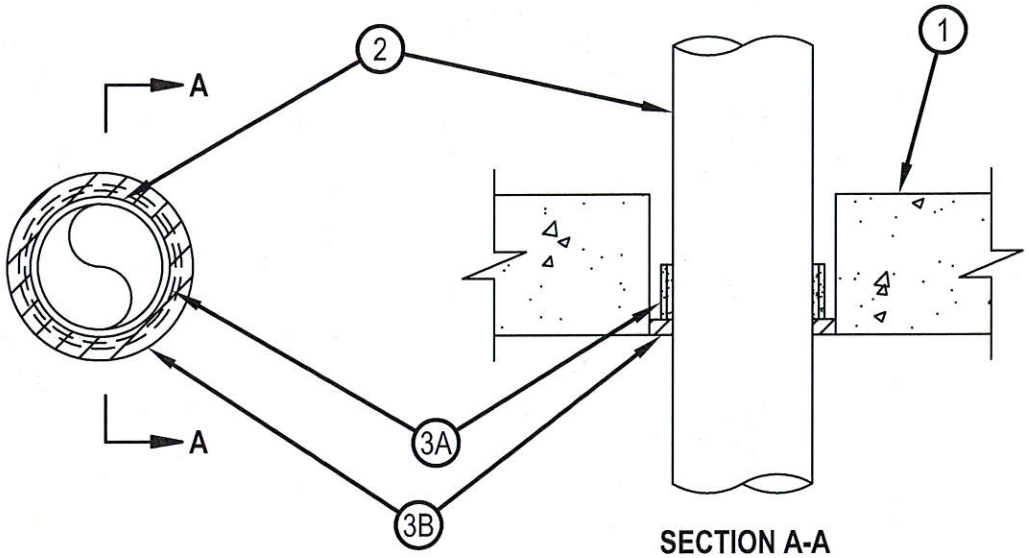
1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete or 5 in. thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diameter of opening is 5 in. (127 mm).
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufactures.
2. Through Penetrants — One nonmetallic pipe or conduit to be installed concentrically or eccentrically within the firestop system. Annular space between pipe or conduit and edge of opening to be min 1/4 in. (6 mm) and max 1-1/4 in. (32 mm). Pipe or conduit to be rigidly supported on both sides of floor-ceiling assembly. The following types and sizes of nonmetallic pipes or conduit may be used:
   A. Polyvinyl Chloride (PVC) Pipe — Nom 3 in. (76 mm) diam (or smaller) Schedule 40 solid or cellular core PVC for use in closed (process or supply) piping systems.
   B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 3 in. (76 mm) diam (or smaller) SDR13.5 CPVC for use in closed (process or supply) piping systems.
3. 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 both surfaces of wall to accommodate the required thickness of fill material.
   B. Fill Void or Cavity Materials* - Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant
   The T Rating is 3 hr when the FS-ONE sealant is used and 2-3/4 hr when the FS_ONE MAX sealant is used.

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

Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. C-AJ-2419

F Rating - 3 Hr
T Rating - 0 Hr



SECTION A-A

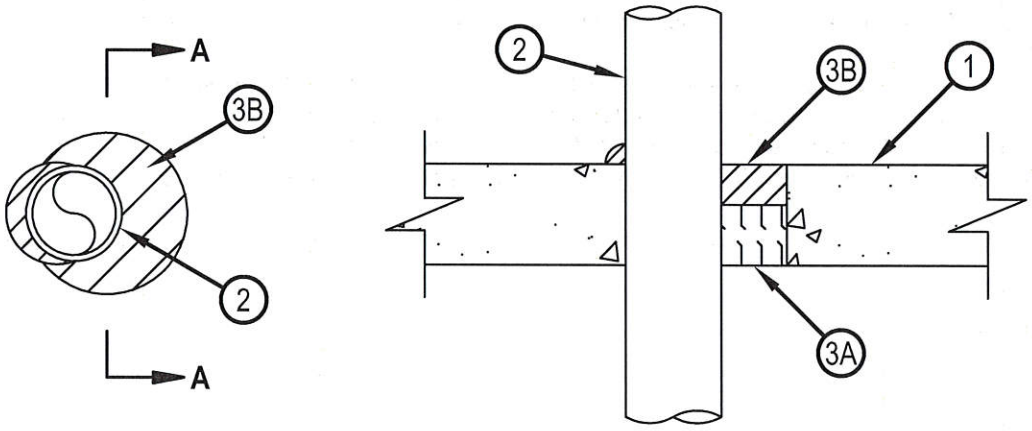
1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete floor or min 5 in. (127 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening shall be 6 in. (152 mm).
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Through Penetrants — One nonmetallic penetrant centered within the firestop system. The annular space between pipe and periphery of opening shall be nom 3/4 in. (19 mm). Pipe to be rigidly supported on both sides of the floor assembly. The following types and sizes of non-metallic pipe may be used:
   A. Polyvinyl Chloride (PVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core 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 4 in. (102 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.
   C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
3. Firestop System — The details of the firestop system shall be as follows:
   A. Fill, Void or Cavity Material* - Wrap Strip — Nom 3/16 in. (5 mm) thick by 1-3/4 in. (44 mm) wide intumescent wrap strip. The wrap strip is continuously wrapped around the outer circumference of the pipe covering two times and slid into the annular space. When multiple wrap strips are used to achieve the required total length, the ends are to be butted end to end and held in place with tape. The bottom edge of the wrap strip shall be recessed 1/2 in. (13 mm) from the bottom surface of the concrete floor. In walls, the wrap shall be installed on both surfaces of the wall such that the exposed edge of the wrap strip is recessed 1/2 in. (13 mm) from each side of the wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 648-E- W45/1-3/4" Wrap Strip
   B. Fill, Void or Cavity Materials* - Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with bottom surface of floor or 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.

Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. C-AJ-2647

F Rating - 2 Hr
T Rating - 1/2 Hr
L Rating at Ambient — Less Than 1 CFM/sq ft
L Rating at 400 F — Less Than 1 CFM/sq ft



SECTION A-A

1. Floor or Wall Assembly — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete floor or min 3-1/2 in. (89 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete wall. 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.

   1A. Steel Deck/Floor Assembly — (Not Shown) — As an alternate to Item 1, the floor assembly may consist of a min 2 hr fire rated fluted steel deck/concrete floor assembly. The floor assembly shall be constructed of the materials and in the manner described in the individual Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

   A. Steel Floor and Form Units — Min 1-1/2 in. (38 mm) deep galv fluted units.

   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete, as measured from the top plane of the floor units.

2. Through-Penetrant — One nonmetallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between the penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-5/8 in. (41 mm). Penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of penetrants may be used:

   A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) piping systems.

   B. 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.

   C. Rigid Nonmetallic Conduit+ — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).

   D. Electrical Nonmetallic Tubing (ENT)+ — Nom 2 in. (51 mm) diam (or smaller) electrical nonmetallic tubing. Tubing to be installed in accordance with the National Electrical Code (NFPA No.70).

   See Electrical Nonmetallic Tubing (FKHU) category in the Electrical Construction Material Directory for names of manufacturers.

   E. Crosslinked Polyethylene (PEX) Tubing — Nom 1 in. (25 mm) diam (or smaller) SDR 9 PEX tubing for use in closed (process or supply) piping systems.

Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. C-AJ-2647

F Rating - 2 Hr
T Rating - 1/2 Hr
L Rating at Ambient — Less Than 1 CFM/sq ft
L Rating at 400 F — Less Than 1 CFM/sq ft

3. Firestop System — The firestop system shall consist of the following:
   A. Packing Material — Min 1-1/2 in. (38 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 in. (25 mm) thickness of fill material applied within the annulus, flush with the top surface of floor or both surfaces of wall. At the point of contact location between pipe and concrete, a min 1/2 in. diam bead of fill material shall be applied at the concrete/pipe 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.

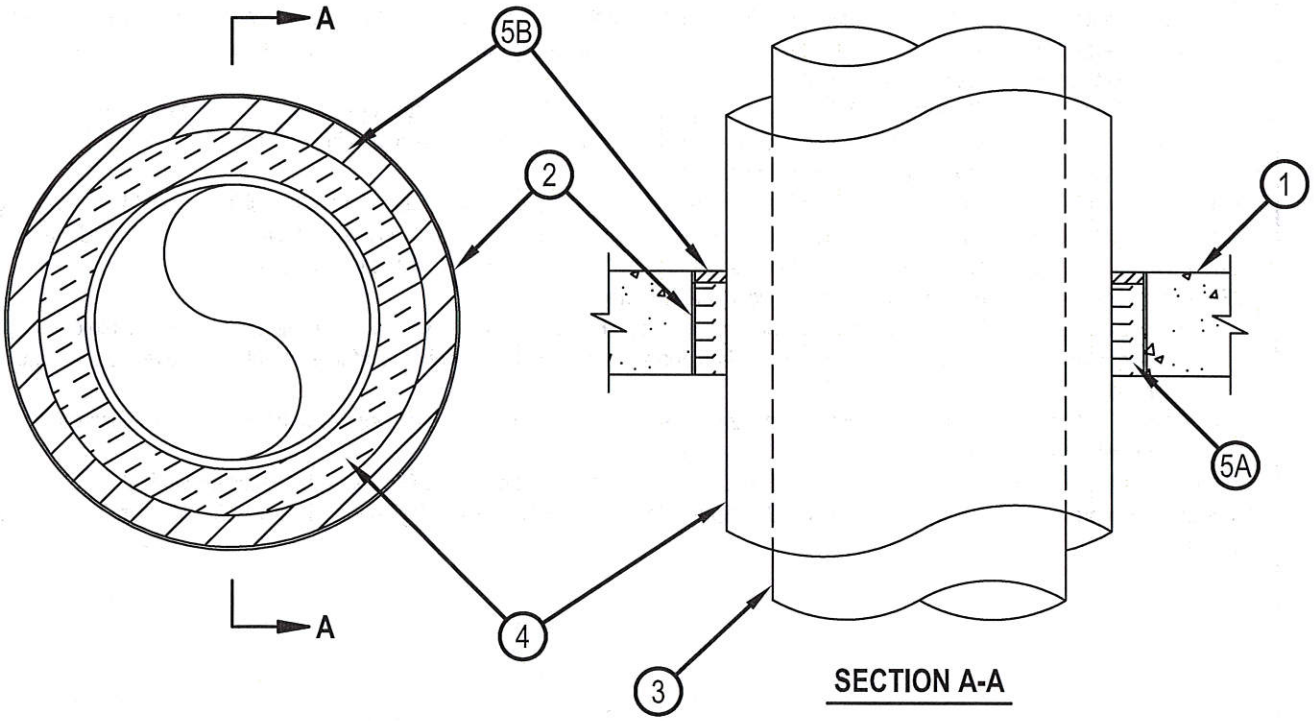
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

+Bearing the UL Listing Mark

System No. C-AJ-5091

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Ratings — 0 and 1 Hr (See Items 2 and 4)	FT Ratings — 0 and 1 Hr (See Items 2 and 4)
L Rating At Ambient — 4 CFM/sq ft	FH Rating — 2 Hr
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Ratings — 0 and 1 Hr (See Items 2 and 4)
	L Rating At Ambient —4 CFM/sq ft
	L Rating At 400 F —Less Than 1 CFM/sq ft



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/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 29 in. (737 mm).
   See Concrete Blocks (CAZT) category in the Fire Resistance directory for names of manufacturers.
2. Metallic Sleeve — (Optional) — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. (76 mm) above floor or beyond both surfaces of wall. If the steel sleeve extends beyond the top surface of the floor or both surfaces of the wall, the T Rating of the firestop system is 0 hr.
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 approximately 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 flush with bottom surface of floor and may extend a max of 1 in. (25 mm) above the top surface of the 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 approximately 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 flush with bottom surface of floor and may extend a max of 1 in. (25 mm) above the top surface of the floor.

3. Through Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:
   A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 12 in. (305 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.
4. Pipe Covering — Min 1/2 in. (13 mm) to max 2 in. (51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m^3) 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. The annular space between the insulated pipe and the edge of the periphery of the opening shall be min 1/2 in. (13 mm) to max 12 in. (305 mm). When thickness of pipe covering is less than 2 in. (51 mm), the T Rating for the firestop system is 0 hr.

   See Pipe 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.

4A. Pipe Covering — (Not Shown) — As an alternate to Item 4, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf or 224 kg/m^3) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. The annular space shall be min 1/2 in. (13 mm) to max 12 in. (305 mm).

5. 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/m^3) 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* — Sealant — 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.

   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.

Firestop Wrap Strip (CP 648-E)

Product description

- An intumescent, flexible firestop wrap strip for plastic and insulated pipe penetrations

Product features

- Highly Intumescent
- Long length avoids waste
- Can be continuously wrapped
- Cost effective
- Quick and easy closure without tools
- Ideal for very tight installations

Areas of application

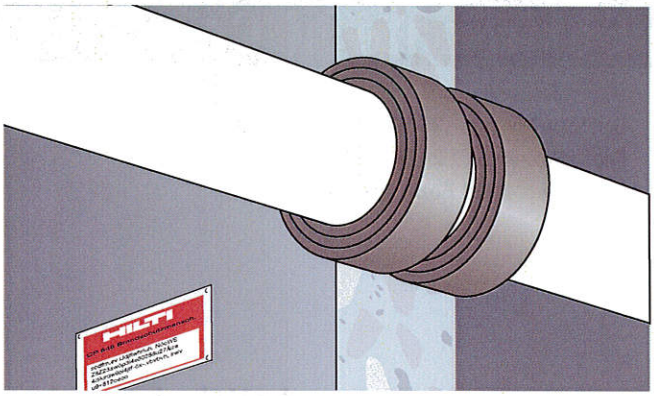
- Firestopping combustible pipe penetrations
- Difficult applications where space is limited
- Penetrations through concrete over metal deck
- Plastic and insulated penetrations using PVC, CPVC, ABS, FRPP and PEX

For use with

- Concrete, masonry, wood floor and gypsum wall assemblies
- Wall and floor assemblies rated up to 4 hours

Examples

- Waste water pipes
- Fresh water pipes
- Decking penetrations



Technical Data*	CP 648-E
Density	Approx. 1.35 g/cm³
Dimensions (approximate)	3/16" x 1" x 33 ft or 3/16" x 1-3/4" x 33 ft
Color	Black with foil backing
Temperature resistance	–40°F to 212°F (–40°C to 100°C)
Intumescent activation	Approx. 320°F (160°C)
Expansion ratio (unrestricted)	1:40
Tested in accordance with • UL 1479 • ASTM E 814 • ASTM G21	

*At 73°F (23°C) and 50% relative humidity

CLASSIFIED C UL US
FILL, VOID OR CAVITY MATERIAL FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY 66Y7

FM APPROVED

FBC SYSTEM COMPATIBLE
Visit fbcsystemcompatible.com. FBC™ is a trademark of the Lubrizol Corporation.

Installation instructions for CP 648-E

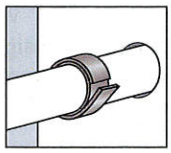
Notice

- Before handling, read Material Safety Data Sheet and product label for safe usage and health information.
- Instructions below are general guidelines — always refer to the applicable drawing in the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information

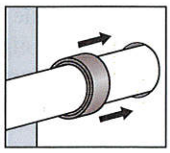
Opening

1. Clean the plastic or insulated pipe penetration. Expansion of the intumescent material during a fire closes the plastic or insulated pipe penetration. Very dirty pipes (ie: with remains of mortar) may lead to a delay in this closing action. Soiled plastic pipes or insulated pipe penetrations should, therefore, be cleaned in the area where the CP 648-E Firestop Wrap Strip is to be installed.

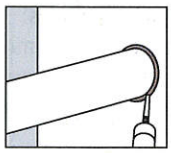
1. Clean penetration



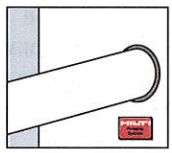
2. Wrap strips around pipe the specified number of times



3. Push Wrap Strips into hole



4. Seal penetration against smoke with FS-ONE



5. Fasten installation plate (If required)

Application of firestop system

2. Tightly wrap the required number of strips continuously around the penetrant, and hold in place with tape.
3. Push the Hilti Wrap Strip into the opening until it is flush with the substrate surface unless otherwise required by the UL system. It may be required by the UL system to clamp, wire or use a Hilti Retaining Collar to secure the wrap strip in place for some applications.
4. If the UL system requires a cold smoke seal, then apply the proper amount of Hilti FS-ONE sealant in the opening over the wrap strip.
5. For maintenance reasons, a penetration seal can be permanently marked with an identification plate and fastened in a visible position next to the seal.

Not for use

- In highly corrosive surroundings
- With unapproved retaining collars, anchors/fasteners
- Outdoors

Storage

- Store only in the original packaging in a location protected from moisture at temperatures between 23°F and 86°F (–5°C and 30°C).

Hilti Firestop
Saving lives through innovation and education

Hilti. Outperform. Outlast.

Certificate of Compliance

Certificate Number **20060214-R13240L**
Report Reference **2006 February 14**
Issue Date **2006 February 14**

Underwriters Laboratories Inc.®

Issued to: Hilti, Inc.
5400 S 122ND East Ave
Tulsa, OK 74146 USA

This is to certify that representative samples of Fill, Void or Cavity Materials
CP 648E, CP 648S

Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 1479, CAN/ULC-S115-05

Additional Information: CP 648E and CP648S (Product number may be suffixed to denote size) Wrap Strip for use in Through-Penetration Firestop Systems as currently described in the UL Fire Resistance Directory.

Only those products bearing the UL Classification Mark should be considered as being covered by UL's Classification and Follow-Up Service.

The UL Classification Mark includes: UL in a circle symbol: with the word "CLASSIFIED" (as shown); a control number (may be alphanumeric) assigned by UL; a statement to indicate the extent of UL's evaluation of the product; and, the product category name (product identity) as indicated in the appropriate UL Directory.

Look for the UL Classification Mark on the product

Issued by:
Mona Couloute
Mona Couloute
Underwriters Laboratories Inc.

Reviewed by:
Christopher Johnson
Underwriters Laboratories Inc.

September 24, 2015

To Whom It May Concern:

Re: **CP 648 E&S Firestop Wrap Strips – LEED Information**

Item Numbers:

304303	304307
304304	304308
304305	304309
304306	

The Hilti CP 648 E & S Firestop Wrap Strips are manufactured in Germany.

The Hilti CP 648 E & S Firestop Wrap Strips have a VOC content of 3.1 grams/liter.

The amount of post-consumer or post-industrial content in CP 648 E & S Firestop Wrap Strips is not known. The packaging is recyclable. The CP 648 E & S Firestop Wrap Strips do not contain any Rapidly Renewable Materials.

The CP 648 E & S Firestop Wrap Strips are not regulated as a hazardous waste by the Federal EPA Standards. The regulations for the disposal of non-regulated industrial waste can vary from state to state and even city to city. For this reason, you should consult your local and state regulatory agencies for direction on disposal.

Please feel free to contact me at (918) 872-3704 if you have questions.

Sincerely,

Jerry Metcalf MPH, CHMM
Sr. Manager, Safety/Environmental
Hilti Inc.
(918) 872 3704
jerry.metcalf@hilti.com

Rev. Date: 8/14/15

The manufacturing plant location on this certificate has been provided for LEEDS reporting purposes only. It should never be used for Country of Origin certification or a representation of compliance/non-compliance with Buy American or Buy America requirements, as those requirements differ.

The manufacturing plant location(s) identified on the certificate represent standard Hilti catalog products only. "Specially" produced non-catalog Hilti products may have differing manufacturing plant locations.

Contact your Hilti representative in cases of "specially" produced products for a custom LEEDS certificates.

Hilti, Inc.
5400 South 122nd East Avenue
Tulsa, OK 74146

1-800-879-8000
www.hilti.com

High performance intumescent firestop sealant FS-ONE MAX

Product description

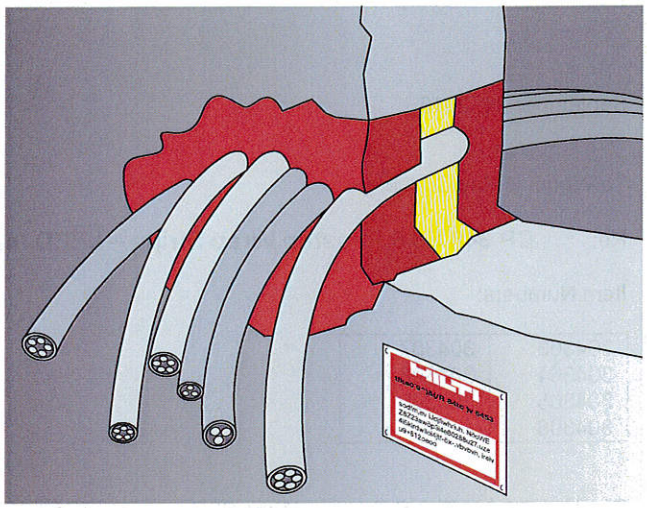
- Intumescent (expands when exposed to fire) firestop sealant that helps protect combustible and non-combustible penetrations for up to 4 hours fire rating

Applications

- Effectively seals most common through penetrations in a variety of base materials
- For use on concrete, masonry and drywall
- Mixed and multiple penetrations
- Metal pipe penetrations
- Insulated metal pipe penetrations
- Plastic pipe penetrations
- Cable bundles and trays
- HVAC penetrations

Advantages

- One product for a variety of common through penetrations
- Cost-effective and easy-to-use solution
- Water-based and paintable
- W-rated systems available
- Ethylene glycol-free
- Industry leading VOC results
- Convenient multi application firestop solution for penetrations



Technical Data*	
Chemical basis	Water-based acrylic dispersion
Color	Red
Application temperature	41°F to 104°F
Storage and transportation range	41°F to 77°F
Approx. cure time *	4 mm / 3 days
Shelf life	12 months **
Temperature resistance range	-4°F to 212°F
Mold and mildew performance	Class 0 (ASTM G21-13)
Mold and mildew resistant	Yes
Surface burning characteristics (ASTM E 84-14)	Flame Spread: 0 Smoke Development: 10
Approvals	California State Fire Marshal - in progress
Tested in accordance with	ASTM G21 ASTM E 90 CAN/ULC-S115 UL 1479 ASTM E 814 ASTM E84

* At 75°F (24°C) and 50% relative humidity
** from date of manufacture

CLASSIFIED C UL US
FILL, VOID OR CAVITY MATERIAL
FOR USE IN THROUGH-PENETRATION
FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
66Y7

FM APPROVED

FBC SYSTEM COMPATIBLE
Visit fbcsystemcompatible.com.
FBC™ is a trademark of the Lubrizol Corporation.

W rated

01/15 DBS

Date: June 22, 2015

Subject: **Buy American Certification**

Product: Firestop sealant FS-ONE MAX 10.1OZ Cartridge (Item #2101531)
Firestop sealant FS-ONE MAX 20.0OZ Foil (Item #2101532)
Firestop sealant FS-ONE MAX 5GAL Pail (Item #2101533)

To Whom it May Concern:

Hilti, Inc. certifies that the above referenced product(s) as described on the Purchase Order identified above, is (are) a domestic end product (as defined in FAR Subpart 25.1, "Buy American Act--Supplies"), or satisfies the preference for domestic construction material (as defined in FAR Subpart 25.2, "Buy American Act--Construction Materials").

Sincerely,

Thomas M. Horan, QA Manager

Buyamericanfsonemax.doc

Hilti, Inc.
5400 South 122nd East Avenue
Tulsa, OK 74121 USA

T (918) 872-3000 I F 800-879-7000
www.hilti.com

August 26, 2015

To Whom It May Concern:

Re: **Hilti FS-ONE Max Firestop – LEED Info**.

Item Numbers:

2101531
2101532
2101533

The Hilti FS-ONE MAX Firestop is manufactured in the United States

There is no post-consumer or post-industrial content in FS-ONE MAX and it cannot be recycled. The VOC content for FS-ONE MAX is 9 grams/liter.

FS-ONE MAX is not regulated as a hazardous waste by the Federal EPA Standards. The regulations for the disposal of non-regulated industrial waste can vary from state to state and even city to city. For this reason, you should consult your local and state regulatory agencies for direction on disposal.

Please feel free to contact me at (918) 872-3704 if you have questions.

Sincerely,

Jerry Metcalf MPH, CHMM
Sr. Manager, Safety/Environmental
Hilti Inc
(918) 872 3704
jerry.metcalf@hilti.com

Rev. Date: 7/31/15

The manufacturing plant location on this certificate has been provided for LEEDS reporting purposes only. It should never be used for Country of Origin certification or a representation of compliance/non-compliance with Buy American or Buy America requirements, as those requirements differ.

The manufacturing plant location(s) identified on the certificate represent standard Hilti catalog products only. "Specially" produced non-catalog Hilti products may have differing manufacturing plant locations.

Contact your Hilti representative in cases of "specially" produced products for a custom LEEDS certificates.

Hilti, Inc.
5400 South 122nd East Avenue
Tulsa, OK 74146

1-800-879-8000
www.hilti.com

Underwriters Laboratories Inc.®

Northbrook Division
333 Pfingsten Road
Northbrook, IL 60062-2096 USA
www.ul.com
tel: 1 847 272 8800

CERTIFICATE OF COMPLIANCE

CERTIFICATE NUMBER: 20040809-R10905

ISSUE DATE: August 9, 2004

Issued to: Thermafiber Inc.
3711 W Mill St Ext
Wabash, IN 46992

Report Reference: **R10905**

This is to Certify that representative samples of: Forming Material, designated as Type SAF mineral wool batts.

Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 1479, Fire Tests of Through-Penetration Firestops. ANSI/UL 2079, Test for Fires Resistance of Building Joint Systems. ASTM E2307-04, Standard Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediae-Scale, Multi-story Test Apparatus

Additional Information: Type SAF mineral wool batts for use as a forming material for use in various Through-Penetration FireStop Systems, Joint Systems and Perimeter Fire Barrier Systems as Specified in UL's Fire Resistance Directory Volume 2.

Only those products bearing the UL Classification Marking should be considered as being covered by UL's Classification and Follow-Up Service.

The UL Classification Marking includes: UL in a circle symbol: with the word "CLASSIFIED" (as shown); a control number (may be alphanumeric) assigned by UL; a statement to indicate the extent of UL's evaluation of the product; and, the product category name (product identity) as indicated in the appropriate UL Directory.

Engineer:
Mona Couloute
Underwriters Laboratories Inc.

Review Engineer:
Chris Johnson
Underwriters Laboratories Inc.

September 24, 2015

To Whom It May Concern:

Re: **Hilti Mineral Wool-LEED Information**

Item Number:

236993

The Hilti Mineral Wool is manufactured in Wabash, Indiana.

The post-consumer recycled content in the Hilti Mineral Wool is 0%. The pre-consumer recycled content in the Hilti Mineral Wool is 90%. There is no detectable VOC content in this product.

Hilti Mineral Wool is not regulated as a hazardous waste by the Federal EPA Standards. The regulations for the disposal of non-regulated industrial waste can vary from state to state and even city to city. For this reason, you should consult your local and state regulatory agencies for direction on disposal.

Please feel free to contact me at (918) 872-3704 if you have questions.

Sincerely,

Jerry Metcalf MPH, CHMM
Sr. Manager, Safety/Environmental
Hilti Inc.
918 872 3704
jerry.metcalf@hilti.com

Rev. Date: 9/24/15

The manufacturing plant location on this certificate has been provided for LEEDS reporting purposes only. It should never be used for Country of Origin certification or a representation of compliance/non-compliance with Buy American or Buy America requirements, as those requirements differ.

The manufacturing plant location(s) identified on the certificate represent standard Hilti catalog products only. "Specially" produced non-catalog Hilti products may have differing manufacturing plant locations.

Contact your Hilti representative in cases of "specially" produced products for a custom LEEDS certificates.

Hilti, Inc.
5400 South 122nd East Avenue
Tulsa, OK 74146

1-800-879-8000
www.hilti.com