Built-in cover page

078400-1.4.B-0:Firestopping - Schedules

Status	**Open** Submitted
Spec section	078400 FIRESTOPPING
Manager	**Ryan Schelin** (Je Dunn Construction Company (013735))
Responsible contractor	**David Hudnall** (Barrier Technologies Llc (074122))
Reviewers step 01	**Ryan Schelin** (Je Dunn Construction Company (013735))

515 E. Locust St, Suite 301
Des Moines, IA 50309
tel 515.698.4400
fax 515.288.3049

JE DUNN CONSTRUCTION

Reviewed by JE Dunn: Ryan Schelin
Date: 12/23/2025 1:48:20 PM
Job: LSMC ED Expansion
Submittal ID: 078400-001
Bid Package: 100% CD's
Comments: Reviewed - Submitted for Approval

TABLE OF CONTENTS
078400 Firestopping Package 001

Devenney GROUP

- [x] Reviewed
- [ ] Furnish as Corrected
- [ ] Revise and Resubmit
- [ ] Rejected
- [ ] Submit Specified Item
- [ ] Not Reviewed by General Contractor
- [ ] Review Not Required by the Contract Documents

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 in a safe and satisfactory manner

Signed jvelazquez

Date 12/29/2025

Include as part of FIRE PROTECTION ASSEMBLIES - UL DETAILS deferred submittal.

P: 913.905.2695
F: 913.254.3120
W: www.Barrier-Technologies.com

TRANSMITTAL

TO: JE Dunn Construction

PROJECT: HCA LSMC ED Reno

RE: 078400 - Firestopping

PAGE	SECTION	DESCRIPTION
1	-	Cover Page
2	078400	Hilti FS-ONE - PDS
3-12	078400	Hilti FS-ONE - SDS
13	078400	Hilti FS-ONE – Certificate of compliance
14	078400	Hilti FS-ONE - Manufacturer's instructions
15-24	078400	UL Systems
25-26	078400	Roxul rockwool - PDS

COMMENTS:

Should you have any questions, please contact us at your convenience.

David Hudnall
Barrier Technologies
816.288.9892
www.Barrier-Technologies.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 for use

- 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

Installation instructions

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

Technical Data*

Chemical basis	Water-based acrylic dispersion
Approx. Density	84.3 lb/ft^3
Color	Red
Approx. cure time[1)]	2mm / 3 days
Application temperature range[2)]	35°F to 104° (1.5C to 40°C)
Temperature resistance range	-4°F to 212°F (-20°C to 100°C)
Storage Temperature	35°F to 77F (1.5°C to 25°C)
Application temperature	35°F to 104° (1.5C to 40°C)
Tack free time	20mins (@ 73°F / 50% rel. humidity)
Shelf life	18 months
Temperature resistance range	-4°F to 212°F
Mold and mildew performance	Class 0 (ASTM G21-13)
Mold and mildew resistant	Yes
Expansion ratio (unrestricted, up to)	1:5
Paintable	Yes
Chemical resistance	Yes
Electrical resistance	Yes
FBC compatible (Lubrizol)	Yes
Intumescent	Yes
W-rating	Yes
M-rated	Yes
LEED VOC (input)	9 g/L
LEED V4 Compliant	Yes (CDPH v1.2-2017)
STC rating (ASTM E90)	62 (relates to specific construction)
Movement	±7.5%
Surface burning characteristics (ASTM E 84-14)	Flame Spread: 0 Smoke Development: 10
California State Fire Marshal approval	CSFM Listing 4485-1200:0108 for FS-ONE MAX Intumescent Firestop Sealant
Tested in accordance with	ASTM G21, ASTM E 90, CAN/ULC-S115, UL 1479, ASTM E 814 , ASTM E84

Order Information

Designation	Qty per package	Item number
FS-ONE MAX 10oz tube (1 case)	12x Firestop sealant FS-ONE MAX 10 oz cartridge	3530249
FS-ONE MAX 20oz foil (1 case)	25x Firestop sealant FS-ONE MAX 20 oz foil	3530250
FS-ONE MAX 10 oz cartridge	1x Firestop sealant FS-ONE MAX 10 oz cartridge	2101531
FS-ONE MAX 5 gallon pail	1x Firestop sealant FS-ONE MAX 5 gallon pail	2101533

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

Intertek

FM APPROVED

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

Chemical resistant

Mold and mildew resistant

W rated SYSTEMS AVAILABLE

BUY AMERICA ACT COMPLIANT

Volume per unit:
- Caulk tube = 10.5 fl. oz (18.9in^3)
- Foil = 600ml (36.4in^3)
- Pail = 5gal (1,155in^3)

1) At 75°F (24°C) and 50% relative humidity

2) For ambient and surface temperatures between 10°F (-12°C) and 35°F (1.5°C), the following conditions must apply:
- Substrate surfaces are clean and dry (e.g. free of dust, rust, grease, oil, dew, frost, ice, moisture, etc);
- Product maintained above 50°F (10°C) for a minimum of 24 hours prior to application;
- Product will not cure at ambient temperatures below 32°F / 0°C

Hilti Firestop
Saving lives
through innovation
and education

FS-ONE MAX / CFS-FIL

Safety Data Sheet

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

Revision date: 10/30/2024 Issue date: 10/30/2024 Supersedes: 11/3/2022 Version: 1.7

SECTION 1: Identification

1.1. Identification

Product form	Mixture
Trade name	FS-ONE MAX / CFS-FIL
Product code	BU Fire Protection

1.2. Recommended use and restrictions on use

Use of the substance/mixture	Firestop intumescent sealant
Recommended use	Adhesives, sealants

1.3. Supplier

Supplier

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

Department issuing data specification sheet

Hilti AG
Feldkircherstraße 100
FL 9494 Schaan
Liechtenstein
T +423 234 2111
product.compliance-fire.protection@hilti.com

1.4. Emergency telephone number

Emergency number	Emergency CONTACT (24-Hour-Number) GBK/Infotrac ID 101022 (USA domestic) 1 800 535 5053 or international (001) 352 323 3500

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

No additional information available

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
Quartz (SiO2)	CAS-No.: 14808-60-7	2.5 – 5	Carc. 1A, H350 STOT RE 1, H372

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. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Get medical advice/attention if you feel unwell. Allow affected person to breathe fresh air. 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. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

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. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion: Get medical advice/attention if you feel unwell. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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.

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: Water spray. Dry powder. Foam. Carbon dioxide. Sand.

Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire: Carbon dioxide. Carbon monoxide.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

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

Emergency procedures	Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	For further information refer to section 8: "Exposure controls/personal protection". Equip cleanup crew with proper protection.
Emergency procedures	Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Mechanically recover the product. On land, sweep or shovel into suitable containers. Minimise generation of dust. Store away from other materials.

6.4. Reference to other sections

For further information refer to section 13. See Section 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.
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. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature	41 – 77 °F

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

FS-ONE MAX / CFS-FIL
No additional information available

Quartz (SiO2) (14808-60-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Silica crystaline - quartz
ACGIH OEL TWA	0.025 mg/m³ (R - Respirable particulate matter)
Remark (ACGIH)	TLV® Basis: Pulm fibrosis; lung cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2023

Quartz (SiO2) (14808-60-7)	
USA - OSHA - Occupational Exposure Limits	
Local name	Silica, crystalline quartz, respirable dust
Remark (OSHA)	(3) See Table Z-3.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts

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

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

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

Hand protection:				
Wear suitable gloves tested to EN374. Suitable for short-term work or as a splash guard: Nitrile rubber gloves (> 0.1 mm). In case of permanent product contact:				
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	>0,4	

Eye protection:
Chemical goggles or safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
No respiratory protection needed under normal use conditions

Personal protective equipment symbol(s):

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
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)	Not applicable. Non flammable.
Vapour pressure	No data available
Relative vapour density at 20°C	No data available
Relative density	No data available
Density	≈ 1.35 g/cm³
Molecular mass	Not determined
Solubility	No data available
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

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. Not established.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

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

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 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 (SiO2) (14808-60-7)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	Known Human Carcinogens

Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified

Quartz (SiO2) (14808-60-7)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard	Not classified
Viscosity, kinematic	No data available
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.

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

FS-ONE MAX / CFS-FIL	
Persistence and degradability	Not established.

Quartz (SiO2) (14808-60-7)	
Not rapidly degradable	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

FS-ONE MAX / CFS-FIL	
Bioaccumulative potential	Not established.

Quartz (SiO2) (14808-60-7)	
Bioaccumulative potential	No bioaccumulation data available.

12.4. Mobility in soil

Quartz (SiO2) (14808-60-7)	
Surface tension	No data available in the literature
Ecology - soil	Low potential for mobility in soil.

12.5. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods: Dispose in a safe manner in accordance with local/national regulations.
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.
Ecological information: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. 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			
Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No
No supplementary information available			

14.6. Special precautions for user

DOT
No data available

TDG
No data available

IMDG
No data available

IATA
No data available

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 present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

Quartz (SiO2) (14808-60-7)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on Thailand Existing Chemicals Inventory (DIW)

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

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

Revision date	10/30/2024
Data sources	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Other information	None.

Full text of H-statements	
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

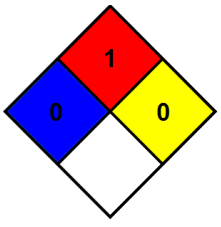
Abbreviations and acronyms	
CAS-No.	Chemical Abstract Service number
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration

Abbreviations and acronyms	
ED	Endocrine disrupting properties
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
IOELV	Indicative Occupational Exposure Limit Value
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
N.O.S.	Not Otherwise Specified
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class
VOC	Volatile Organic Compounds
SDS	Safety Data Sheet
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
PNEC	Predicted No-Effect Concentration
PBT	Persistent Bioaccumulative Toxic
OEL	Occupational Exposure Limit
OECD	Organisation for Economic Co-operation and Development
COD	Chemical oxygen demand (COD)
ThOD	Theoretical oxygen demand (ThOD)
TRGS	Technical Rules for Hazardous Substances
TLM	Median Tolerance Limit
STP	Sewage treatment plant

NFPA health hazard — 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard — 1 - Materials that must be preheated before ignition can occur.

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 - Safety glasses, Gloves

Indication of changes:			
Section	**Changed item**	**Change**	**Comments**
			general update

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.

CERTIFICATE OF COMPLIANCE

Certificate Number	20150113-R13240
Report Reference	R13240-20150106
Issue Date	2015-JANUARY-13
Issued to:	HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC 5400 S 122ND EAST AVE, TULSA OK 74146-6007
This is to certify that representative samples of	FILL, VOID OR CAVITY MATERIALS one part sealant designated as FS-ONE MAX Intumescent Sealant for use in through-penetration firestop systems and joint systems
	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 CAN/ULC-S115 - Method of Fire Tests of Firestops 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, Assistant Chief Engineer, Global Inspection and Field Services

UL LLC

FS-ONE MAX

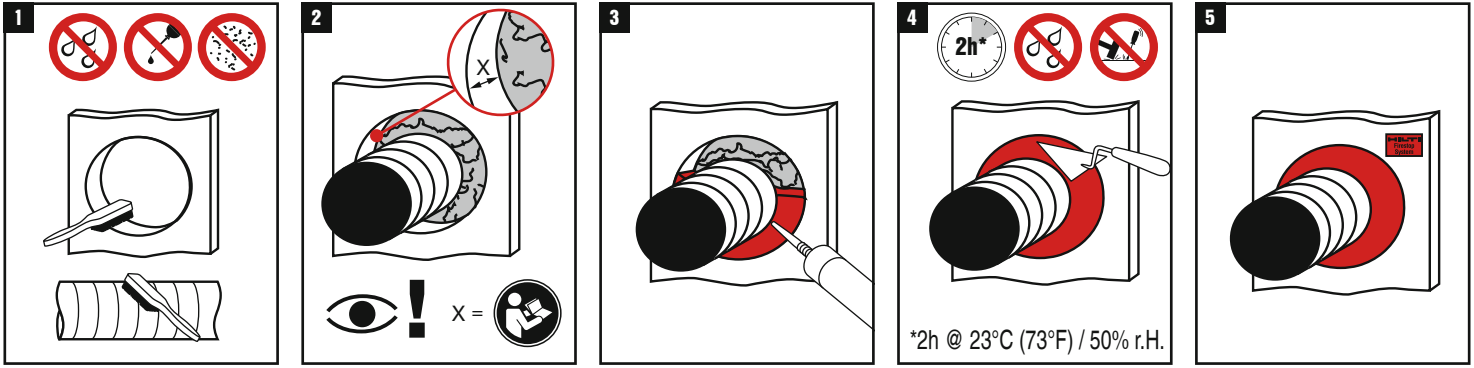
2101774-08.2024

UL: www.hilti.com
cUL: www.hilti.ca
www.hilti.group

en Before handling and for specific application details, refer to Hilti product literature, 3rd party published listings and national approvals. For professional users only.

fr Avant toute utilisation et pour tout détail concernant une application, se référer à la documentation Hilti, à la liste de publications des tierces parties et aux approbations nationales. Seulement pour utilisateurs professionnels.

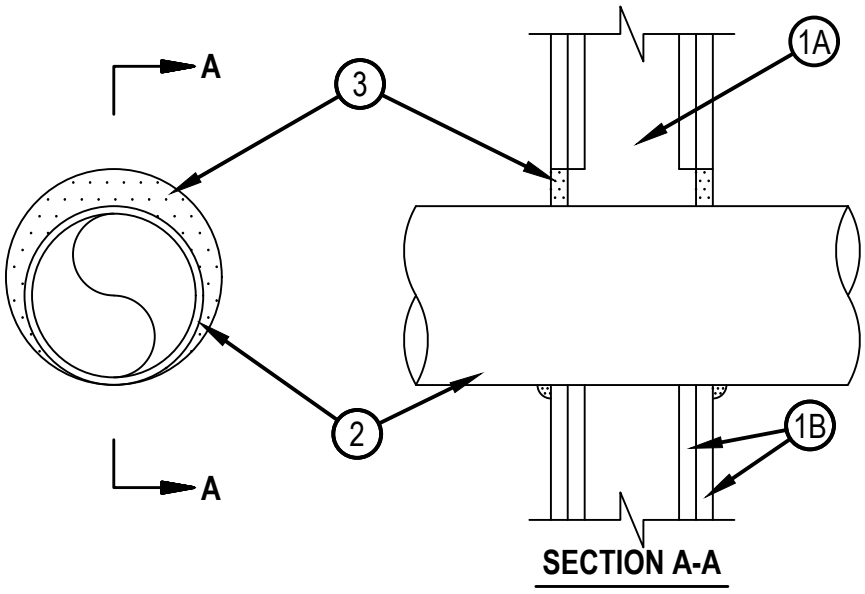
es Antes de usar y para detalles específicos de aplicación, véase la información que acompaña al producto Hilti, el listado publicado por terceros y las aprobaciones nacionales. Solamente para los usuarios profesionales.



System No. W-L-1054

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings —1 and 2 Hr (See Items 1 and 3)	F Ratings — 0, 1 and 2 Hr (See Items 1, 2 and 3)
T Rating — 0 and 1/2 Hr (See Item 2)	FT Rating — 0 Hr
L Rating (Without Movement) at Ambient — Less Than 1 CFM/sq ft	FH Ratings —0, 1 and 2 Hr (See Items 1, 2 and 3)
L Rating (Without Movement) at 400°F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
M Rating (Movement) — See Table 1	
	L Rating at Ambient — Less Than 5.1 L/s/m2
	L Rating at 204°C — Less Than 5.1 L/s/m2



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. For M Rating and items 2F and 2G, steel studs to be min 3-5/8 in. (92 mm) wide. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.

The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly. The M Rating is applicable only to 1 hr rated walls.

System No. W-L-1054

2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space for items 2A to 2E shall be min 0 in. to max 2-1/4 in. (57 mm). These pipes/tubings may be installed with continuous point contact. The annular space for items 2F and 2G shall be min 0 in. to max 1-1/2 in. (38 mm). Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
   C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) . diam steel conduit.
   D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.
   F. Aluminum Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 5 (or heavier) aluminum pipe for use in closed (process or supply) piping systems.
   G. Aluminum Conduit — Nom 2 in. (51 mm) diam (or smaller) aluminum electric metallic tubing (EMT) or rigid aluminum conduit for use in closed (process or supply) piping systems.

   The hourly T Ratings of the firestop system are equal to 0 Hr when items 2A to 2E are used and equal to 1/2 Hr when items 2F and 2G are used. The hourly CAN F and FH Ratings are equal to 0 Hr when items 2F and 2G are used.
3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant
   The M Rating for the firestop system is dependent on the variables as noted in the Table 1 below.

Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F-Rating	L Rating with Movement
Y	2A, 2C*	2 in.	Max 2-1/4 in.	5%	5/8 in.	1 hr	N/A
Z	2A, 2C*	2 in.	2-1/4 in.	0.25 in.	5/8 in.	1 hr	N/A

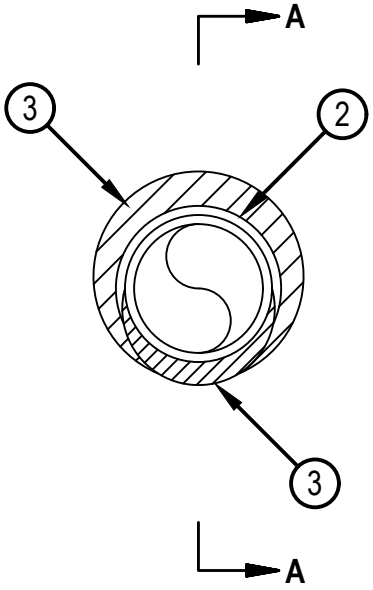
* Rigid steel conduit

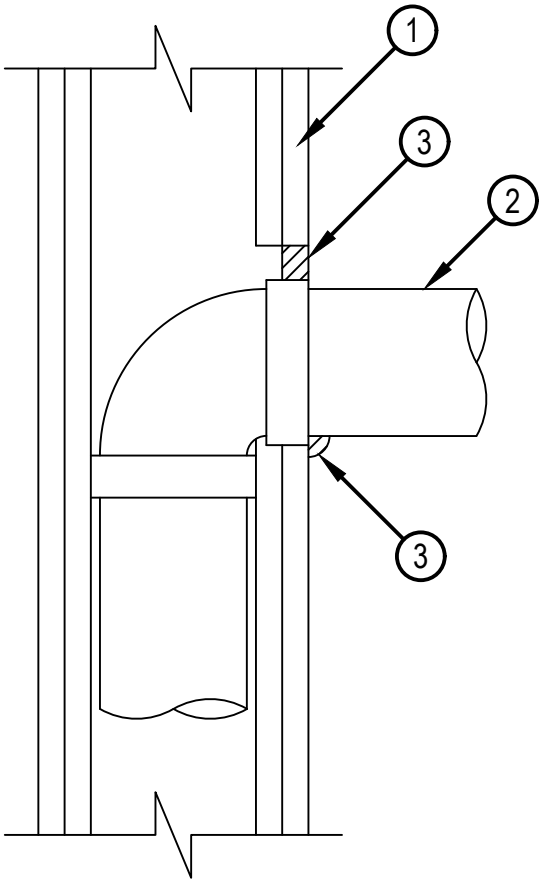
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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

System No. W-L-1410

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





SECTION A-A

System No. W-L-1410

1. Wall Assembly — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — One or two layers of nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. The max diam of opening is dependent upon the type of fill material as shown in Item 3.
   The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly.
2. Through Penetrants — One metallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space is dependent upon the type of fill material as shown in Item 3. Pipe or conduit to be rigidly supported on the penetrated side of the wall assembly. The following types and sizes of metallic pipes or conduits may be used:
   A. Steel pipe — Nom 3 in. (76 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.
   B. Conduit — Nom 3 in. (76 mm) diam (or smaller) steel electrical metallic tubing (EMT), nom 3 in. (76 mm) diam steel conduit or nom 1 in. (25 mm) diam (or smaller) flexible steel conduit.
   C. Copper Tubing — Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tubing.
   D. Copper Pipe — Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe.
   E. Iron Pipe — Nom 3 in. (76 mm) diam (or smaller) cast or ductile iron pipe.
3. Fill, Void or Cavity Material*— Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with surface of wall. Min 1/2 in. (13 mm) diam bead of sealant applied at point contact location.

Type of Fill Material	Max Diameter of Opening, in. (mm)	Min Annular Space, in. (mm)	Max Annular Space, in. (mm)
FS-ONE MAX Intumescent Sealant	6 (152)	0 (0), point contact	2 (51)
CFS-S-SIL GG Sealant	5 (127)	0 (0), point contact	1 (25)
CP601S Elastomeric Sealant	5 (127)	0 (0), point contact	1 (25)
CP 606 Sealant	5 (127)	0 (0), point contact	1 (25)
CP618 Putty	5 (127)	0 (0), point contact	1 (25)

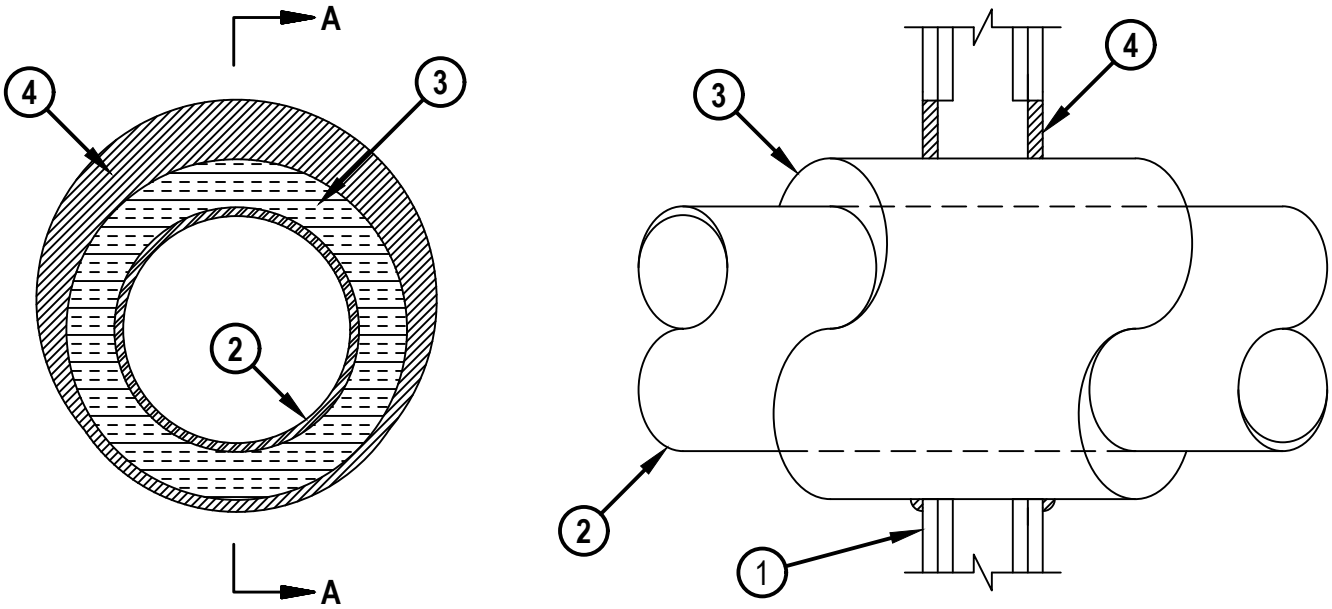
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant, CFS-S-SIL GG Sealant, CP601S Elastomeric Sealant, CP 606 Sealant,or CP618 Putty.

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

System No. W-L-5029

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1, 2 and 3 Hr (See Items 1, 3 and 4)	F Ratings — 1, 2 and 3 Hr (See Items 1, 3 and 4)
T Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)	FT Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
L Rating At Ambient — 4 CFM/Sq Ft	FH Ratings — 1, 2 and 3 Hr (See Items 1, 2 and 4)
L Rating At 400 F — Less Than 1 CFM/Sq Ft	FTH Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
	L Rating At Ambient — 4 CFM/Sq Ft
	L Rating At 400 F — Less Than 1 CFM/Sq Ft



SECTION A-A

1. Wall Assembly — The 1, 2 or 3 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide for 1 and 2 hr F and FH rating and 3-1/2 in. (89 mm) wide for 3 hr F and FH rating and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — Min 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 18-5/8 in. (473 mm). The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
2. Through Penetrants — One metallic pipe or tubing to be installed within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:
   A. Steel Pipe — Nom 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 Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper tube shall not exceed 4 in. (102 mm).
   D. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper pipe shall not exceed 4 in. (102 mm).

System No. W-L-5029

3. Pipe Covering* — Nom 1, 1-1/2 or 2 in. (25, 38 or 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m3) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. For 1 and 2 hr F and FH Ratings, the annular space between insulated penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. (48 mm). For 3 hr F and FH Ratings, the annular space shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm).
   See Pipe and Equipment Covering — Materials (BRGU) category in the Building Material Directory for the 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.
   The hourly T, FT, FTH Ratings of the firestop system are 1/2 hr for 1 hr rated walls and 1 hr for 2 hr rated walls. For 3 hr rated walls, the hourly T, FT and FTH Ratings when steel and iron pipes are used are 1 hr. For 3 hr rated walls, the hourly T, FT and FTH Ratings when copper penetrants are used are 1-1/4 hr for 2 in. (51 mm) thick pipe covering and 0 hr for pipe covering thickness less than 2 in. (51 mm).

3A. Pipe Covering* — (Not Shown) — As an alternate to Item 3, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf) 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. When the alternate pipe covering is used, the T and FT Rating shall be as specified in item 3 above.
   See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

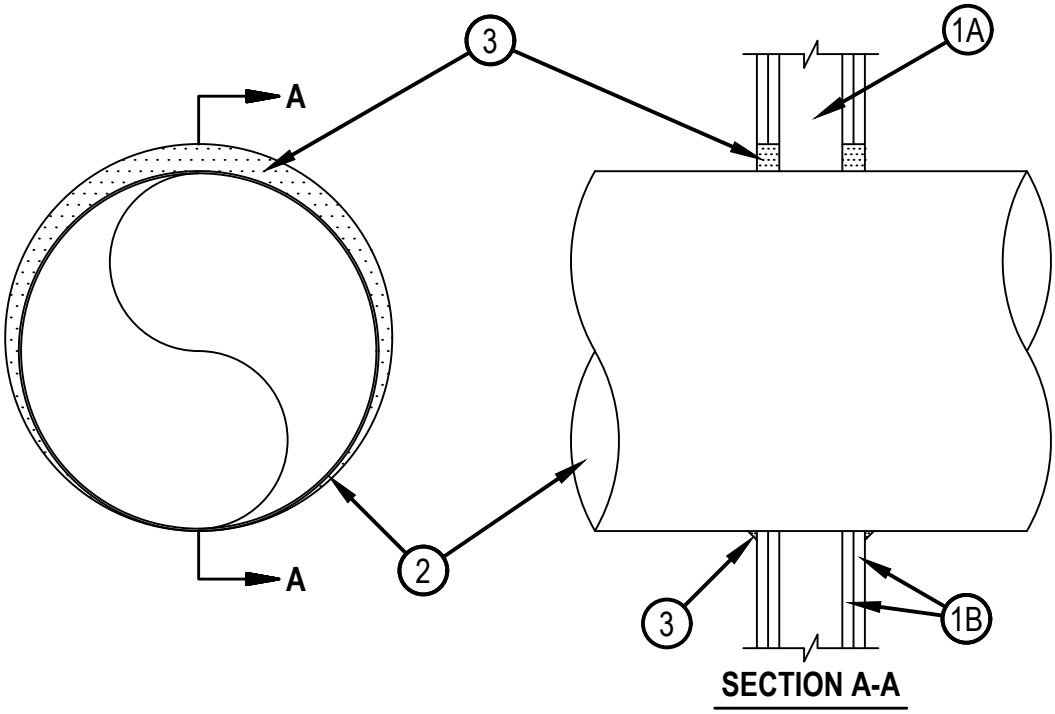
4. Fill, Void or Cavity Material* — Sealant — For 1 and 2 hr F and FH Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 3 hr F and FH Rating, min 1 in. (25 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between pipe covering and gypsum board, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe covering/gypsum board interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

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

System No. W-L-7042

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Items 1 and 3)	F Ratings - 1 and 2 Hr (See Items 1 and 3)
T Rating - 0 Hr	FT Rating - 0 Hr
	FH Ratings - 1 and 2 Hr (See Items 1 and 3)
	FTH Rating - 0 Hr



SECTION A-A

System No. W-L-7042

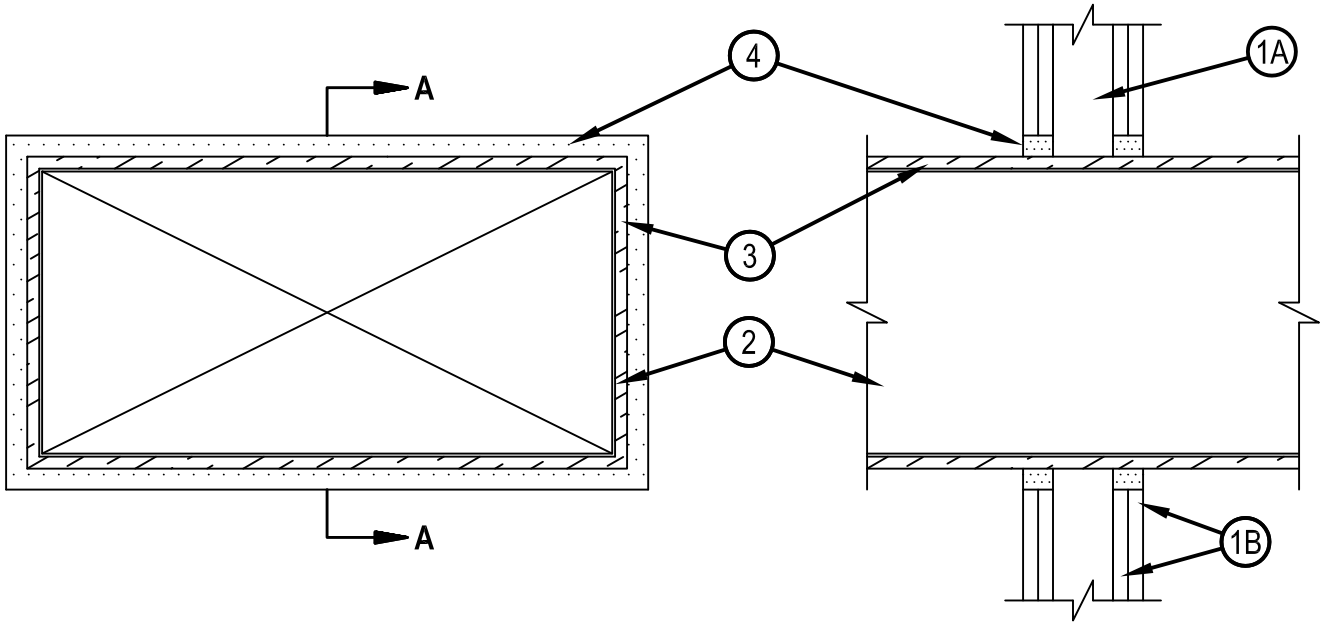
1. Wall Assembly — The 1 or 2 hr fire rated wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features.
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced 24 in. (610 mm) OC. Additional framing members shall be used to completely frame the opening for all ducts greater than 20 in. (502 mm) diam.
   B. Gypsum Board* — For 1 hr assembly, one layer of min 5/8 in. (16 mm) thick wallboard as required in the individual Wall and Partition Design. For 2 hr assembly, two layers of min 5/8 in. (16 mm) thick wallboard as required in the individual Wall and Partition Design. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls and 25-1/2 in. (648 mm) for steel stud walls.
   The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
2. Through Penetrant — Galv steel duct to be installed concentrically or eccentrically within the firestop system. The annular space between the duct and periphery of opening shall be 0 in. (0 mm, point contact) and max 1-1/2 in. (64 mm) Duct to be rigidly supported on both sides of wall assembly.
   A. Spiral Wound HVAC Duct — Nom 24 in. (610 mm) diam (or smaller) No. 28 MSG (or heavier) galv steel spriral wound duct.
   B. Sheet Metal Duct — Nom 12 in. (305 mm) diam (or smaller) No. 28 MSG (or heavier) galv sheet steel duct.
3. Fill, Void or Cavity Material*—Sealant — Min 5/8 in. (16 mm) and 1-1/4 in. (32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall assembly for 1 and 2 hr F Ratings, respectively. When FS-ONE Max is used, min 5/8 in. (16mm) thickness for both 1 and 2 hr F Ratings. At the point contact location between duct and wallboard, a min 1/2 in. (13 mm) diam bead of sealant shall be applied at the wallboard/duct interface on both surfaces of wall assembly.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S Elastomeric Firestop Sealant, FS-ONE Sealant, FS-ONE MAX Intumescent Sealant or CP606 Flexible Firestop 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 and CAN/ULC-S115

System No. W-L-7059

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 1/2 and 3/4 Hr (See Item 1)	FT Rating - 1/2 and 3/4 Hr(See Item 1)
	FH Ratings - 1 and 2 Hr (See Item 1)
	FTH Rating - 1/2 and 3/4 Hr (See Item 1)



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing shall consist of channel studs. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. The opening in the wall to accommodate the steel duct (Item 2) shall be framed on all sides using lengths of studs installed between the vertical studs and attached to the studs at each end. The framed opening in the wall shall be a nom 6 in. (152 mm) wide and 12 in. (305 mm) higher than the width and height of the steel duct.
   B. Wallboard, Gypsum* — 5/8 in. (16 mm) thick, 4 ft (1.22 mm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400, V400 or W400 Series Design in the UL Fire Resistance Directory. Max area of opening is 395 sq. in. (0.25 m2)with max dimensions of 26-3/4 in. (679 mm) for steel studs. The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The hourly T, FT and FTH Ratings are 1/2 hr and 3/4 hr for 1 and 2 hr rated assemblies, respectively

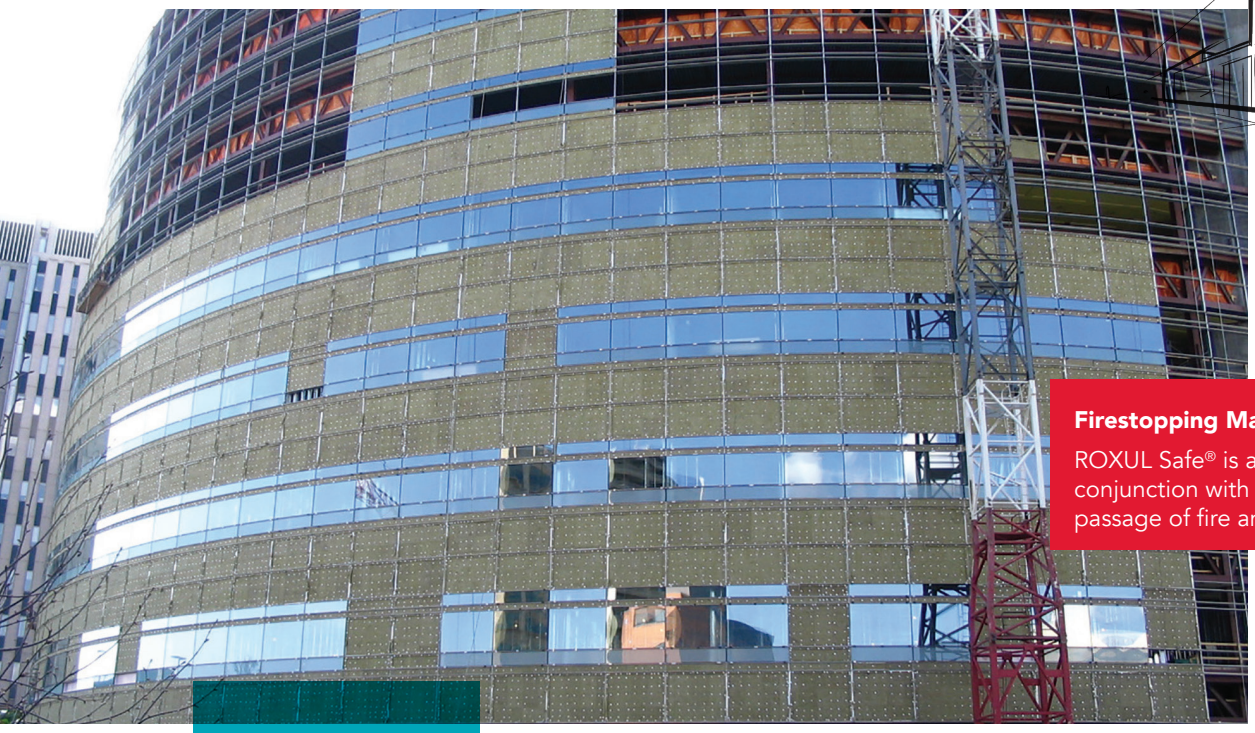
System No. W-L-7059

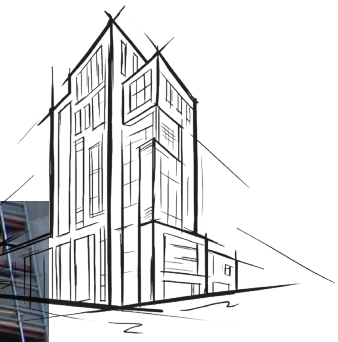
2. Steel Duct — Nom 24 in. by 12 in. (610 by 305 mm) (or smaller) No. 24 gauge (or heavier) steel duct to be installed eccentrically within the framed opening. The annular space shall be min 1 in. (25 mm) to max 1-3/4 in. (45 mm) Steel duct to be rigidly supported on both sides of wall assembly.
3. Batts and Blankets* — Max 1-1/2 in. (38 mm) thick glass fiber batt or blanket (min 3/4 pcf or 12 kg/m3) jacketed on the outside with a foil-scrim-kraft facing. Longitudinal and transverse joints sealed with aluminum foil tape. During the installation of the fill material, the batt or blanket shall be compressed 50% such that the annular space within the firestop system shall be min 1/4 in. (6 mm) to max 1 in. (25 mm). See Batts and Blankets - (BKNV) category in the Building Materials Directory for names of manufacturers. Any batt or blanket meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index 50 or less may be used.
4. Fill, Void or Cavity Material* - Sealant — Min 5/8 in. or 1-1/4 in. (16 or 32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall for 1 or 2 hr walls, respectively. If voids develop after the fill materials cures, the voids shall be sealed with additional fill material.
   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.

ROXUL Safe®

Firestopping Insulation





Firestopping Material

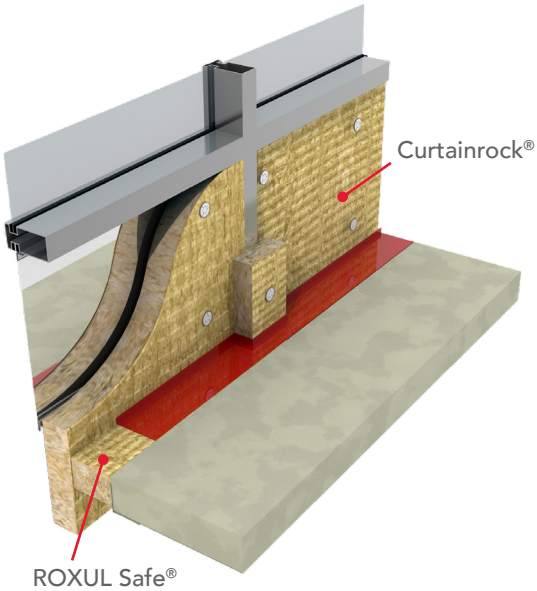
ROXUL Safe® is always used in conjunction with a fire sealant to prevent passage of fire and smoke.

ROCKWOOL ROXUL Safe® is a lightweight, semi-rigid stone wool insulation designed to provide fire protection in perimeter fire containment systems (compliant with ASTM E2307), wall and floor penetrations including conduit pipes and duct openings, construction joints, and other firestopping applications.

ROXUL Safe is noncombustible and fire resistant, and will not develop toxic smoke or promote flame spread, even when exposed directly to a fire. When ROXUL Safe® is used with ROCKWOOL Curtainrock® 40 or Curtainrock® 80, it provides a comprehensive firestopping system that has been UL/ULC/Intertek tested and approved for perimeter fire containment systems.

Firestopping insulation should be installed per the listed assembly. These products are manufactured to enable a compression fit to form a tight seal within the construction joints, including between the floor line and exterior curtain wall assembly in perimeter installations, so that flame and hot gases cannot pass through the joint. For through penetrations and construction joints, ROXUL Safe® should be cut as needed leaving no voids.

Learn more at rockwool.com/roxul-safe



ROCKWOOL®

ROXUL Safe®
Firestopping Insulation

Technical Data Sheet

Firestopping 07840* • Firestopping 07 84 00**
Fibrous Fire Safing 07 84 56.13** • Curtain wall & glazed assemblies 08 44 00**

ROCKWOOL ROXUL Safe® is semi-rigid, stone wool batt insulation approved for use in fire-rated joints, through penetrations and perimeter fire containment systems.

	Performance	Test Standard
Compliance	Mineral Fiber Block and Board Thermal Insulation - Type IVA Compliant Mineral Fiber Thermal Insulation for Buildings, Type 1 Compliant MEA Approval, New York City Approval	ASTM C612 CAN/ULC S702 339-97-M
Reaction to Fire	Flame Spread Index = 0; Smoke Developed Index = 0 Flame Spread Rating = 0; Smoke Developed Classification = 0 Combustibility of Materials at 750 °C - Noncombustible Determination of Non-combustibility of Building Materials - Non-combustible Fire Tests of Firestop Systems Fire Tests of Penetration Firestop Systems Tests for Fire Resistance of Building Joint Systems Perimeter Fire Barrier Systems Smoulder Resistance - 0.01 % Consult UL, ULC and Intertek Directories for fire rated designs	ASTM E84 (UL 723)[1] CAN/ULC S102 ASTM E136 CAN/ULC S114 CAN/ULC S115 ASTM E814 (UL 1479) UL 2079 ASTM E2307/E119 CAN/ULC S129
Density	Minimum Density - 4.0 lbs/ft³ (64 kg/m³)	ASTM C303
Corrosion Resistance	Corrosiveness to Steel - Passed	ASTM C665
Reaction to Moisture	Water Vapor Sorption - 0.26 vol% Determination of Fungi Resistance - Passed	ASTM C1104 ASTM C1338
Thickness Dimensions	Product is available in 1.5", 2", 3", 4", 5" and 6" (38.1 mm, 50.8 mm, 76.2 mm, 101.6 mm, 127 mm and 152.4 mm), 24" x 48" (610 mm x 1219 mm)	

Issued 02-2025
Supersedes 08-2024

NOTE: *Master Format 1995 Edition **Master Format 2004 Edition. As ROCKWOOL has no control over installation design and workmanship, accessory materials or application conditions, ROCKWOOL does not warranty the performance or results of any installation containing ROCKWOOL's products. ROCKWOOL's overall liability and the remedies available are limited by the general terms and conditions of sale. This warranty is in lieu of all other warranties and conditions expressed or implied, including the warranties of merchantability and fitness for a particular purpose. NOTE 1: Meets Class A requirements for flame spread and smoke-developed indices as per IBC.

ROCKWOOL®

8024 Esquesing Line, Milton, ON L9T 6W3
Tel: 800-265-6878 • Fax: 800-991-0110
rockwool.com

Built-in cover page

078443-1.4.A-0:Joint Firestopping - Product Data

Status	**Open** Submitted
Spec section	078443 JOINT FIRESTOPPING
Manager	**Ryan Schelin** (Je Dunn Construction Company (013735))
Responsible contractor	**David Hudnall** (Barrier Technologies Llc (074122))
Reviewers step 01	**Ryan Schelin** (Je Dunn Construction Company (013735))

515 E. Locust St, Suite 301
Des Moines, IA 50309
tel 515.698.4400
fax 515.288.3049

JE DUNN CONSTRUCTION

Reviewed by JE Dunn: Ryan Schelin
Date: 12/23/2025 2:08:15 PM
Job: LSMC ED Expansion
Submittal ID: 078443-001
Bid Package: 100% CD's
Comments: Reviewed - Submitted for Approval

Devenney GROUP

- [x] Reviewed
- [ ] Furnish as Corrected
- [ ] Revise and Resubmit
- [ ] Rejected
- [ ] Submit Specified Item
- [ ] Not Reviewed by General Contractor
- [ ] Review Not Required by the Contract Documents

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 in a safe and satisfactory manner

Signed nvalech
Date 1/2/2026

Safety Data Sheets NOT reviewed.

TABLE OF CONTENTS
078443 Joint Firestopping Package 001

P: 913.905.2695
F: 913.254.3120
W: www.Barrier-Technologies.com

TRANSMITTAL

TO: JE Dunn Construction

PROJECT: HCA LSMC ED Reno

RE: 078443 – Joint Firestopping

PAGE	SECTION	DESCRIPTION
1	-	Cover Page
2	078400	Sealant schedule
3	078400	Hilti 606 - PDS
4-11	078400	Hilti 606 - SDS
12	078400	Hilti 606 – Certificate of compliance
13	078400	Hilti 606 – test reports
14-18	078400	UL Systems
19	078400	Hilti CS-S SA Light - PDS
20-29	078400	Hilti CS-S SA Light - SDS
30-33	078400	Hilti CS-S SA Light – test reports
34	078400	Hilti CFS-SP - PDS
35-48	078400	Hilti CFS-SP - SDS
49	078400	Hilti CFS-SP – Certificate of compliance
50	078400	Hilti CFS-SP – test reports
51	078400	Installer certs

COMMENTS:

Should you have any questions, please contact us at your convenience.

David Hudnall
Barrier Technologies
816.288.9892
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W: www.Barrier-Technologies.com

Underwriters Laboratories
Qualified Firestop Contractor Program

Sealant Schedule

TO: JE Dunn

PROJECT: Lee's Summit Medical Center

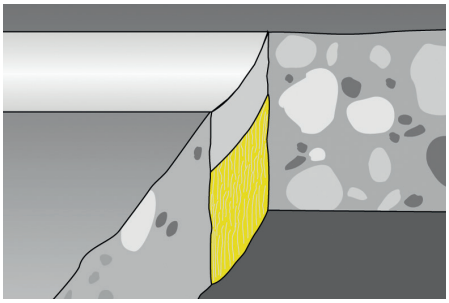
Location	Application	Product	Color
Interior	HOW 1 hr gyp	Hilti 606	Red
Interior	BOW 1 hr gyp	Hilti 606	Red
Interior	HOW smoke partition	Hilti SA Light	White
Interior	BOW smoke partition	Hilti SA Light	White
Interior	Slab at roof	Hilti CFS	Red
Interior	temp lounge HOW/BOW	Hilti 606	Red

COMMENTS:

Should you have any questions, please contact us at your convenience.

David Hudnall
Barrier Technologies
816.288.9892
www.Barrier-Technologies.com

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
- Not for use with CPVC

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

Installation instructions

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

Technical data*

Chemical basis	Water-based acrylic dispersion
Color	Available in red, white and gray
Density	99.9 lb/ft³
Application temperature	35°F to 104°F (1.5°C to 40°C)
Storage temperature	35°F to 95°F (1.5°C to 35°C)
Temperature resistance	-22°F to 176°F (-30°C to 80°C)
Shelf life	24 months
Tack free time	23mins (ventilated at 77°F, 80% rel. humidity)
Skin-forming time	Approx. 15 min
Curing time	Approx. 3 mm / 3 days
Average volume shrinkage (ASTM C1241)	22%
Movement capability	Up to 33%
Mold & mildew	Class 0 (ASTM G21-96)
Electrical resistance	Yes
LEED Compliant	Yes (CDPH v1.2-2017)
LEED VOC	49.5 g/L
Intumescent	No
Seismic resistant	Yes
Water tightness	Yes
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
Surface burning characteristics (CAN/ULC-S102)	Flame Spread: 14 Smoke Developed: 4
California State Fire Marshall Approvals	Yes (pens & joints)
City of New York approval	Yes (CP606 MEA 100-99-MV6)
Air leakage (UL 2079 L-Rating)	L-Rating at Ambient = Less than 1 CFM / Lin Ft. L-Rating at 400%F = Less than 1 CFM / Lin Ft.
Sound transmission classification (ASTM E 90-99)	68 (Relates to specific construction)
Tested in accordance with	UL 2079, ASTM E 814, ASTM E 1966, ASTM E 2837, UL 1479, ASTM C920, ASTM C1241, CAN/ULC-S115

*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

CFS-S ACR / CP 606

Safety Data Sheet

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

Revision date: 3/26/2025 Issue date: 3/26/2025 Supersedes: 4/25/2022 Version: 5.0

SECTION 1: Identification

1.1. Identification

Product form	Mixture
Trade name	CFS-S ACR / CP 606
Product code	BU Fire Protection

1.2. Recommended use and restrictions on use

Use of the substance/mixture	Flexible firestop sealant
Recommended use	Adhesives, sealants

1.3. Supplier

Supplier

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

Department issuing data specification sheet

Hilti AG
Feldkircherstraße 100
FL 9494 Schaan
Liechtenstein
T +423 234 2111
product.compliance-fire.protection@hilti.com

1.4. Emergency telephone number

Emergency number	Emergency CONTACT (24-Hour-Number) GBK/Infotrac ID 101022 (USA domestic) 1 800 535 5053 or international (001) 352 323 3500

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

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria for section 3.2 of HCS

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. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	Get medical advice/attention if you feel unwell. Allow affected person to breathe fresh air. 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. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
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. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	Get medical advice/attention if you feel unwell. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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.

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	Water spray. Dry powder. Foam. Carbon dioxide. Sand.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	Carbon dioxide. Carbon monoxide.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	Self-contained breathing apparatus. Complete protective clothing. 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

Emergency procedures	Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	For further information refer to section 8: "Exposure controls/personal protection". Equip cleanup crew with proper protection.
Emergency procedures	Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Mechanically recover the product. On land, sweep or shovel into suitable containers. Minimise generation of dust. Store away from other materials.

6.4. Reference to other sections

For further information refer to section 13. See Section 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.
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	Store in a dry place. Keep container closed when not in use.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature	35 – 95 °F

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

CFS-S ACR / CP 606
No additional information available

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

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

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

Hand protection:				
Protective gloves. ISO 374-1. Wear protective gloves.				
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**
Disposable gloves	Nitrile rubber (NBR)	1 (> 10 minutes)	>0.4	

Eye protection:		
Chemical goggles or safety glasses		
Type	**Field of application**	**Characteristics**
Safety glasses		

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Not necessary with sufficient ventilation

Personal protective equipment symbol(s):

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
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)	Not applicable. Non flammable.
Vapour pressure	No data available
Relative vapour density at 20°C	No data available
Relative density	No data available
Density	1.6 g/cm³
Molecular mass	Not determined
Solubility	No data available
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. Not established.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

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

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 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
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Viscosity, kinematic	No data available
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.

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

CFS-S ACR / CP 606	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

CFS-S ACR / CP 606	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods: Dispose in a safe manner in accordance with local/national regulations.

Product/Packaging disposal recommendations: Recycle the material as far as possible.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
Not applicable	Not applicable	Not applicable	Not applicable
14.2. 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

DOT
Not applicable

TDG
Not applicable

IMDG
Not applicable

IATA
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 present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

No additional information available

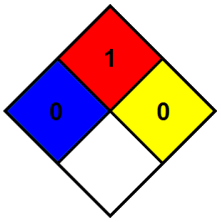
15.3. US State regulations

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

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

Revision date	03/26/2025
Data sources	Supplier information. EU: REACH. K-REACH. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Other information	None.
NFPA health hazard	0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	1 - Materials that must be preheated before ignition can occur.
NFPA reactivity	0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating	
Health	1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
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 - Safety glasses, Gloves

Indication of changes:

Section	Changed item	Change	Comments
			general update
	Emergency number	Modified	

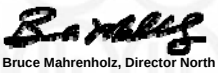
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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

Sound Transmission Class Testing (ASTM E90)

INTRODUCTION:

This report presents the results of acoustical testing of CP 606 Flexible Firestop Sealant. This testing was requested by Mr. Chad Stroike, CFPS and was completed on November 4, 2016.

This report must not be reproduced except in full with the approval of Element Materials Technology. The test results contained in this report pertain only to the specific assemblies tested and not necessarily to all similar constructions.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this standard on nominally identical constructions and acoustical conditions may produce different results.

TEST RESULTS SUMMARY:

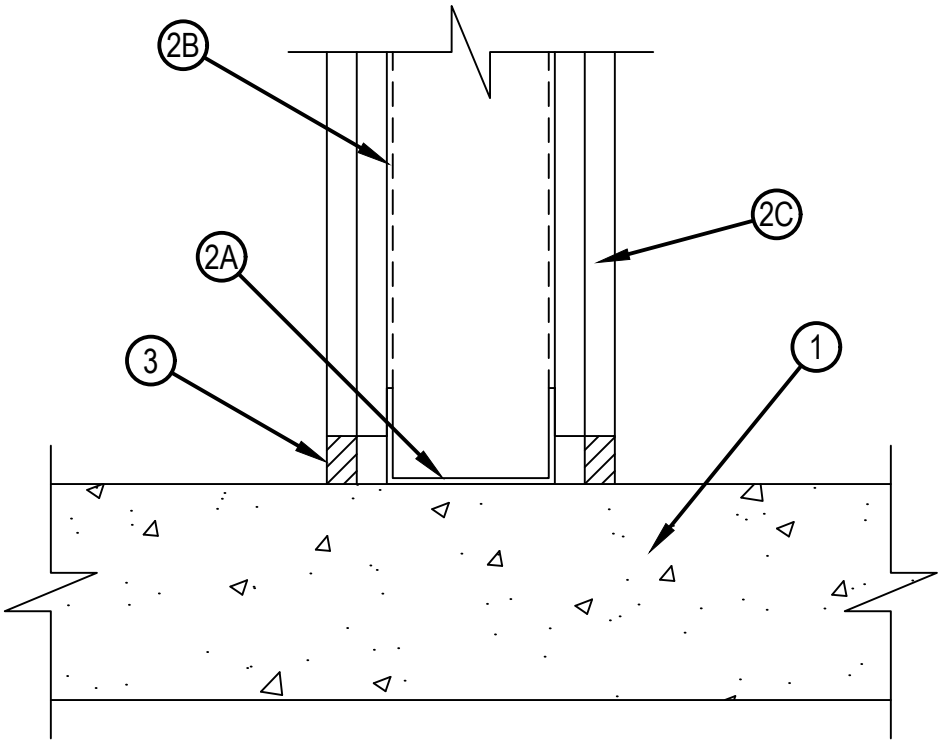
Sound Transmission Class (STC)		Test Results		
Test #	**Sample Identification**	**STC**	**Def**	**OITC**
1	**Baseline Test - Wall Assembly Sealed**	***56***	31	40
2	**Baseline Test - Wall Assembly with Top Joint Not Sealed**	***27***	29	29
3	**Wall Assebly with CP 606 Flexible Firestop Sealant at Top Joint**	***55***	30	40

Tabular and graphical presentations of the data are presented under "TEST RESULTS" below. Individual wall constructions are listed below.

Classified by
Underwriters Laboratories, Inc.
to UL 2079 and CAN/ULC-S115

System No. BW-S-0002

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1, 2, 3 and 4 Hr (See Item 2)	F Ratings — 1, 2, 3 and 4 Hr (See Item 2)
Nominal Joint Width - 7/8 or 1 In. (See Item 3)	FT Ratings — 1, 2, 3 and 4 Hr (See Item 2)
L Rating at Ambient — Less than 1 CFM/Lin Ft	FH Ratings — 1, 2, 3 and 4 Hr (See Item 2)
L Rating at 400° F — Less than 1 CFM/Lin Ft	FTH Ratings — 1, 2, 3 and 4 Hr (See Item 2)
	Nominal Joint Width - 7/8 and 1 In. (See Item 3)
	L Rating at Ambient — Less than 1.55 L/s/m
	L Rating at 204°C — Less than 1.55 L/s/m



System No. BW-S-0002

1. Floor Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) structural concrete. Floor may also be constructed of any 6 in. (152 mm) thick UL Classified hollow-core Precast Concrete Units*.

See Precast Concrete Units category in the Fire Resistance Directory for names of manufactures.

1A — (Not Shown, Alternate) For 1-hr and 2-hr fire ratings only, The fire-rated fluted steel floor unit/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Steel Floor and Form Units* —Max 3 in. (76 mm) deep galv steel fluted units.

B. Concrete —Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.

2. Wall Assembly — The 1, 2, 3 or 4 hr fire-rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory. In addition, the wall may incorporate a head-of-wall joint system as specified in the HW Series Joint Systems in the UL Fire Resistance Directory. The wall shall include the following construction features:

A. Steel Floor Runners — Floor runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2B). Floor runners to be provided with 1-1/4 in. (32 mm) flanges. Runners secured with steel fasteners spaced 12 in. (305 mm) OC.

B. Studs — Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in, resting on and fastened to floor runner with sheet metal screws. Stud spacing not to exceed 24 in. (610 mm) OC.

C. Gypsum Board* — One, two, three or four layers of 5/8 in. (16 mm) thick gypsum board for 1, 2, 3 and 4 hr rated assemblies, respectively, Wall to be constructed as specified in the individual U400, V400 or W400 Series Design in the UL Fire Resistance Directory, except that a max 1 in. (25 mm) gap for 1 and 2 hr rated assemblies or a max 7/8 in. gap for 3 and 4 hr rated assemblies shall be maintained between the bottom of gypsum board and top of concrete floor. The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

3. Fill, Void or Cavity Material* Sealant — Max separation between top of floor and bottom of gypsum board wall sheathing is 1 in. (25 mm) for 1 and 2 hr rated assemblies or 7/8 in. (22 mm) for 3 and 4 hr rated assemblies. Min 5/8 in. (16 mm) thickness of fill material for 1 and 2 hr rated assemblies, min. 1 in. (25 mm) thickness of fill material for 3 and 4 hr rated assemblies, installed on each side of the wall between the bottom of the gypsum board and the top of the concrete floor, flush with each surface of the wall. For 1 and 2 hr rated assemblies only, and when forming material, (Item 4) is used, the fill material thickness may be reduced to a min. 1/4 in. (6.4 mm).

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 605 Bottom of Wall Firestop Sealant, CP601S Elastomeric Firestop Sealant, CP606 Flexible Firestop Sealant, CFS-S SIL GG or FS-ONE MAX Intumescent Sealant.

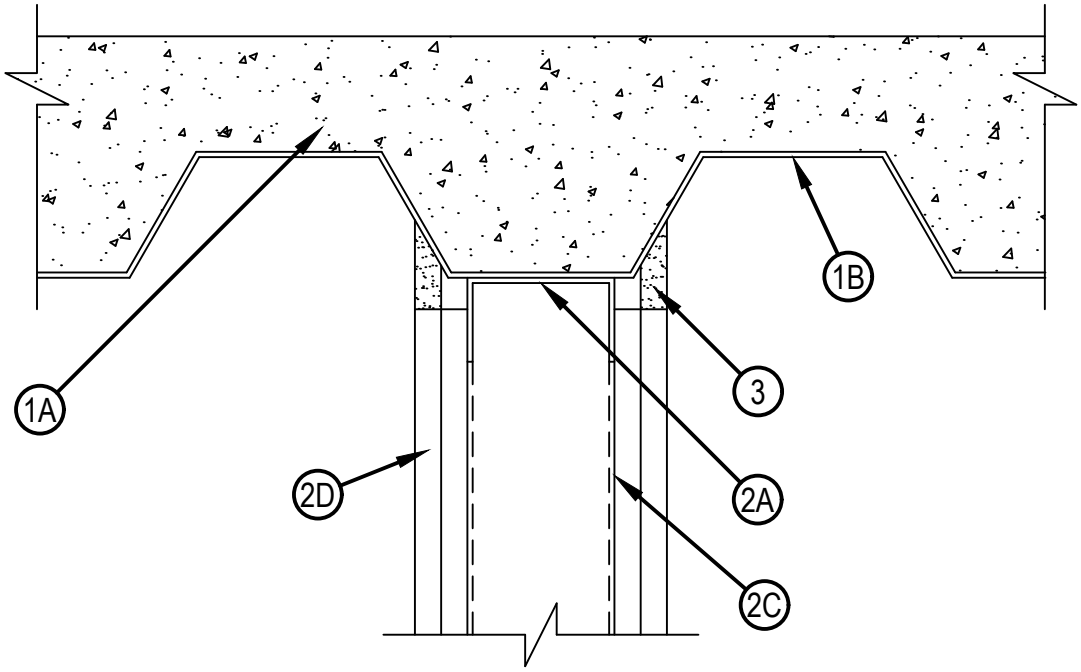
4. Forming Material — (Optional, Not Shown) - Mineral wool insulation, fiberglass batt insulation or polyurethane/polyethylene foam backer rod. Forming material to be recessed from both surfaces of the 2, 3 and 4 hr fire rated wall to accommodate the required thickness of fill material.

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

Underwriters Laboratories, Inc.
to UL 2079 and CAN/ULC-S115

System No. HW-D-0184

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 3/4 In.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II Movement Capabilities — 17% Compression or Extension	FH Ratings — 1 and 2 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/lin ft	FTH Ratings — 1 and 2 Hr (See Item 2)
L Rating At 400 F — Less Than 1 CFM/lin ft	Nominal Joint Width - 3/4 In.
	Class II Movement Capabilities — 17% Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/lin ft
	L Rating At 400 F — Less Than 1 CFM/lin ft



System No. HW-D-0184

1. Floor Assembly — The fire-rated fluted steel floor unit/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Form Units* — Max 3 in. (76 mm) deep galv steel fluted units.
   B. Concrete — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
   C. Spray-Applied Fire Resistive Materials (Optional) — (Not Shown) — Prior to or after the installation of the ceiling runner and prior to the installation of the Fill, Void or Cavity Materials (Items 2A and 3), the steel floor units may be sprayed with a min 5/16 in. (8 mm) thickness to a max 11/16 in. (17 mm) thickness of fire resistive material.
      GCP APPLIED TECHNOLOGIES INC Type MK-6/HY
   1A. Roof Assembly — (Not Shown) — As an alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
   B. Roof Insulation — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the floor units.
   1B. Roof Assembly — As an alternate to Items 1 and 1A, a fire rated protected fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
   A. Steel Roof Deck — Max 3 in. (76 mm) deep galv steel fluted roof deck.
   B. Spray—Applied Fire Resistive Materials* — (Not Shown)—Prior to or after the installation of the steel ceiling runners, and prior to the installation of the Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.
2. Wall Assembly — The 1 or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Steel Floor and Ceiling Runners — Floor and ceiling runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2C). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
   A1. Light Gauge Framing* - Slotted Ceiling Runner — As an alternate to the ceiling runner in (Item 2A), slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2C). Ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.
      BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK
      CEMCO, LLC — CST
      CLARKDIETRICH BUILDING SYSTEMS — Type SLT, SLT-H
      RAM SALES L L C — RAM Slotted Track
      SCAFCO STEEL STUD MANUFACTURING CO
      TELLING INDUSTRIES L L C — True-Action Deflection Track
      MARINO/WARE, DIV OF WARE INDUSTRIES INC — Type SLT

System No. HW-D-0184

A2. Light Gauge Framing* - Vertical Deflection Ceiling Runner — As an alternate to the ceiling runners in Items 2A and 2A1, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened with runner. Slotted clip provided with step bushings for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2C). Vertical deflection ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.

A3. Light Gauge Framing*- Notched Ceiling Runner — As an alternate to the ceiling runners in Items 2A through 2A2, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2C). Notched ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610mm) OC before or after optional spray-applied fire resistive material is used. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.

OLMAR SUPPLY INC — Type SCR

B. Steel Attachment Clips — (Optional - Not Shown) - When spray applied fireproofing is used ceiling runner may be secured to deck with Z-shaped clips formed from min. 1 in. (25 mm) long strips of min 20 ga galv steel. Length of clips should not exceed the width (thickness) of the wall. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the bottom of the steel deck with 1-1/2 or 2 in. (38 or 51 mm) long upper and lower legs. Legs of clips fastened to valleys of steel deck (prior to application of spray-applied fire-resistive materials) and top of ceiling runner with steel fasteners or welds. Clips spaced max 24 in. (610 mm) OC.

C. Studs — Steel studs to be min 3-5/8 in. (92 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.

D. Gypsum Board* — For 1 hr assembly, one layer of 5/8 in. (16 mm) thick gypsum board is required in the individual Wall and Partition Design. For 2 hr assembly, two layers of 5/8 in. (16 mm) thick gypsum board is required in the individual Wall and Partition Design. For both hourly ratings, a nominal 3/4 in. (19 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the steel deck and the top row of screws shall be installed into the studs 3 in. (76 mm) below the valleys of the steel floor units.

The hourly fire rating of the joint system is equal to the hourly rating of the wall.

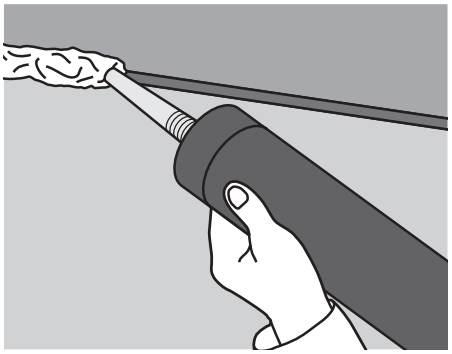
3. Fill, Void or Cavity Material* — Sealant - Max separation between bottom of floor or roof and top of wall is 3/4 in. (19 mm). The joint system is designed to accommodate a max 17 percent compression or extension from its installed width. Min 5/8 in. (16 mm) thickness of fill material installed on each side of the wall between the top of the gypsum board and the bottom of the steel deck, flush with each surface of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 601S Elastomeric Firestop Sealant or CP 606 Flexible Firestop Sealant or CFS-S SIL GG Sealant. L Ratings apply when CP 606 or CFS-S SIL GG Sealant is used.

4. Forming Material — (Optional, Not Shown) - Mineral wool insulation, fiberglass batt insulation or polyurethane/polyethylene foam backer rod. Forming material to be recessed from both surfaces of the 2 hr fire rated wall to accommodate the required thickness of fill material.

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

LIGHTWEIGHT SMOKE AND ACOUSTIC SEALANT CS-S SA LIGHT



Applications

- Sealing construction joints and through-penetration openings in non fire-rated acoustical assemblies and smoke partitions (not for use in fire-rated applications)

Advantages

- Best in class dispensing and tooling
- Lightweight product promotes a faster installation
- Lubrizol CPVC compatible (FBC™ System Compatible)
- Low VOC's
- Made in USA
- Paintable

Not for use

- In areas immersed in water
- For bituminous coated cast iron pipe compatibility reach out to Hilti, Inc. for details.

Tested/evaluated in accordance with

- ASTM E 90
- ASTM C 834
- ASTM E 84
- ASTM C 919
- ASTM G 21
- ASTM D217
- ISO 11600

Installation instructions

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

Restricts smoke migration

Excellent sound insulation characteristics with application based testing in accordance with ASTM E 90.

FBC SYSTEM COMPATIBLE

FBC™ System Compatible indicates that this product has been tested, and is monitored on an ongoing basis, to assure its chemical compatibility with FlowGuard Gold®, BlazeMaster® and Corzan® piping systems and products made with TempRite® Technology." "The FBC System Compatible Logo, FBC™, FlowGuard Gold®, BlazeMaster®, Corzan®, and TempRite® are trademarks of Lubrizol Advanced Materials, Inc. or its affiliates.

Technical Data

Color	white
Chemical basis	acrylic
Storage and transport temperature range	40°F to 95°F (5°C to 35°C)
Curing time (73°F / 50% relative humidity)	approx. 3 mm / 3 days
Skin-forming time (73°F / 50% relative humidity)	approx. 25 min
Application temperature range	35°F to 104°F (1.7°C to 40°C)
Shelf life	24 months from date of manufacture
Sound transmission classification (ASTM E 90)	STC 65 (per tested construction type)
Movement capability (ISO 11600)	approx. 12.5%
Mold and mildew (ASTM G 21)	mold resistant
Surface burning characteristics (ASTM E 84-19b)	Flame spread: 0 Smoke development: 0
CAN/ULC S102	Flame spread: 10 Smoke developed 47
ASTM C834	Type OP, Grade -18°C
Air leakage (UL 2079 L-Rating)	L-Rating at Ambient = Less than 1 CFM / Lin Ft. L-Rating at 400°F = Less than 1 CFM / Lin Ft.

Order designation	Sales pack quantity	Item number
CS-S SA Light 20 oz foil	20	2305383
CS-S SA Light 5 gal pail	1	2305384

BUY AMERICA ACT COMPLIANT

Specified Divisions

- Division 7 07 90 00 Joint Protection
- Division 7 07 95 00 Expansion Control
- Division 9 09 20 00 Plaster and Gypsum Board
- Division 9 09 80 00 Acoustical Treatment

CS-S SA LIGHT

Safety Data Sheet

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

Revision date: 12/10/2024 Issue date: 12/10/2024 Supersedes: 1/10/2022 Version: 1.2

SECTION 1: Identification

1.1. Identification

Product form	Mixture
Product name	CS-S SA LIGHT
Product code	BU Fire Protection

1.2. Recommended use and restrictions on use

Recommended use	Smoke and acoustic lightweight sealant

1.3. Supplier

Supplier

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

Department issuing data specification sheet

Hilti AG
Feldkircherstraße 100
FL 9494 Schaan
Liechtenstein
T +423 234 2111
product.compliance-fire.protection@hilti.com

1.4. Emergency telephone number

Emergency number	Emergency CONTACT (24-Hour-Number) GBK/Infotrac ID 101022 (USA domestic) 1 800 535 5053 or international (001) 352 323 3500

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

No additional information available

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
Titanium dioxide	CAS-No.: 13463-67-7	< 1	Carc. 2, H351

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. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.

First-aid measures after eye contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center or a doctor if you feel unwell.

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 excessive inhalation exposure. Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.

Symptoms/effects after skin contact: None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Symptoms/effects after eye contact: None under normal conditions. Dust from this product may cause eye irritation.

Symptoms/effects after ingestion: None under normal conditions.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: 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

Fire hazard: No fire hazard.

Explosion hazard: No direct explosion hazard.

Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment. Do not enter fire area without proper protective equipment, including respiratory protection.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

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

6.1.2. For emergency responders

Protective equipment	Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	Ventilate area. Evacuate unnecessary personnel.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	Using a clean shovel, put the material in a dry container and cover without compressing it.
Methods for cleaning up	Mechanically recover the product. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
Other information	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Section 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling	Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.
Hygiene measures	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

Technical measures	Keep in a cool, well-ventilated place away from heat.
Storage conditions	Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Packaging materials	Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

CS-S SA LIGHT
No additional information available

Titanium dioxide (13463-67-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Titanium dioxide
ACGIH OEL TWA	0.2 mg/m³ (Nanoscale particles. R - Repirable particulate matter) 2.5 mg/m³ (Finescale particles. R - Repirable particulate matter)
Remark (ACGIH)	TLV® Basis: LRT irr; pneumoconiosis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2023
USA - OSHA - Occupational Exposure Limits	
Local name	Titanium dioxide (Total dust)
OSHA PEL TWA	15 mg/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles.

Hand protection:

Wear suitable gloves tested to EN374. Suitable for short-term work or as a splash guard:
Nitrile rubber gloves (> 0.1 mm). In case of permanent product contact:

Type	Material	Permeation	Thickness (mm)	Penetration
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	>0,4mm	

Eye protection:

Chemical goggles or safety glasses. Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

No respiratory protection needed under normal use conditions. Ensure good ventilation of the work station. If the occupational exposure limit is exceeded: Wear appropriate mask

Personal protective equipment symbol(s):

Other information:

Do not eat, drink or smoke during use. The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Pasty.
Colour	white
Odour	characteristic
Odour threshold	No data available
pH	7.5 – 9.5
Melting point	No data available
Freezing point	Not applicable
Boiling point	100 °C
Flash point	Not applicable
Relative evaporation rate (butylacetate=1)	No data available
Relative evaporation rate (ether=1)	< 1
Flammability (solid, gas)	Non flammable.
Vapour pressure	No data available
Relative vapour density at 20°C	No data available
Relative density	0.71 – 0.91
Solubility	No data available
Partition coefficient n-octanol/water (Log Pow)	No data available
Auto-ignition temperature	Not applicable
Decomposition temperature	No data available
Viscosity, kinematic	Not applicable
Viscosity, dynamic	200000 – 400000 cP
Explosive limits	Not applicable
Explosive properties	No data available
Oxidising properties	No data available

9.2. Other information

VOC content ≈ 19 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

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

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

Titanium dioxide (13463-67-7)	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	5000 mg/kg
LC50 Inhalation - Rat	> 5.09 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Experimental value, Inhalation (dust), 14 day(s))

Skin corrosion/irritation	Not classified pH: 7.5 – 9.5
Serious eye damage/irritation	Not classified pH: 7.5 – 9.5
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified

Titanium dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Viscosity, kinematic	Not applicable
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 excessive inhalation exposure. Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact	None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.
Symptoms/effects after eye contact	None under normal conditions. Dust from this product may cause eye irritation.
Symptoms/effects after ingestion	None under normal conditions.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	Harmful to aquatic life with long lasting effects.

Titanium dioxide (13463-67-7)	
LC50 - Fish [1]	> 1000 mg/l (Pisces, Fresh water)
LC50 - Other aquatic organisms [1]	> 10000 mg/l
EC50 - Crustacea [1]	> 1000 mg/l (Invertebrata, Fresh water)
EC50 - Crustacea [2]	> 10000 mg/l

Titanium dioxide (13463-67-7)	
EC50 72h - Algae [1]	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
ErC50 algae	61 mg/l (EPA 600/9-78-018, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

CS-S SA LIGHT	
Persistence and degradability	Not established.

Titanium dioxide (13463-67-7)	
Not rapidly degradable	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

CS-S SA LIGHT	
Bioaccumulative potential	Not established.

Titanium dioxide (13463-67-7)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

Titanium dioxide (13463-67-7)	
Surface tension	No data available in the literature
Ecology - soil	Low potential for mobility in soil.

12.5. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation: Disposal must be done according to official regulations.
Waste treatment methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Disposal must be done according to official regulations.
Additional information: Do not re-use empty containers.
Ecological information: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. Proper Shipping Name			
Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)			
Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group			
Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards			
Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available			

14.6. Special precautions for user

DOT
Not regulated

TDG
Not regulated

IMDG
Not regulated

IATA
Not regulated

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 present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

Titanium dioxide (13463-67-7)

Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

WARNING: This product can expose you to chemicals including Ethylene oxide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

Revision date	12/10/2024
Data sources	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Other information	None.

Full text of H-statements	
H351	Suspected of causing cancer.

Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail

Abbreviations and acronyms	
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Indication of changes:			
Section	**Changed item**	**Change**	**Comments**
			general update
8		Modified	

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.

WESTERN ELECTRO - ACOUSTIC LABORATORY
TESTING • CALIBRATION • RESEARCH
25132 Rye Canyon Loop Santa Clarita, California 91355 Tel: (661) 775-3741 Fax: (661) 775-3742 www.weal.com

SOUND TRANSMISSION LOSS TEST REPORT NO. TL20-402

CLIENT: **Hilti**
P.O. Box 21148
Tulsa, Oklahoma 74121
TEST DATE: 22 July 2020

17 August 2020

INTRODUCTION

The test was performed in accordance with ASTM E 90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions* and ASTM E2235-04 (2020), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*. Copies of the test standard are available at www.astm.org. The test chamber source and receiving room volumes are 204 and 148.4 cubic meters respectively. Western Electro-Acoustic Laboratory is accredited by the United States Department of Commerce, National Institute of Standards and Technology under the National Voluntary Accreditation Program (NVLAP) Lab Code 100256-0 for this test procedure. This test report relates only to the item(s) tested. This report must not be used to claim product certification, approval, or endorsement by WEAL, NVLAP, NIST or any agency of the federal government.

DESCRIPTION OF TEST SPECIMEN

The test specimen consisted of a double steel stud wall assembly with Type 'X' gypsum board installed on both sides of the panel, batt insulation in the stud cavity, and Hilti CS-S SA LIGHT Smoke and Acoustic sealant at the head-of-wall joint.

TEST CONFIGURATION

Source Room Layers	Source Framing	Air Gap	Receiving Framing	Receiving Room Layers
1 layer 16 mm (5/8 inch) Type 'X' gypsum board	92 mm (3-5/8 inch) 25-gauge steel studs and 20-gauge slotted slip track spaced 610 mm (24 inches) on center with R-13 batt insulation in the cavity and Hilti CS-S SA LIGHT Smoke and Acoustic sealant at the 13 mm (1/2 inch) head-of-wall joint	25 mm (1 inch)	92 mm (3-5/8 inch) 25-gauge steel studs and 20-gauge slotted slip track spaced 610 mm (24 inches) on center with R-13 batt insulation in the cavity and Hilti CS-S SA LIGHT Smoke and Acoustic sealant at the 13 mm (1/2 inch) head-of-wall joint	1 layer 16 mm (5/8 inch) Type 'X' gypsum board

- On both sides, the 92 mm (3-5/8 inch) 25-gauge steel studs were spaced 610 mm (24 inches) on center (O.C.) and were screwed to the 20-gauge slotted slip track with 12 mm (1/2 inch) truss screws. Unfaced R-13 fiberglass insulation was installed in the stud cavities. The frames were isolated from the test opening with 6 mm (1/4 inch) neoprene pads.
- On both sides, one layer of 16 mm (5/8 inch) Type 'X' gypsum board was screwed to the studs using 32 mm (1-1/4 inch) long #6 drywall screws spaced at 203 mm (8 inches) O.C. at the perimeter and 305 mm (12 inches) in the field.
- On both sides, a gap at the head-of-wall joint was left. The gap size was 13 mm (1/2 inch) and was sealed with Hilti CS-S SA LIGHT Smoke and Acoustic sealant.
- All gypsum board was oriented vertically with joints staggered on opposite sides. Aside from the head-of-wall joint, the remaining gypsum board joints were sealed with a bead of latex caulking and metal foil tape. All screw heads were covered with metal foil tape.
- The overall dimensions of the wall assembly were 2.44 m (96 inches) wide by 2.44 m (96 inches) high by 241 mm (9-1/2 inches) thick.

25132 Rye Canyon Loop Santa Clarita, California 91355 Tel: (661) 775-3741 Fax: (661) 775-3742 www.weal.com

SOUND TRANSMISSION LOSS TEST REPORT NO. TL20-402

CLIENT: **Hilti**
P.O. Box 21148
Tulsa, Oklahoma 74121

17 August 2020

TEST DATE: 22 July 2020

- The overall weight of the assembly was estimated to be 161.2 kg (355.5 lbs.) for a calculated surface density of 27.1 kg/m^2 (5.6 lbs./ft^2).

RESULTS OF THE MEASUREMENTS

One-third octave band sound transmission loss values are plotted and tabulated on the attached sheet. ASTM minimum volume requirements are met at 80 Hz and above. The Outdoor-Indoor Transmission Class rating determined in accordance with ASTM E 1332-10a was OITC 47. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC 64.

Approved:

Stephen A. Martin, Ph.D., P.E.
Laboratory Director

Respectfully submitted,
Western Electro-Acoustic Laboratory

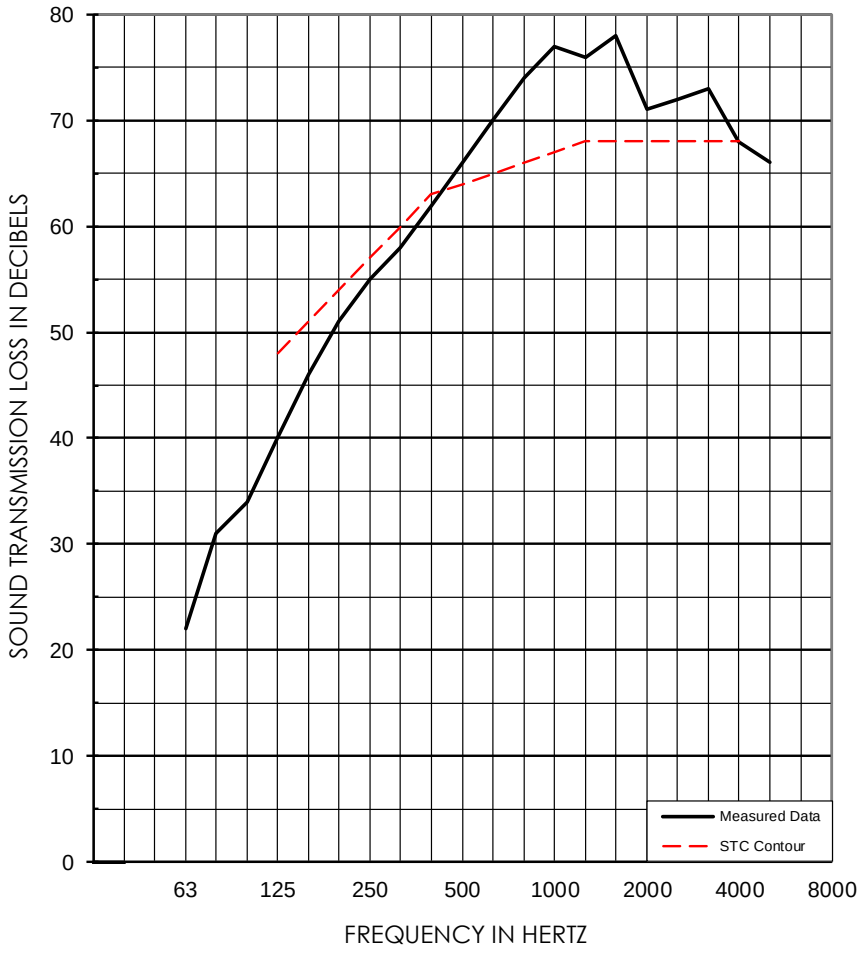
Raul Martinez
Acoustical Test Technician

WESTERN ELECTRO - ACOUSTIC LABORATORY
TESTING • CALIBRATION • RESEARCH
25132 Rye Canyon Loop Santa Clarita, California 91355 Tel: (661) 775-3741 Fax: (661) 775-3742 www.weal.com

SOUND TRANSMISSION LOSS TEST REPORT NO. TL20-402

CLIENT: **Hilti**
P.O. Box 21148
Tulsa, Oklahoma 74121
TEST DATE: 22 July 2020

17 August 2020



1/3 OCT BAND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	**22**	**31**	**34**	**40**	**46**	**51***	**55***	**58***	**62***	**66***
95% Confidence in dB	1.42	1.92	2.07	1.47	0.89	0.76	0.80	0.52	0.36	0.38
deficiencies				(8)	(5)	(3)	(2)	(2)	(1)	

1/3 OCT BAND CNTR FREQ	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TL in dB	**70***	**74***	**77***	**76***	**78***	**71***	**72***	**73***	**68**	**66**
95% Confidence in dB	0.29	0.44	0.38	0.39	0.36	0.56	0.55	0.31	0.32	0.50
deficiencies									(0)	

EWR	OITC
64	47

* Minimum estimate of transmission loss. Measurement limited by filler wall. Actual TL will be equal or greater than value reported.

Test Date: 22 July 2020
Specimen Area: 64 sq.ft.
Temperature: 79.2 deg. F
Relative Humidity: 42 %

STC
64
(21)

NVLAP TESTING
NVLAP LAB CODE 100256-0

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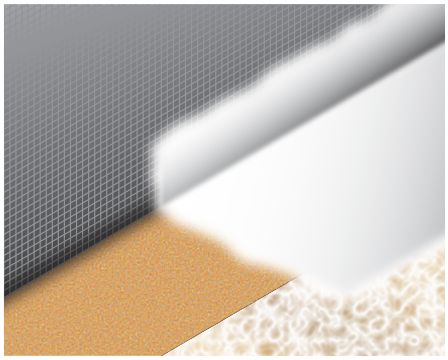
17 August 2020

TEST DATE: 22 July 2020

PHOTO(S) OF TEST SPECIMEN

FIRESTOP SILICONE JOINT SPRAY CFS-SP SIL



Product description

- The fast curing properties of the new Hilti Firestop silicone joint spray CFS-SP SIL allow contractors to reduce delays caused by weather, while improving their productivity and reducing the risk of water damage.
- This low slump formulation combines superior sprayability and coverage characteristics which also limits runs in vertical surface applications.

Product features

- A fast curing spray coating with a short tack-free time
- Tested in accordance with ASTM D6904 provides rain and wash out resistance within a few hours
- Both sprayable and brushable
- Quicker and easier installation with Graco Ultra Max II 595 and 695 Sprayers can help save you time and money
- Contains no halogens, solvents or asbestos
- One 5 gal bucket will yield approx. 245 lin.ft (@4" gap)
- Mold and mildew resistance rating 1 (ASTM G21)

Areas of application

- Sealing building perimeter gaps between floor slabs and exterior curtain wall facades

For use with

- Concrete floors and façade assemblies

Examples

- Where a concrete floor assembly meets with non-rated exterior wall (concrete, glass, etc.)

Installation instructions

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

Technical data

Density	Approx. 11 lb/gal
Color	Off-white
Application temperature	35° to 104° (1.5°C to 40)*
Temperature resistance	-30°F to 248°F (-35°C to 120°C)
Storage temperature	35°F to 77°F (1.5°C to 25°C)
Consistency	Sprayable liquid
Chemical basis	Neutral cross-linking silicone
Paintable	No
Mold and mildew	Class 1 (ASTM G21-96)
Movement	+/-12.5%
Packaging	5 gal Pail (19 Liters)
Volume per unit	1,153.3 in³
Rain resistance (ASTM D6904)	Passed (2 hour rain resisitance after 160 min. cure time)
Tack free time (ASTM C679)	55 min at 73°F, 50% humidity
Curing time	Approx. 5 hours at 73°F, 50% humidity for 2 mm depth
Surface burning characteristics (ASTM E84)	Flame spread: 0, Smoke development: 50
Sound transmission classification (ASTM E90)	61 (per tested construction type)
Elongation at break	>200%
VOC	72 g/L
Shelf life	8 months from date of manufacture
Tested in accordance with	ASTM E2307, ASTM E 84, ASTM E90, CAN/ULC-S115, UL 2079

Order Information

Designation	Legend	Qty per package	Item number
Firestop silicone joint spray CFS-SP SIL	①	1	2095007
Graco Ultra Max II 595 Sprayer	②	1	3509241
Graco Ultra Max II 695 Sprayer	③	1	3509242
Firestop silicone joint spray CFS-SP SIL (Pallet — 18 pails)	①	18	3517095
CFS-SP SIL w/ Graco Ultra Max II 595 Sprayer (Pallet)	① & ②	18	3517096
CFS-SP SIL w/ Graco Ultra Max II 695 Sprayer (Pallet)	① & ③	18	3517097

FILL, VOID OR CAVITY MATERIAL
FOR USE IN THROUGH-PENETRATION
FIRESTOP SYSTEMS, JOINT SYSTEMS AND
PERIMETER FIRE CONTAINMENT SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY 5BP5

W rated SYSTEMS AVAILABLE

FM APPROVED

* Definition = For ambient and surface temperatures between 10°F (12°C) and 35°F (1.5°C), the following conditions must apply:
- Substrate surfaces are clean and dry (e.g. free of dust, rust, grease, oil, dew, frost, ice, moisture, etc);
- Product maintained above 50°F (10°C) for a minimum of 24 hours prior to application;
- Product will not cure at ambient temperatures below 32°F / 0°C

Hilti Firestop
Saving lives
through innovation
and education

CFS-SP SIL

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Revision date: 10/27/2025 Issue date: 10/27/2025 Supersedes: 12/13/2021 Version: 5.0

SECTION 1: Identification

1.1. Identification

Product form	Mixture
Trade name	CFS-SP SIL
Product code	BU Fire Protection

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture	Firestop silicone joint spray

1.4. Supplier's details

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

Department issuing data specification sheet
Hilti AG
Feldkircher Strasse
FL 9494 Schaan
Liechtenstein
T +423 234 2111
product.compliance-fire.protection@hilti.com

1.5. Emergency phone number

Emergency number	Emergency CONTACT (24-Hour-Number) GBK/Infotrac ID 101022 (USA domestic) 1 800 535 5053 or international (001) 352 323 3500

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin sensitization, Category 1	H317	May cause an allergic skin reaction.
Carcinogenicity, Category 1B	H350	May cause cancer.

Full text of H-statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US)

Signal word (GHS US)	Danger
Hazard statements (GHS US)	H317 - May cause an allergic skin reaction H350 - May cause cancer.

Precautionary statements (GHS US)	P261 - Avoid breathing vapours, mist. P280 - Wear eye protection, protective clothing, protective gloves. P302+P352 - If on skin: Wash with plenty of water. P308+P313 - If exposed or concerned: Get medical advice/attention. P333+P313 - If skin irritation or rash occurs: Get medical advice or attention.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. 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
Calcium carbonate	CAS-No.: 1317-65-3	40 – 60	Not classified
butan-2-one O,O',O''-(methylsilylidyne)trioxime	CAS-No.: 22984-54-9	1 – 2.5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317
Vinyltris(methylethylketoxime)silane	CAS-No.: 2224-33-1	0.1 – 1	Eye Dam. 1, H318 Skin Sens. 1, H317 STOT RE 2, H373
2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime	CAS-No.: 96-29-7	0.1 – 1	Flam. Liq. 4, H227 Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1B, H350 STOT SE 1, H370 STOT SE 3, H336 STOT RE 2, H373

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. If you feel unwell, seek medical advice (show the label where possible). IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact	Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash contaminated clothing before reuse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	Rinse mouth. Do NOT induce vomiting. Call a poison center or a doctor if you feel unwell.

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 after inhalation	May cause an allergic skin reaction.
Symptoms/effects after skin contact	May cause an allergic skin reaction.
Symptoms/effects after eye contact	None under normal conditions.
Symptoms/effects after ingestion	None under normal conditions.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	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

Fire hazard	No fire hazard.
Explosion hazard	No direct explosion hazard.
Hazardous decomposition products in case of fire	Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

For non-emergency personnel

Protective equipment	Wear recommended personal protective equipment.
Emergency procedures	Evacuate unnecessary personnel. Only qualified personnel equipped with suitable protective equipment may intervene. Avoid breathing dust/fume/gas/mist/vapours/spray.

For emergency responders

Protective equipment	Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.

Environmental precautions	Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Notify authorities if product enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment	Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
Methods for cleaning up	Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Notify authorities if product enters sewers or public waters.
Other information	Dispose of materials or solid residues at an authorized site.

See Section 8,Exposure controls and personal protection,For further information refer to section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling	Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing dust/fume/gas/mist/vapours/spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Avoid contact with skin and eyes.
Hygiene measures	Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Separate working clothes from town clothes. Launder separately. 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

Technical measures	Keep in a cool, well-ventilated place away from heat.
Storage conditions	Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Store locked up.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature	35 – 77 °F
Packaging materials	Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

CFS-SP SIL	
No additional information available	

Calcium carbonate (1317-65-3)	
No additional information available	
USA - OSHA - Occupational Exposure Limits	
Local name	Calcium Carbonate (Limestone; Marble)

Calcium carbonate (1317-65-3)	
OSHA PEL TWA	15 mg/m³ (Total dust) 5 mg/m³ (Respirable fraction)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

Vinyltris(methylethylketoxime)silane (2224-33-1)
No additional information available

butan-2-one O,O',O''-(methylsilylidyne)trioxime (22984-54-9)
No additional information available

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)
No additional information available

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

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Wear respiratory protection.

Hand protection:

Wear protective gloves. Suitable for short-term work or as a splash guard:
Nitrile rubber gloves (> 0.2 mm). In case of repeated or prolonged exposure :

Type	Material	Permeation	Thickness (mm)	Penetration
Disposable gloves	Nitrile rubber (NBR)	1 (> 10 minutes)	>0,4	

Eye protection:

Chemical goggles or safety glasses. Safety glasses

Type	Field of application	Characteristics
Safety glasses		

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. In order to avoid inhalation of mist/vapour, all spraying must be done wearing adequate respirator. [In case of inadequate ventilation] wear respiratory protection.

Device	Filter type	Condition
	Type A - High-boiling (>65 °C) organic compounds	

Personal protective equipment symbol(s):

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Pasty.
Colour	white
Odour	characteristic
Odour threshold	No data available
pH	Not applicable.
Melting point	Not applicable
Freezing point	No data available
Boiling point	> 35 °C
Flash point	> 93 °C Not applicable.
Relative evaporation rate (butylacetate=1)	No data available
Flammability (solid, gas)	≈ 435 °C Non flammable.
Vapour pressure	No data available
Relative vapour density at 20°C	No data available
Relative density	No data available
Density	1.3 g/cm³
Solubility	insoluble in water.
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	Product is not explosive.
Oxidising properties	No data available

9.2. Other information

VOC content	72.84 g/l ASTM D 2369 – 20, SCAQMD 1113 / fire-proofing coating (llimit 150g/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

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

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

Calcium carbonate (1317-65-3)	
LD50 oral rat	> 5000 mg/kg

Vinyltris(methylethylketoxime)silane (2224-33-1)	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Male, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2009 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))

butan-2-one O,O',O''-(methylsilylidyne)trioxime (22984-54-9)	
LD50 oral rat	2463 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)	
LD50 oral rat	2326 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral)
LD50 oral	930 mg/kg
LD50 dermal rabbit	> 1000 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LD50 dermal	> 1000 mg/kg
LC50 Inhalation - Rat	> 4.83 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
LC50 Inhalation - Rat (Dust/Mist)	20 mg/l/4h

Skin corrosion/irritation	Not classified pH: Not applicable.
Serious eye damage/irritation	Not classified pH: Not applicable.
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified
Carcinogenicity	May cause cancer.

Reproductive toxicity	Not classified
STOT-single exposure	Not classified

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)	
STOT-single exposure	Causes damage to organs. May cause drowsiness or dizziness.

STOT-repeated exposure	Not classified

Vinyltris(methylethylketoxime)silane (2224-33-1)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard	Not classified
Viscosity, kinematic	No data available
Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met.
Symptoms/effects after inhalation	May cause an allergic skin reaction.
Symptoms/effects after skin contact	May cause an allergic skin reaction.
Symptoms/effects after eye contact	None under normal conditions.
Symptoms/effects after ingestion	None under normal conditions.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	Harmful to aquatic life with long lasting effects.

Calcium carbonate (1317-65-3)	
LC50 - Fish [1]	> 10000 mg/l (Oncorhynchus mykiss (rainbow trout)
EC50 - Crustacea [1]	> 1000 mg/l (Daphnia magna (Water flea)
EC50 72h - Algae [1]	289 mg/l Desmodesmus subspicatus (green algae)
NOEC chronic algae	75 mg/l

Vinyltris(methylethylketoxime)silane (2224-33-1)	
LC50 - Fish [1]	1011.11 mg/l (96 h, Pisces, Fresh water, Read-across)
EC50 - Crustacea [1]	241.08 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia sp., Fresh water, Read-across)
EC50 72h - Algae [1]	19.19 mg/l (Algae, Fresh water, Read-across, Growth rate)

butan-2-one O,O',O''-(methylsilylidyne)trioxime (22984-54-9)	
LC50 - Fish [1]	≈ 972.34 mg/l (Pimephales promelas) (freshwater, stat., anal. OECD 203, read-across)
EC50 - Crustacea [1]	231.84 mg/l (Daphnia magna) (freshwater, stat., OECD 202, read-across)

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)	
LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oryzias latipes, Semi-static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	201 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)	
ErC50 algae	11.8 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Selenastrum capricornutum, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

CFS-SP SIL	
Persistence and degradability	Not established.

Vinyltris(methylethylketoxime)silane (2224-33-1)	
Not rapidly degradable	
Persistence and degradability	Not readily biodegradable in water.

butan-2-one O,O',O''-(methylsilylidyne)trioxime (22984-54-9)	
Not rapidly degradable	
Persistence and degradability	Not readily biodegradable in water.

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)	
Not rapidly degradable	
Persistence and degradability	Not readily biodegradable in water. Inherently biodegradable.

12.3. Bioaccumulative potential

CFS-SP SIL	
Bioaccumulative potential	Not established.

Vinyltris(methylethylketoxime)silane (2224-33-1)	
BCF - Other aquatic organisms [1]	364.8 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	10.19 (Estimated value, KOWWIN)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

butan-2-one O,O',O''-(methylsilylidyne)trioxime (22984-54-9)	
BCF - Fish [1]	0.5 – 5.8 (6 week(s), Cyprinus carpio, Flow-through system, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	0.36 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)	
BCF - Fish [1]	0.5 – 5.8 (OECD 305: Bioconcentration: Flow-Through Fish Test, 42 day(s), Cyprinus carpio, Fresh water, Experimental value, GLP)
Partition coefficient n-octanol/water (Log Pow)	0.63 (Experimental value, Equivalent or similar to OECD 117)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Vinyltris(methylethylketoxime)silane (2224-33-1)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	5.773 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

Vinyltris(methylethylketoxime)silane (2224-33-1)	
Ecology - soil	Adsorbs into the soil.

butan-2-one O,O',O''-(methylsilylidyne)trioxime (22984-54-9)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	5.481 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.

2-butanone oxime; ethyl methyl ketoxime; ethyl methyl ketone oxime (96-29-7)	
Surface tension	30.29 mN/m (16 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.55 (log Koc, SRC PCKOCWIN v2.0, QSAR)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation: Disposal must be done according to official regulations.
Waste treatment methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Disposal must be done according to official regulations.
Additional information: Do not re-use empty containers.
Ecological waste information: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
Not applicable	Not applicable	Not applicable	Not applicable
14.2. 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

DOT	TDG	IMDG	IATA
No supplementary information available			

14.6. Special precautions for user

DOT
Not applicable

TDG
Not applicable

IMDG
Not applicable

IATA
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 present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

No additional information available

15.3. US State regulations

CFS-SP SIL	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

⚠ **WARNING:** This product can expose you to Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Revision date	10/27/2025
Data sources	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Other information	None.

Full text of hazard classes and H-statements	
H227	Combustible liquid
H301	Toxic if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness
H350	May cause cancer.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure

Abbreviations and acronyms	
ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association

Abbreviations and acronyms	
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

Indication of changes:			
Section	**Changed item**	**Change**	**Comments**
		Modified	according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

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.

CERTIFICATE OF COMPLIANCE

Certificate Number	20140513-R13240
Report Reference	R13240
Issue Date	2014-May-13

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
CFS-SP SIL Firestop Joint Spray for use in Perimeter Fire Containment Systems currently described in the UL Fire Resistance Directory.

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

Standard(s) for Safety: ANSI/ASTM E2307 (2010), "Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus."

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

Architectural Testing

ASTM E 90 SOUND TRANSMISSION LOSS TEST REPORT

Rendered to:

HILTI, INC.

SERIES/MODEL: CFS-SP WB

TYPE: Firestop Spray

Summary of Test Results			
Data File No.	**Description**	**STC**	**OITC**
A3412.01	Base wall with 96" by 2" gap filled with 6 pcf mineral wool and CFS-SP WB, Firestop Spray brush-applied to the mineral wool on the source side	59*	46*

****Note**: *An STC or OITC rating cannot be applied directly to sealant.*

Reference should be made to Architectural Testing, Inc. Report No. A3412.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

10/13/2025

Hilti Installer Training Certificates

Barrier Technologies LLC

6860 W 153rd St

Overland Park, KS 66223

(913) 905-2799

SUBJECT: HILTI FIRESTOP INSTALLER TRAINING

The individuals listed below were provided an overview and training on the proper selection and installation of the Hilti Firestop systems and products discussed, and agree to comply with all the rules and regulations governing their use.

COURSE: BASIC FIRESTOP INSTALLER TRAINING

APPLICATIONS: ▪ Firestopping Joints ▪ Firestopping Through-Penetrations ▪ Other: HCP

INSTRUCTOR: Alec Barkley **LOCATION:** Overland Park, KS

DATE: 10/13/2025 **DURATION:** 1.5 Hrs *(Hilti recomends regular, continued installer training every 3 years)*

Installer Training covered the following topics:

- Key concepts of fire protection
- Firestopping Applications
- Firestop Testing Standards
- Interpretation of System Nomenclature
- Types of System Ratings
- Categories of Firestop products
- Product Portfolios
- Hilti Construction Platform
- _____
- _____

Additionally a question and answer session was held with the trainer.

The following individuals were trained:

1: Ryan Nickell	**5:** Luis Camunez	**9:** Ian Goolsby	**13:** N/A	**17:** N/A	**21:** N/A
2: Jesse Parmenter	**6:** Dakota Parmenter	**10:** N/A	**14:** N/A	**18:** N/A	**22:** N/A
3: Marco Molina	**7:** Michael McFarland	**11:** N/A	**15:** N/A	**19:** N/A	**23:** N/A
4: Manuel Castro	**8:** Ryan Kendrick	**12:** N/A	**16:** N/A	**20:** N/A	**24:** N/A

If you have any questions, or if I can be of any further assistance, please do not hesitate to contact me.

Sincerely,

Alec Barkley

Hilti Fire Protection Specialist

Alec.Barkley@hilti.com