Firestop Submittal Package

TITLE

Project: PROJECTNAME
PROJECTADDRESS1
PROJECTADDRESS2
PROJECTCITY_PROJECTSTATE_PROJECTZIP

Date: SUBMITTALDATE

Submitted by: SUBMITTERNAME
SUBMITTERADDRESS1
SUBMITTERADDRESS2
SUBMITTERCITY_SUBMITTERSTATE_SUBMITTEF

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

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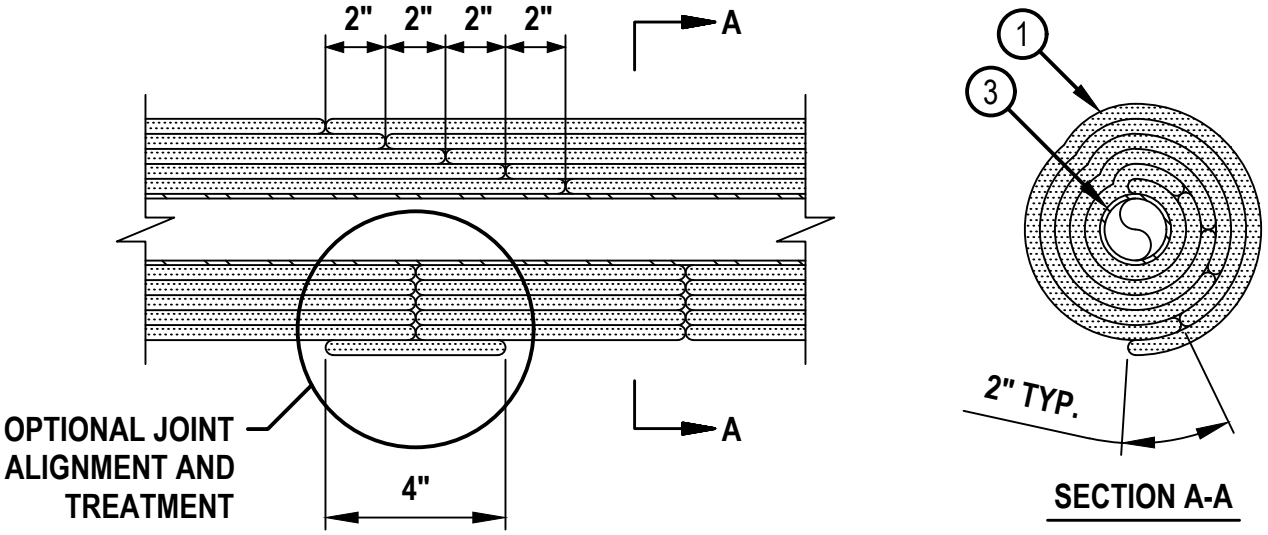
Hilti Corporation
Design Number HI/AF 120-02
Applied Fireproofing
Hilti CPF-ES Endo-Shield
UL 1489
Min. 1 in. Tubing, 5 Layers of Hilti Endo-Shield: 2 Hour
Min. 4 in. Tubing, 4 Layers of Hilti Endo-Shield: 2 Hour

METHOD 1



METHOD 2

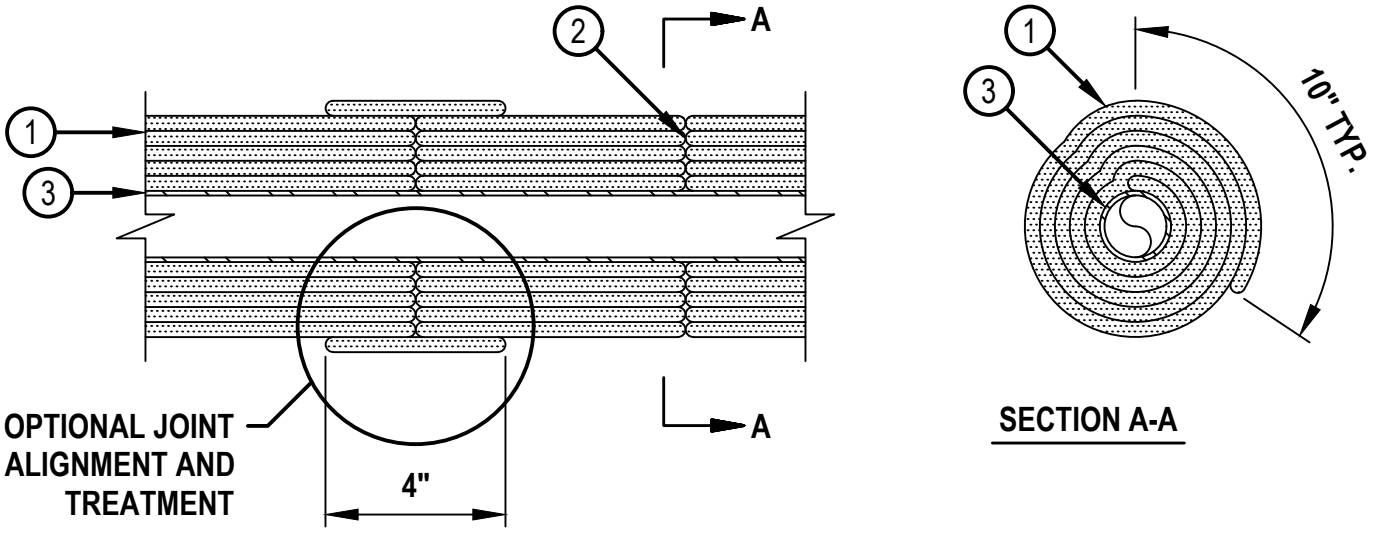


Figure 1. Min. 1 in. Pipe, 5 Layers of Hilti Endo-Shield Specifications

Hilti Corporation
Design Number HI/AF 120-02
Applied Fireproofing
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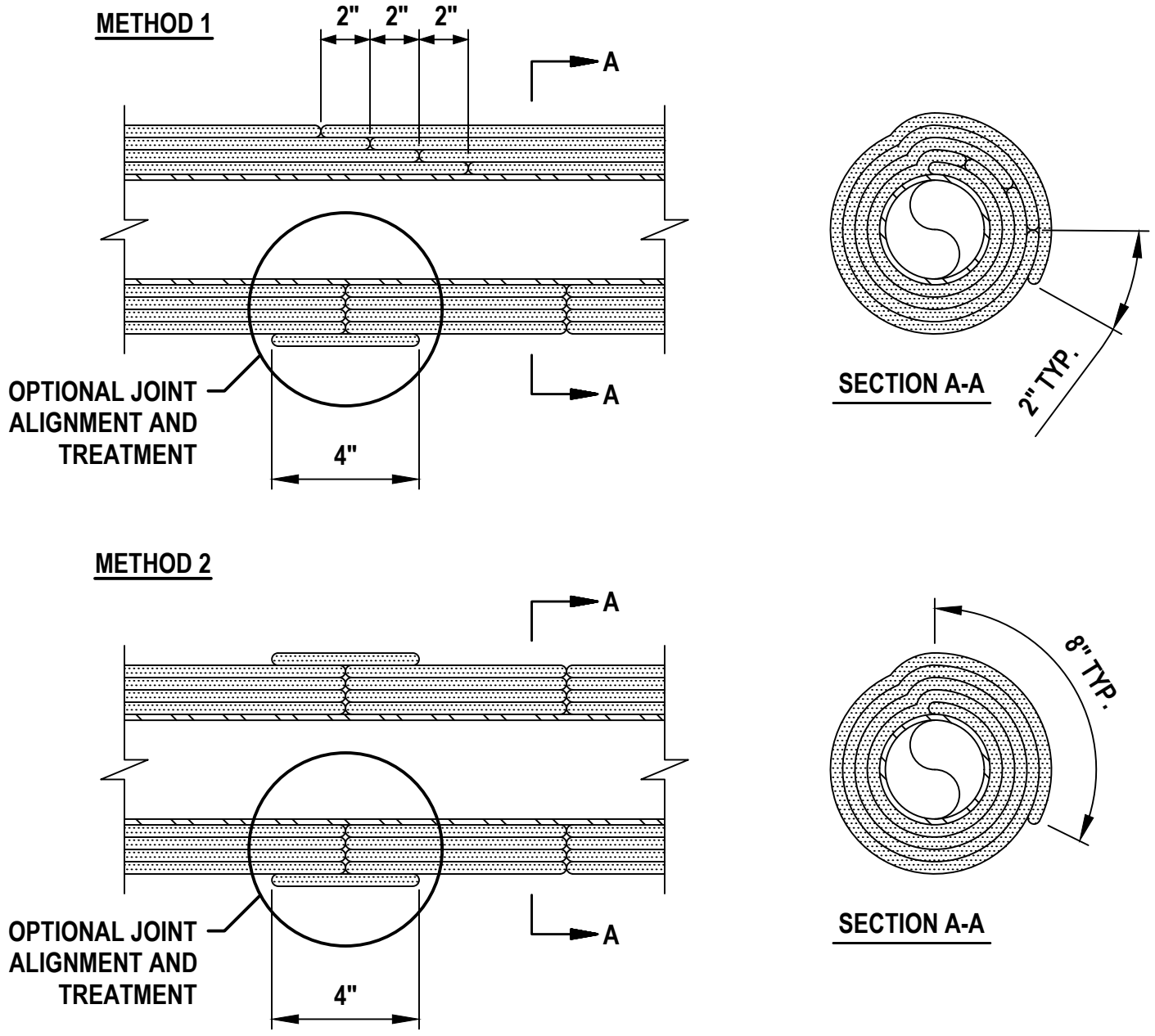

Figure 2. Min. 4 in. Pipe, 4 Layers of Hilti Endo-Shield Specifications

Hilti Corporation
Design Number HI/AF 120-02
Applied Fireproofing
Hilti CPF-ES Endo-Shield
UL 1489
Min. 1 in. Tubing, 5 Layers of Hilti Endo-Shield: 2 Hour
Min. 4 in. Tubing, 4 Layers of Hilti Endo-Shield: 2 Hour

1. FIRE-RESISTANT PIPE PROTECTION SYSTEM

CERTIFIED MANUFACTURER: Hilti Corporation

CERTIFIED PRODUCT: Applied Fireproofing

CERTIFIED MODEL: Hilti CFP-ES Endo-Shield

Install Hilti Endo-Shield layers to achieve the desired fire resistance rating.

METHOD 1 - INDIVIDUALLY WRAPPED

LAYER 1 - Using 1/2 in. wide filament tape, aluminum foil tape, or FSK tape, attach leading edge of Hilti Endo-Shield onto the tubing (Item 3). Wrap Hilti Endo-Shield tightly around the tubing and overlapping 2 in. at the longitudinal seam. For the longitudinal seam, apply 3 in. wide aluminum foil tape or FSK tape centered for the full length of the seam. Additional wrap sections are added to insulate all straight runs of tubing. The radial seams are butted end-to-end without an overlap.

For the radial seams, apply 3 in. wide aluminum foil tape or FSK tape over the seam and overlap 2 in. back onto itself.

The elbows are each fitted with a gore segment cut to accommodate the elbow radius that occurs as the Hilti Endo-Shield is wrapped radially around the elbow. Using min. 1/2 in. wide filament tape, aluminum foil tape, or FSK tape, attach edge of gore segment to tubing and wrap segment tightly around tubing overlapping 2 in. at the longitudinal seam which shall be located at the long radius of the elbow. Apply 3 in. wide aluminum foil tape or FSK tape centered for the full length of the longitudinal seam. The radial seam butted between the gore end segment and adjoining straight section is filled with Hilti CP 606 or FS-ONE MAX Firestop Sealant (Item 2). Apply 3 in. wide aluminum foil tape or FSK tape over the radial seam and overlap 2 in. back onto itself.

LAYER 2 - Wrap a second layer of Hilti Endo-Shield in the same manner as Layer 1. The start of Layer 2 begins at the longitudinal seam of Layer 1, secured with 3 in. wide aluminum foil tape or FSK tape covering the full length of the seam. Offset the Layer 2 radial seam 2 in. from the radial seam of Layer 1. Tightly wrap Layer 2 over Layer 1 and overlap the longitudinal seam by 2 in. Cover the full length of the longitudinal and radial seam with 3 in. wide aluminum foil tape or FSK tape.

The elbows are each fitted with a gore segment cut to accommodate the elbow radius that occurs as the Hilti Endo-Shield is wrapped radially around the elbow in the same manner as Layer 1. The gore segment is attached to Layer 1 with 3 in. wide aluminum foil tape or FSK tape and wrapped tightly around Layer 1, overlapping 2 in. at the longitudinal seam. The longitudinal seam of Layer 2 is located at the short radius of the elbow. Apply 3 in. wide aluminum foil tape or FSK tape centered for the full length of the longitudinal seam. The radial seam butted between the gore end segment and adjoining straight Layer 2 section is filled with Hilti CP 606 or FS-ONE MAX Firestop Sealant (Item 2). The elbow and straight section butt joints of Layer 1 and Layer 2 are in alignment and not offset. Apply 3 in. wide aluminum foil tape or FSK tape over the seams and overlap 2 in. back onto itself.

LAYER 3, 4, AND 5 - As required, wrap a third, fourth, or fifth layer of Hilti Endo-Shield in the same manner as Layer 2 to obtain desired rating.

The elbow longitudinal seam for Layer 3 is located at the middle radius of the elbow, rotated 90 degrees from the longitudinal seam of Layer 2. The elbow longitudinal seam for Layer 4 is located at the middle radius of the elbow, rotated 180 degrees from the longitudinal seam of Layer 3. The elbow longitudinal seam for Layer 5 is located at the long radius of the elbow.

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Min. 4 in. Tubing, 4 Layers of Hilti Endo-Shield: 2 Hour

OPTIONAL JOINT ALIGNMENT AND TREATMENT (METHOD 1) - Alternatively, the radial seams of Layer 1 and subsequent layers can be aligned. When the radial seams are aligned, apply Hilti CP 606 or FS-ONE MAX Firestop Sealant (Item 2) over the entire edge of the of Hilti Endo-Shield prior to installing the adjacent section.

METHOD 2 - CONTINUOUSLY WRAPPED

Hilti Endo-Shield may be continuously wrapped around the tubing. Using min. ½ in. wide filament tape, aluminum foil tape, or FSK tape, attach leading edge of Hilti Endo-Shield onto the tubing (Item 3) and wrap continuously. Prior to installing the adjacent continuously wrapped section, apply 1/8 in. thick of CP 606 or FS-ONE MAX Firestop Sealant (Item 2) over the entire edge of the Hilti Endo-Shield. A 2 in. overlap of longitudinal seam shall be included for each layer required. For example, a 4 layer system requires an 8 in. overlap on final layer. Apply 3 in. wide aluminum foil tape or FSK tape over the full length of the longitudinal seam.

For elbow sections, follow details for Method 1, Layer 1, and Layer 2, and subsequent layers.

The outer layer for Method 1 and 2 is secured with min. 18 GA steel tie wire or 1/2 in. wide stainless steel banding located 1 in. from each radial seam. Space the steel tie wire 6 in. on center (oc) between the seams or the 1/2 in. wide stainless steel banding 12 in. oc. At the elbows, space the steel wire 2 in. oc or the stainless steel banding 2 in. oc, both at the short interior radius.

OPTIONAL JOINT ALIGNMENT AND TREATMENT (METHOD 1 AND 2) - As an alternative to applying sealant at radial seams and seams between the gore end segment and adjoining straight section, an additional 4 in. wide section of Hilti Endo-Shield may be centered over the radial seam of the final layer overlapping 2 in. at the longitudinal seam. Apply 3 in. wide aluminum foil or FSK tape over the longitudinal seam of the 4 in. wide section of Hilti Endo-Shield. Further secure section with min. 18 GA steel wire or ½ in. wide stainless steel banding located 1 in. from each edge.

When Hilti CFP-ES Endo-Shield is installed on a 4-in. pipe assembly where the radial seams are aligned, sealant (Item 2) and an additional 4 in. wide section of Hilti Endo-Shield are required in combination and must be installed as detailed in Optional Joint Alignment and Treatment. Refer to Figure 2.

OPTIONAL ELBOW TREATMENT (METHOD 1 AND 2) - As an alternative to gore segments Hilti Endo-Shield may be wrapped around the straight sections of pipe adjacent to the elbow per Method 1 or 2 above except material shall not be taped permanently to pipe. Each section to be cut to provide a 45º surface on the side of Hilti Endo-Shield closest to the elbow. Hilti CP 606 or FS-ONE MAX to be applied 1/8 in. thick to cover cut edges on one section. Both sections of Hilti Endo-Shield shall be slid together while aligning the 45º angled cuts. Apply 3 in. wide aluminum or FSK tape over the seam of the adjoining pieces of Hilti Endo-Shield. Further secure elbow treatment with min. 18 GA steel wire located 1 in. from interior radius of elbow treatment on both sections of Hilti Endo-Shield. Tie an additional 3 pieces of min. 18 GA steel wire, to existing wires, centered horizontally and vertically to form a basket around elbow protection.

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Min. 1 in. Tubing, 5 Layers of Hilti Endo-Shield: 2 Hour
Min. 4 in. Tubing, 4 Layers of Hilti Endo-Shield: 2 Hour

2. CERTIFIED MANUFACTURER: Hilti Corporation

CERTIFIED PRODUCT: Sealant

CERTIFIED MODEL: CP 606 or FS-ONE MAX Firestop Sealant

Install CP 606 or FS-ONE MAX Firestop Sealant at seams of elbow gore segments and for any gap greater than 1/8 in. at a butted seam. Use only Hilti CP 606 Sealant bearing an UL Certified Mark and only FS-ONE MAX Firestop Sealant bearing an Intertek Certified Label.

3. FUEL PIPE ASSEMBLY: Min. nominal 1 in. diameter and max. 4 in. diameter Schedule 40 steel pipe. All fittings shall be welded. Pipe shall be supported by steel pipe hangers in conjunction with min. 3/8 in. diameter threaded steel rod. A minimum of two layers of wrap are required for the pipe support system. Refer to manufacturer's installation instructions regarding pipe support assembly.

Hilti Corporation
Design Number HI/AF 120-03
Applied Fireproofing
Hilti CPF-ES Endo-Shield
UL 1489
Min. 3 in. Steel Pipe (Outer Containment Pipe), 5 Layers of Hilti Endo-Shield : 2 Hr
Min. 4 in. Steel Pipe (Outer Containment Pipe), 4 Layers of Hilti Endo-Shield : 2 Hr

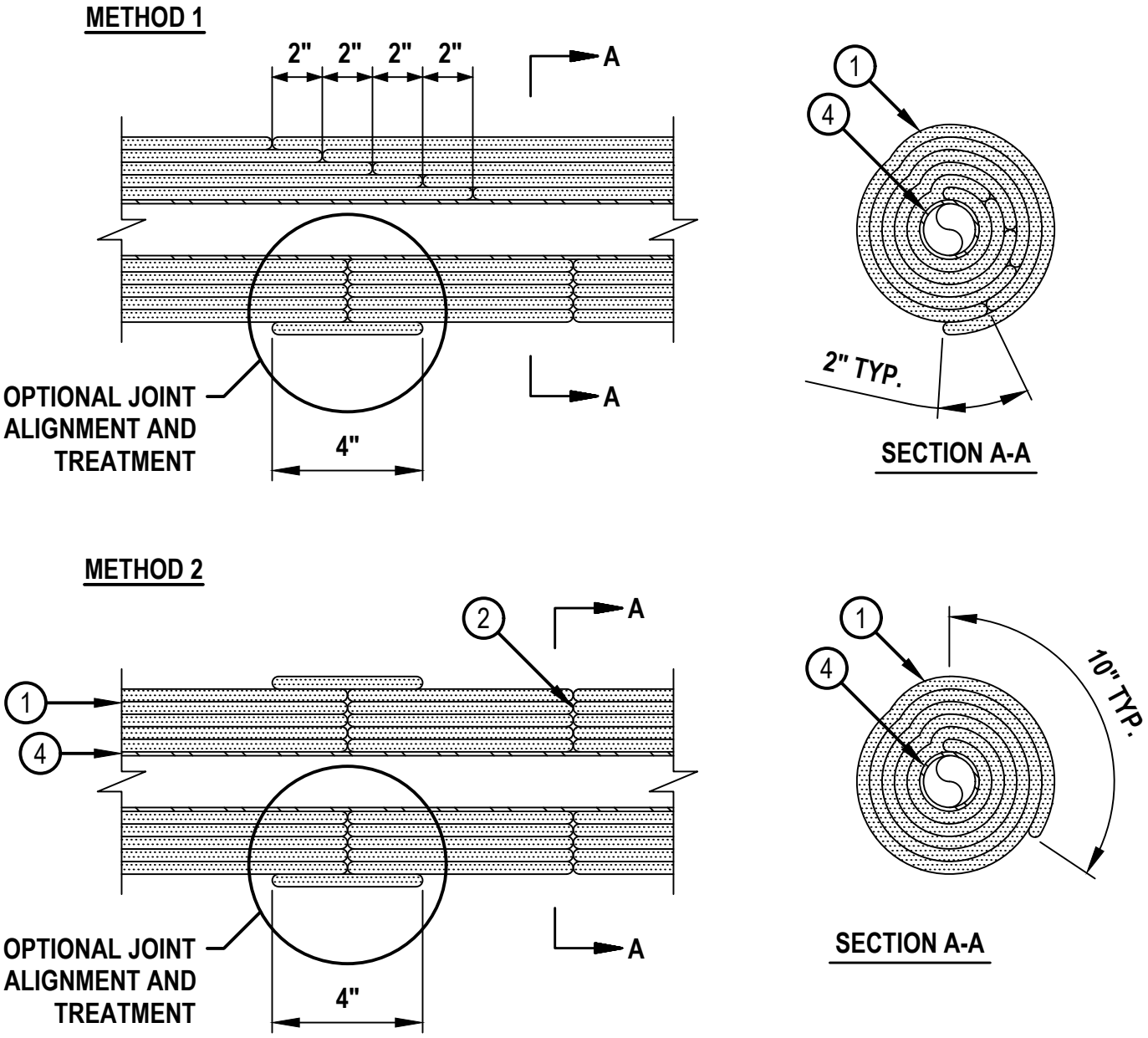

Figure 1. Min. 3 in. Steel Pipe, 5 Layers of Hilti Endo-Shield Specifications - Outer Containment Pipe Only Shown

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Min. 3 in. Steel Pipe (Outer Containment Pipe), 5 Layers of Hilti Endo-Shield : 2 Hr
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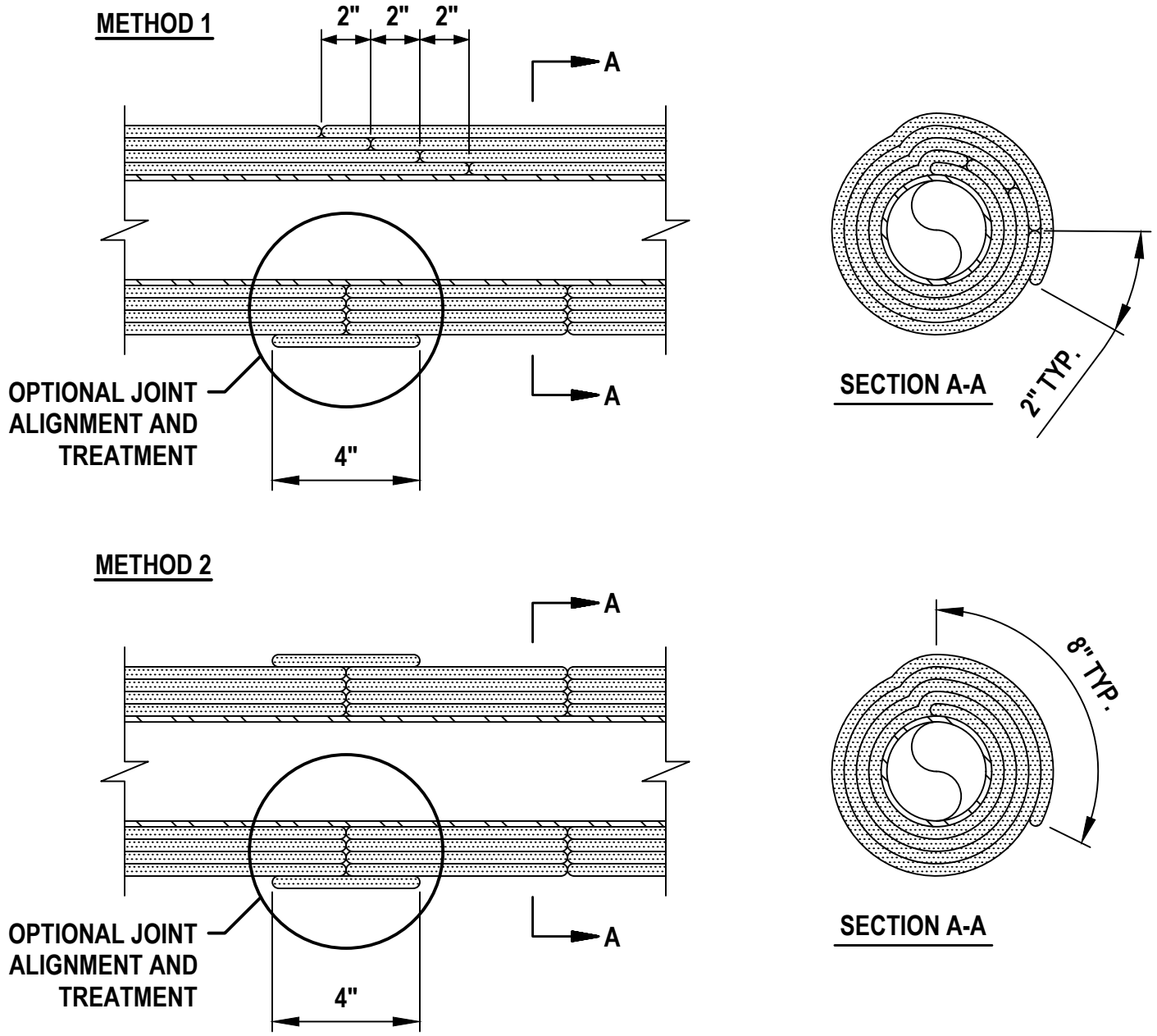

Figure 2. Min. 4 in. Steel Pipe, 4 Layers of Hilti Endo-Shield Specifications - Outer Containment Pipe Only Shown

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1. FIRE-RESISTANT PIPE PROTECTION SYSTEM

CERTIFIED MANUFACTURER: Hilti Corporation

CERTIFIED PRODUCT: Applied Fireproofing

CERTIFIED MODEL: Hilti CFP-ES Endo-Shield

Install Hilti Endo-Shield layers to achieve the desired fire resistance rating.

METHOD 1 - INDIVIDUALLY WRAPPED

LAYER 1 - Using 1/2 in. wide filament tape, aluminum foil tape, or FSK tape, attach leading edge of Hilti Endo-Shield onto the tubing (Item 3).

Wrap Hilti Endo-Shield tightly around the tubing and overlapping 2 in. at the longitudinal seam. For the longitudinal seam, apply 3 in. wide aluminum foil tape or FSK tape centered for the full length of the seam. Additional wrap sections are added to insulate all straight runs of tubing. The radial seams are butted end-to-end without an overlap. For the radial seams, apply 3 in. wide aluminum foil tape or FSK tape over the seam and overlap 2 in. back onto itself.

The elbows are each fitted with a gore segment cut to accommodate the elbow radius that occurs as the Hilti Endo-Shield is wrapped radially around the elbow. Using min. 1/2 in. wide filament tape, aluminum foil tape, or FSK tape, attach edge of gore segment to tubing and wrap segment tightly around tubing overlapping 2 in. at the longitudinal seam which shall be located at the long radius of the elbow. Apply 3 in. wide aluminum foil tape or FSK tape centered for the full length of the longitudinal seam. The radial seam butted between the gore end segment and adjoining straight section is filled with Hilti CP 606 or FS-ONE MAX Firestop Sealant (Item 2). Apply 3 in. wide aluminum foil tape or FSK tape over the radial seam and overlap 2 in. back onto itself.

LAYER 2 - Wrap a second layer of Hilti Endo-Shield in the same manner as Layer 1. The start of Layer 2 begins at the longitudinal seam of Layer 1, secured with 3 in. wide aluminum foil tape or FSK tape covering the full length of the seam. Offset the Layer 2 radial seam 2 in. from the radial seam of Layer 1. Tightly wrap Layer 2 over Layer 1 and overlap the longitudinal seam by 2 in. Cover the full length of the longitudinal and radial seam with 3 in. wide aluminum foil tape or FSK tape.

The elbows are each fitted with a gore segment cut to accommodate the elbow radius that occurs as the Hilti Endo-Shield is wrapped radially around the elbow in the same manner as Layer 1. The gore segment is attached to Layer 1 with 3 in. wide aluminum foil tape or FSK tape and wrapped tightly around Layer 1, overlapping 2 in. at the longitudinal seam. The longitudinal seam of Layer 2 is located at the short radius of the elbow. Apply 3 in. wide aluminum foil tape or FSK tape centered for the full length of the longitudinal seam. The radial seam butted between the gore end segment and adjoining straight Layer 2 section is filled with Hilti CP 606 or FS-ONE MAX Firestop Sealant (Item 2). The elbow and straight section butt joints of Layer 1 and Layer 2 are in alignment and not offset. Apply 3 in. wide aluminum foil tape or FSK tape over the seams and overlap 2 in. back onto itself.

LAYER 3, 4, AND 5 - As required, wrap a third, fourth, or fifth layer of Hilti Endo-Shield in the same manner as Layer 2 to obtain desired rating.

The elbow longitudinal seam for Layer 3 is located at the middle radius of the elbow, rotated 90 degrees from the longitudinal seam of Layer 2. The elbow longitudinal seam for Layer 4 is located at the middle radius of the elbow, rotated 180 degrees from the longitudinal seam of Layer 3. The elbow longitudinal seam for Layer 5 is located at the long radius of the elbow.

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Min. 4 in. Steel Pipe (Outer Containment Pipe), 4 Layers of Hilti Endo-Shield : 2 Hr

OPTIONAL JOINT ALIGNMENT AND TREATMENT (METHOD 1) - Alternatively, the radial seams of Layer 1 and subsequent layers can be aligned. When the radial seams are aligned, apply Hilti CP 606 or FS-ONE MAX Firestop Sealant (Item 2) over the entire edge of the of Hilti Endo-Shield prior to installing the adjacent section.

METHOD 2 - CONTINUOUSLY WRAPPED

Hilti Endo-Shield may be continuously wrapped around the tubing. Using min. 1/2 in. wide filament tape, aluminum foil tape, or FSK tape, attach leading edge of Hilti Endo-Shield onto the tubing (Item 3) and wrap continuously. Prior to installing the adjacent continuously wrapped section, apply 1/8 in. thick of CP 606 or FS-ONE MAX Firestop Sealant (Item 2) over the entire edge of the Hilti Endo-Shield. A 2 in. overlap of longitudinal seam shall be included for each layer required. For example, a 4 layer system requires an 8 in. overlap on final layer. Apply 3 in. wide aluminum foil tape or FSK tape over the full length of the longitudinal seam.

For elbow sections, follow details for Method 1, Layer 1, and Layer 2, and subsequent layers.

The outer layer for Method 1 and 2 is secured with min. 18 GA steel tie wire or 1/2 in. wide stainless steel banding located 1 in. from each radial seam. Space the steel tie wire 6 in. on center (oc) between the seams or the 1/2 in. wide stainless steel banding 12 in. oc. At the elbows, space the steel wire 2 in. oc or the stainless steel banding 2 in. oc, both at the short interior radius.

OPTIONAL JOINT ALIGNMENT AND TREATMENT (METHOD 1 AND 2) - As an alternative to applying sealant at radial seams and seams between the gore end segment and adjoining straight section, an additional 6 in. wide section of Hilti Endo-Shield may be centered over the radial seam of the final layer overlapping 2 in. at the longitudinal seam. Apply 3 in. wide aluminum foil or FSK tape over the longitudinal seam of the 6 in. wide section of Hilti Endo-Shield. Further secure section with min. 18 GA steel wire or 1/2 in. wide stainless steel banding located 1 in. from each edge.

When Hilti CFP-ES Endo-Shield is installed on a 4 in. pipe assembly where the radial seams are aligned, sealant (Item 2) and an additional 4 in. wide section of Hilti Endo-Shield are required in combination and must be installed as detailed in Optional Joint Alignment and Treatment. Refer to Figure 2.

2. CERTIFIED MANUFACTURER: Hilti Corporation

CERTIFIED PRODUCT: Sealant

CERTIFIED MODEL: CP 606 or FS-ONE MAX Firestop Sealant

Install CP 606 or FS-ONE MAX Firestop Sealant at seams of elbow gore segments and for any gap greater than 1/8 in. at a butted seam. Use only Hilti CP 606 Sealant bearing an UL Certified Mark and only FS-ONE MAX Firestop Sealant bearing an Intertek Certified Label.

3. FUEL PIPE ASSEMBLY: (NOT SHOWN) Min. 1 in. and max. 2 in. diameter Schedule 40 steel pipe with continuously welded fittings installed symmetrically within the outer containment pipe (Item 4) utilizing steel pipe spacer.

4. OUTER CONTAINMENT PIPE: Min. 3 in and max. 4 in. diameter Schedule 40 steel pipe with continuously welded fittings. Outer containment pipe shall be sized 2 sizes larger than the fuel pipe assembly (Item 3). Outer containment pipe shall be supported by steel pipe hangers in conjunction with min. 3/8 in. diameter threaded steel rod. A minimum of two layers of wrap are required for the pipe support system. Refer to the manufacturer's installation instructions for additional details regarding pipe support assembly.

CFP-ES ENDO-SHIELD

Product description

- Hilti Endo-Shield is a high-temperature endothermic mat for passive fire protection of critical cable circuits, fuel lines, communication systems and many other MEP systems. It is the industry's first LBP (Low Bio Persistent) endothermic mat for passive fire protection. LBP materials allow fibers to more easily clear from the lungs compared to ceramic fibers, resulting in a safer non-carcinogenic product for the installer.

Applications for use

- Fire protection of critical infrastructure, circuits and Distributed Antenna Systems which should remain operational under fire conditions
- Fire protection of cables within conduits
- Help protect fuel oil piping from fire — such as for backup generators
- Providing a T-rating for conduit, EMT or pipe penetrations — such as through floors in electrical, data or mechanical rooms
- Fire protection of large membrane penetrations — such as recessed electrical boxes/panels in rated barriers, fire extinguisher cabinets or medical gas box outlet

Advantages

- Faster, easier fire protection — high flexibility and low weight makes Hilti endothermic mat a more efficient solution, especially for small diameter pipes
- Safer jobsites — CFP-ES Hilti Endo-Shield is made using non-carcinogenic LBP fibers, helping to remove a common safety hazard for installers
- Helps to lower total installed cost — this simpler method can translate to help reduce significant labor and time savings on-site compared to traditional fire protection solutions
- Extensive third-party performance verification — tested to ASTM E1725 for circuit integrity, UL1489 for fuel pipe protection and tested in accordance to UL1479 (ASTM E814) for membrane and through penetrations

Installation instructions

- See Hilti Literature or third-party listings for complete application and installation details

Technical Data

Application temperature range	-4 °F to 176 °F (-20°C to 80°C)
Color	Silver
Density	32.6 lb/ft³
Dimension	(L x W) 20 ft. x 2 ft.
Shelf life	Unlimited
Storage and transportation temperature range	-4 °F to 176 °F (-20°C to 80°C)
Thickness	0.5 in.
Weight	54.4 lbs
Tested in accordance with	• UL 1489 protection of fuel & oil piping system • ASTM E1725 — circuit protection standard • UL 1479 (ASTM E814) for membrane and through penetrations

Order Information

Designation	Qty per package	Item number
Hilti Endo-Shield CFP-ES	1 roll	2331829

Specified Divisions

Section 07 80 00	Fire and Smoke Protection
Section 07 84 00	Firestopping
Section 26 01 00	Operation & Maintenance of Electrical Systems
Section 27 20 00	Data Communications

CLASSIFIED C UL US

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

Hilti Inc. CFP-ES Endo-Shield

Intertek
C #: 5020624

CERTIFIED TO:
ASTM E1725
UL 1489

Refer to Intertek's Directory of Building Products for detailed information

CERTIFICATE OF COMPLIANCE

Certificate Number	R13240
Report Reference	R13240-20210714
Date	2021-July-23

Issued to: HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC
7250 Dallas Pky, Legacy Tower Suite 1000
Plano TX, 75024 US

This is to certify that representative samples of FILL, VOID OR CAVITY MATERIALS

See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 1479, Fire Tests of Penetration Firestops

CAN/ULC S115, Standard Method of Fire Tests of Firestop Systems

Additional Information: See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

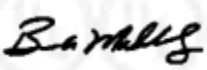
UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number	R13240
Report Reference	R13240-20210714
Date	2021-July-23

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

CFP-ES Endo-Shield for use in specific Through Penetration Firestop Systems published in the Fire Resistance Directory.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

CFP-ES Endo-Shield

Safety Data Sheet

A safety data sheet is not required for this product. This Product Safety Information Sheet has been created on a voluntary basis

Issue date: 07/21/2021 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form	Article
Product name	CFP-ES Endo-Shield
Product code	BU Fire Protection_Safety Information

1.2. Recommended use and restrictions on use

Use of the substance/mixture	Passive fire protection system

1.3. Supplier

Supplier
Hilti, Inc.
Legacy Tower, Suite 1000
7250 Dallas Parkway
Plano, TX 75024 - USA
T +1 9724035800
1-800-879-8000 toll free - F +1 918 254 0522

Department issuing data specification sheet
Hilti AG
Feldkircherstraße 100
Schaan, 9494 - Liechtenstein
T +423 234 2111
chemicals.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Chem-Trec Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada) Tel.: 703 527 3887 (Other countries) +1 918 8723000 1-800-879-8000 toll free

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labelling

No labelling applicable

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification : A Safety Data Sheet is not required due to the classification of these products as “articles” according to Regulation (EC) No. 1907/2006 of 18 December 2006 (EU) / 29CFR 1910.1200 (U.S.A.). Consequently, these products are exempted from CLP / OSHA Labeling and SDS requirements.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Alkaline earth silicate	(CAS-No.) 436083-99-7	95 – 98	Not classified

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	Never give anything by mouth to an unconscious person.
First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing. Allow the victim to rest.
First-aid measures after skin contact	Wash skin with plenty of water. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	Rinse cautiously with water for several minutes. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	Rinse mouth out with water. Drink plenty of water.

4.2. Most important symptoms and effects (acute and delayed)

Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met.
Symptoms/effects	Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/effects after skin contact	Product dust may cause mechanical irritation to the skin and mucous membranes.
Symptoms/effects after eye contact	Dust from this product may cause eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	The product itself does not burn. Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	Prevent fire fighting water from entering the environment.
Protection during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	Wear recommended personal protective equipment.
Emergency procedures	Evacuate unnecessary personnel.

Measures in case of dust release	Wear suitable respiratory protection.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Minimise generation of dust.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Avoid dust formation. Do not breathe dust. Avoid contact with skin and eyes. Limit use of power tools unless in conjunction with local exhaust ventilation. Use hand tools whenever possible.
Hygiene measures	Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Keep container closed when not in use. Avoid creating or spreading dust. Store in a dry place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

CFP-ES Endo-Shield
No additional information available

Alkaline earth silicate (436083-99-7)
No additional information available

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Protective clothing. Gloves. Safety glasses.

Hand protection:

Wear protective gloves.

Type	Material	Permeation	Thickness (mm)	Penetration
Reusable gloves				

Eye protection:

Chemical goggles or safety glasses. EN 166

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of dust formation use respirator with filter: Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):

Other information:

Limit use of power tools unless in conjunction with local exhaust ventilation. Use hand tools whenever possible.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Colour	white
Odour	odourless
Odour threshold	No data available
pH	No data available
Melting point	1500 – 1550 °C
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Relative evaporation rate (butylacetate=1)	No data available
Flammability (solid, gas)	No data available
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	2.6
Solubility	Insoluble.
Partition coefficient n-octanol/water (Log Pow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive limits	No data available
Explosive properties	No data available
Oxidising properties	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under normal use.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified
Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Viscosity, kinematic	
Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met.
Symptoms/effects	Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/effects after skin contact	Product dust may cause mechanical irritation to the skin and mucous membranes.
Symptoms/effects after eye contact	Dust from this product may cause eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Alkaline earth silicate (436083-99-7)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Alkaline earth silicate (436083-99-7)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID /

ADR	IMDG	IATA	RID
14.1. UN number			
Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available			

14.6. Special precautions for user

Overland transport
Not applicable

Transport by sea
Not applicable

Air transport
Not applicable

Rail transport
Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Alkaline earth silicate	CAS-No. 436083-99-7	95 – 98%

15.2. International regulations

CANADA

Alkaline earth silicate (436083-99-7)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

A safety data sheet is not required for this product. This Product Safety Information Sheet has been created on a voluntary basis

SDS_US_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Flexible Firestop Sealant (CP 606)

Product description

- An acrylic based firestop sealant that provides movement capability in fire rated joints and seals through-penetrations applications

Product features

- Silicone free
- Halogen, asbestos and solvent free
- Paintable
- Tested up to 33% movement with 500 cycles in accordance to UL 2079 and ASTM 1966
- Smoke and fume resistant
- Easy clean up with water
- Single component systems available
- Meets LEED™ requirements for indoor environmental quality credit 4.1 Low Emitting Materials, Sealants and Adhesives and 4.2 Paints and Coatings

Areas of application

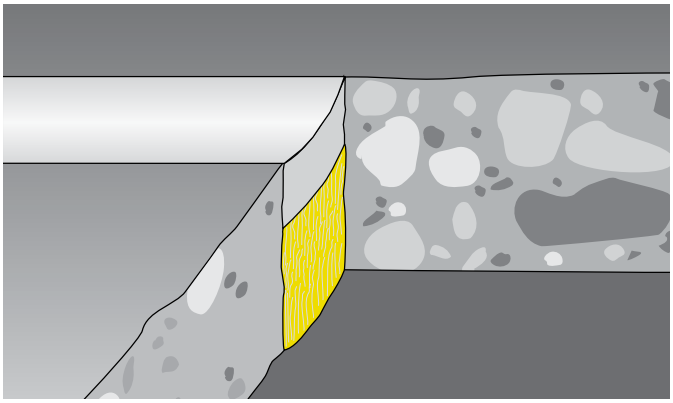
- Sealing construction/expansion joints
- Top-of-wall joints
- Metal pipes
- Cable bundles
- HVAC penetrations

For use with

- Various base materials such as masonry, concrete, gypsum, etc.
- Wall and floor assemblies rated up to 3 hours

Examples

- Where a gypsum wall assembly meets the underside of a metal or concrete deck
- Sealing expansion joints to impede the passage of fire, smoke and toxic fumes
- Sealing around HVAC penetrations through fire-rated assemblies



Technical Data*	CP 606
Chemical basis	Acrylic based firestop sealant
Color	Available in red, white and gray
Application temperature	40°F to 104°F (5°C to 40°C)
Skin-forming time	Approx. 15 min
Curing time	Approx. 3 mm / 3 days
Average volume shrinkage (ASTM C1241)	22.2%
Movement capability	Approx. 10%
Temperature resistance	–22°F to 176°F (–30°C to 80°C)
Surface burning characteristics (ASTM E 84-96)	Flame Spread: 10 Smoke Development: 0
Sound transmission classification (ASTM E 90-99)	56 (Relates to specific construction)
Tested in accordance with	• UL 2079 • ASTM E 814 • ASTM E 1966 • ASTM E 84 • UL 1479 • 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 AND
JOINT SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
66Y7

FM APPROVED

Installation instructions for CP 606

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
- The use of backing material is recommended to control the sealant depth and help ensure assembly seal is complete

Opening

1. Clean the opening. Surfaces to which CP 606 will be applied should be cleaned of loose debris, dirt, oil, wax and grease. The surface should be moisture and frost free.

Application of firestop

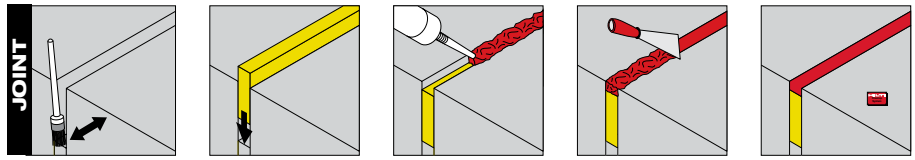
2. Insert fill of mineral wool or backer (as required).
3. Apply firestop over backer.
4. Smooth firestop sealant with a trowel before the skin forms. Once cured, CP 606 can only be removed mechanically.
5. For maintenance reasons, a penetration seal can be permanently marked with an identification plate and fastened in a visible position next to the seal.

Not for use

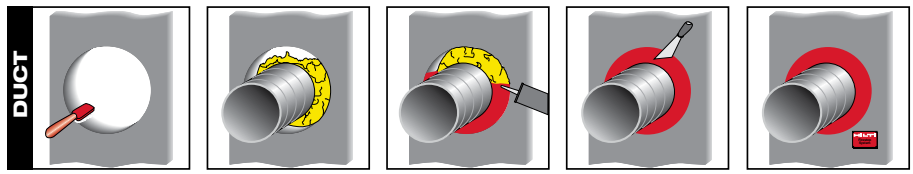
- On areas immersed in water

Storage

- Store only in the original packaging in a location protected from moisture at a temperature of 40°F to 77°F (5°C to 25°C)
- Observe expiration date on package



1. Clean opening | 2. Insert backing material compressed per UL System | 3. Apply CP 606 | 4. Smooth CP 606 | 5. Fasten identification plate (if required)



1. Clean opening | 2. Insert backing material | 3. Apply CP 606 | 4. Smooth CP 606 | 5. Fasten identification plate (if required)

CERTIFICATE OF COMPLIANCE

Certificate Number	20160930-R13240
Report Reference	R13240
Issue Date	2016-September-30
Issued to:	Hilti Construction Chemicals, Div of Hilti Inc. 5400 S 122nd East Ave Tulsa, OK 74146
This is to certify that representative samples of	Fill, Void or Cavity Materials Fill, Void or Cavity Materials Certified for Canada CP 606 Sealant for use in Through-Penetration Firestop, Joint in wall and partition Systems as currently decribed in the UL Fire Resistance Directory and in the Products Certified for Canada Directory. Have been investigated by UL 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, "Tests for Fire Resistance of Building Joint Systems," CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

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

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at http://ul.com/aboutul/locations/

Hilti Firestop Acrylic Sealant CFS-S ACR; CP 606

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 01/07/2016 Revision date: 01/07/2016 Supersedes: 01/07/2016 Version: 4.2

SECTION 1: Identification

1.1. Identification

Product form	Mixture
Name	Hilti Firestop Acrylic Sealant CFS-S ACR; CP 606
Product code	BU Chemicals
Chemical structure	

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Hilti, Inc.
Legacy Tower, Suite 1000
75024 Plano - USA
T +1 9724035800
1-800-879-8000 toll free - F +1 918 254 0522

Supplier
Hilti, Inc.
Legacy Tower, Suite 1000
75024 Plano - USA
T +1 9724035800
1-800-879-8000 toll free - F +1 918 254 0522

Department issuing data specification sheet
Hilti AG
Feldkircherstraße 100
9494 Schaan - Liechtenstein
T +423 234 2111
chemicals.hse@hilti.com

1.4. Emergency telephone number

Emergency number

Chem-Trec
Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
Tel.: 703 527 3887 (Other countries)

+1 918 8723000
1-800-879-8000 toll free

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	Get medical advice/attention if you feel unwell.
First-aid measures after skin contact	Wash skin with plenty of water. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Protection during firefighting	Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

Protective equipment	For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Recover mechanically the product.

6.4. Reference to other sections

For further information refer to section 13.

Hilti Firestop Acrylic Sealant CFS-S ACR; CP 606

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Wear personal protective equipment.
Hygiene measures	Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Keep cool. Store in a dry place.
Storage temperature	41 - 77 °F

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment	Protective clothing. Safety glasses. Gloves.

Hand protection	Protective gloves. EN 374.
Eye protection	Safety glasses. EN 166. EN 170.
Skin and body protection	Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Pasty.
Colour	red white Grey
Odour	characteristic
Odour threshold	Not determined
pH	≈ 9 Not applicable
Melting point	Not applicable
Freezing point	No data available
Boiling point	No data available
Flash point	Not applicable
Relative evaporation rate (butylacetate=1)	No data available
Flammability (solid, gas)	No data available
Explosive limits	No data available
Explosive properties	No data available
Oxidising properties	No data available
Vapour pressure	No data available
Relative density	No data available
Relative vapour density at 20 °C	No data available
Density	1.6 g/cm³
Molecular mass	Not determined
Solubility	No data available

Log Pow	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Not classified
Skin corrosion/irritation	Not classified pH: ≈ 9 Not applicable
Serious eye damage/irritation	Not classified pH: ≈ 9 Not applicable
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified
Aspiration hazard	Not classified

Hilti Firestop Acrylic Sealant CFS-S ACR; CP 606

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming	No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations	Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (ADR)	Not applicable
Proper Shipping Name (IMDG)	Not applicable
Proper Shipping Name (IATA)	Not applicable
Proper Shipping Name (ADN)	Not applicable
Proper Shipping Name (RID)	Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	Not applicable

IMDG

Transport hazard class(es) (IMDG)	Not applicable

IATA

Transport hazard class(es) (IATA)	Not applicable

ADN

Transport hazard class(es) (ADN)	Not applicable

RID

Transport hazard class(es) (RID)	Not applicable

14.4. Packing group

Packing group (ADR)	Not applicable
Packing group (IMDG)	Not applicable
Packing group (IATA)	Not applicable
Packing group (ADN)	Not applicable
Packing group (RID)	Not applicable

14.5. Environmental hazards

Dangerous for the environment	No
Marine pollutant	No
Other information	No supplementary information available

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Inland waterway transport

Carriage prohibited (ADN)	No
Not subject to ADN	No

- Rail transport

Carriage prohibited (RID)	No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. US Federal regulations

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Hilti Firestop Acrylic Sealant CFS-S ACR; CP 606	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date	01/07/2016
HMIS III Rating	
Health	0 Minimal Hazard - No significant risk to health
Flammability	0 Minimal Hazard - Materials that will not burn
Physical	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal Protection	B
	B - Safety glasses, Gloves

SDS_US_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

February 26, 2010

To Whom It May Concern:

Re: Hilti CP 606 Flexible Firestop – LEEDs Info.

The Hilti CP 606 Flexible Firestop Sealant is manufactured in Germany.

The CP 606 pail is made of polyethylene and can be completely recycled. There is no post-consumer or post-industrial content in CP 606 and it cannot be recycled. The CP 606 does not contain any Rapidly Renewable Materials. The VOC content for CP 606 is 71.0 grams/liter.

CP 606 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
Safety/Environmental Manager
Hilti Inc.
918 872 3704
jerry.metcalf@hilti.com

Rev. Date: 2/26/10

High-performance intumescent firestop sealant FS-ONE MAX

Applications

- For effectively sealing most common through penetrations in a variety of base materials
- For use on concrete, masonry and drywall
- Mixed and multiple penetrations
- Metal pipe penetrations: copper, steel and EMT
- Insulated metal pipe penetrations: steel and copper
- Plastic pipe penetrations: closed or vented

Advantages

- US-produced: “Buy American” compliant
- One product for a variety of common through penetrations
- Cost-effective, easy-to-use solution
- Water-based and paintable
- Industry-leading VOC results
- Ethylene glycol-free

Chemical resistant

Mold and mildew resistant

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

Technical data	
Chemical basis	Water-based acrylic dispersion
Approx. Density	84.3 lb/ft³
Color	Red
Application temperature range	41 - 104 °F
Approx. cure time[1)]	4 mm/3 days
Temperature resistance range	-4 to 212 °F
Mold and mildew performance	Class 0 (ASTM G21-96)
Mold and mildew resistance	Yes
Surface burning characteristics UL 723 (ASTM E84)	Flame spread: 0 Smoke development: 10
Tested in accordance with	UL 1479, ASTM E814, ASTM E84, CAN/ ULC-S115, ASTM G21, ASTM E90
California State fire marshal approval	CSFM Listing 4485-1200:0108 for FS-ONE MAX Intumescent Firestop Sealant
Expansion ratio (unrestricted, up to)	1:5

[1)] at 75°F/24°C, 50% relative humidity

Order Designation	Package Content	Item number
FS-ONE MAX 20oz foil (3 case + disp)	1x Foil pack dispenser manual CS 270-P1, 75x Firestop sealant FS-ONE MAX 20 oz foil	**3530252**
FS-ONE MAX 10oz tube (1 case)	12x Firestop sealant FS-ONE MAX 10 oz cartridge	**3530249**
FS-ONE MAX 5 gallon (18 pails)	18x Firestop sealant FS-ONE MAX 5 gallon pail	**3530263**
FS-ONE MAX 20oz foil (1 case)	25x Firestop sealant FS-ONE MAX 20 oz foil	**3530250**
FS-ONE MAX 20oz foil (3 cases)	75x Firestop sealant FS-ONE MAX 20 oz foil	**3530251**
FS-ONE MAX 20oz Foil-Pallet	600x FSONE-MAX 20 oz foil, 290x Bulk Shipping Condition	**3534713**
FS-ONE MAX 10 oz cartridge		**2101531**
FS-ONE MAX 5 gallon pail		**2101533**

CERTIFICATE OF COMPLIANCE

Certificate Number	20150108-R13240
Report Reference	R13240
Issue Date	2015-January-08

Issued to: Hilti Construction Chemicals, Div of Hilti Inc.
5400 S 122nd East Ave
Tulsa, OK 74146

This is to certify that representative samples of Fill, Void or Cavity Materials
Fill, Void or Cavity Materials Certified for Canada
FS-ONE MAX Intumescent Sealant for use in Through-Penetration Firestop and Joint Systems in the UL Fire Resistance Directory and in the Products Certified for Canada Directory.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 1479, "Fire Tests of Through-Penetration Firestops," – Edition 4
ANSI/UL 2079, "Tests for Fire Resistance of Building Joint Systems," – Edition 4 – Revision Date 2014/12/17
CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems." – Edition 4 – Issue Date 2011/06/01

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

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: 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.

William R. Carney, Director, North American Certification Programs

UL LLC

FS-ONE MAX; CFS-FIL

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 07/04/2017 Revision date: 07/04/2017 Supersedes: 12/17/2015 Version: 1.3

SECTION 1: Identification

1.1. Identification

Product form	Mixture
Name	FS-ONE MAX; CFS-FIL
Product code	BU Fire Protection
Chemical structure	

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Hilti, Inc.
Legacy Tower, Suite 1000
75024 Plano - USA
T +1 9724035800
1-800-879-8000 toll free - F +1 918 254 0522

Supplier
Hilti, Inc.
Legacy Tower, Suite 1000
75024 Plano - USA
T +1 9724035800
1-800-879-8000 toll free - F +1 918 254 0522

Department issuing data specification sheet
Hilti AG
Feldkircherstraße 100
9494 Schaan - Liechtenstein
T +423 234 2111
chemicals.hse@hilti.com

1.4. Emergency telephone number

Emergency number

Chem-Trec
Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
Tel.: 703 527 3887 (Other countries)

+1 918 8723000
1-800-879-8000 toll free

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Quartz	(CAS No) 14808-60-7	2.5 - 5	Carc. 1A, H350

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Get medical advice/attention if you feel unwell.

First-aid measures after skin contact: Wash skin with plenty of water. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion: Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity: The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Protection during firefighting: Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

Protective equipment: For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Mechanically recover the product.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Wear personal protective equipment.
Hygiene measures	Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Keep cool. Store in a dry place.
Storage temperature	41 - 77 °F

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Quartz (14808-60-7)		
OSHA	Remark (OSHA)	(3) See Table Z-3.

Additional information: The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product

8.2. Exposure controls

Personal protective equipment: Protective clothing. Safety glasses. Gloves.

Hand protection	Protective gloves. EN 374.
Eye protection	Chemical goggles or safety glasses.
Skin and body protection	Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Pasty.
Colour	red
Odour	characteristic
Odour threshold	Not determined
pH	≈ 7.85
Melting point	Not applicable
Freezing point	No data available
Boiling point	No data available
Flash point	Not applicable
Relative evaporation rate (butylacetate=1)	No data available
Flammability (solid, gas)	No data available
Explosive limits	No data available
Explosive properties	No data available
Oxidising properties	No data available
Vapour pressure	No data available
Relative density	No data available
Relative vapour density at 20 °C	No data available

Density	≈ 1.35 g/cm³
Molecular mass	Not determined
Solubility	No data available
Log Pow	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available

9.2. Other information

VOC content	9 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Not classified
Skin corrosion/irritation	Not classified pH: ≈ 7.85
Serious eye damage/irritation	Not classified pH: ≈ 7.85
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified

Quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans

Reproductive toxicity	Not classified
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified

Aspiration hazard	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming	No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations	Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	RID
14.1. UN number			
Not regulated for transport			
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Rail transport

Carriage prohibited (RID) No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

FS-ONE MAX; CFS-FIL	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

National regulations

Quartz (14808-60-7)
Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date 07/04/2017

Full text of H-statements:

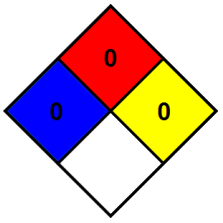
H350	May cause cancer

FS-ONE MAX; CFS-FIL

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard	0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating	
Health	0 Minimal Hazard - No significant risk to health
Flammability	0 Minimal Hazard - Materials that will not burn
Physical	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	B
	B - Safety glasses, Gloves

SDS_US_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

June 17, 2019

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 recycled content in FS-ONE MAX and it cannot be recycled. The VOC content for FS-ONE MAX is 9 grams/liters.

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: 5/30/19

The manufacturing plant location on this certificate has been provided for LEED 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 LEED certificate.