

10 Danforth Street
Portland, ME 04101
Ph : (207) 773-3625

Submittal

Job: 1332
Press Hotel
390 Congress Street
Portland, ME 04101

Spec Section No: 07840
Submittal No: 001
Revision No: 0
Sent Date: 3/12/2014

Spec Section Title: Firestopping
Submittal Title: Electrical Work Firestopping Data

Contractor:
Wright-Ryan Construction, Inc.
Alyssa Parker

SUBMITTAL REVIEW:
Reviewed for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Subcontractor from compliance with the project plans and specifications, nor departure therefrom. The Subcontractor remains responsible for details and accuracy, for conforming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly and for performing the work in a safe manner.
WRIGHT-RYAN CONSTRUCTION, INC
BY: RRC DATE: 3-12-14

Architect (Primary):
Archetype PA
Kevin Gough

Architect's Stamp

Engineer's Stamp

PROJECT PRESS HOTEL	
PROJECT #	SHOP DWG # 064
<input type="checkbox"/> REVIEWED	<input checked="" type="checkbox"/> NO EXCEPTIONS TAKEN
<input type="checkbox"/> NOT REVIEWED	<input type="checkbox"/> MAKE CORRECTIONS NOTED
<input type="checkbox"/> REJECTED	<input type="checkbox"/> REVISE AND RESUBMIT
Date <u>21 MAR 14</u> by <u>[Signature]</u>	
Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the drawings and specifications. This review is only for general conformance with the design concept of the project and general conformance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions for selecting fabrication processes and techniques of construction, for coordinating his work with that of all other trades and for performing his work in a safe and satisfactory manner.	
ARCHETYPE, PA. 48 UNION WHARF PORTLAND, ME 04101 TELE. (207) 772-6022	

Firestop Submittal Package

Project:

Date:

Submitted by:

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

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Firestop Submittal Package

Table of Contents

CFS-SL GP Gangplate
CFS-SL RK Retrofit Sleeve Kit
CFS-SL SK Firestop Sleeve Kit
CP 606 Flexible Firestop Sealant
CP 653 Speed Sleeve
FS-ONE Intumescent Firestop Sealant
Firestop Box Insert

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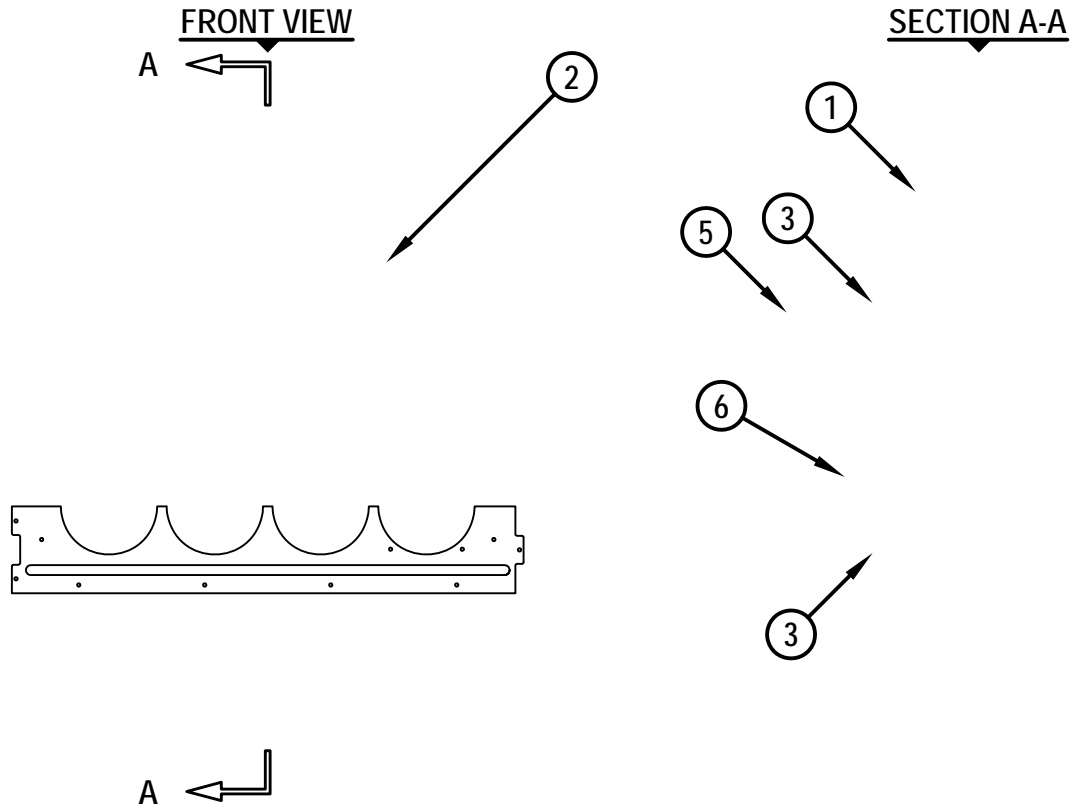
UL/cUL SYSTEM NO. W-L-3395

MULTIPLE CABLE BUNDLES THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.

T-RATING = 1/4-HR.

L-RATING = SEE TABLES BELOW



WL3395c.082813

1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U400, V400, OR W400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES :
 - A. [NOT SHOWN] STEEL STUDS TO BE MINIMUM 3-1/2" WIDE (SPACED MAXIMUM 24" OC).
 - B. NOMINAL 5/8" THICK GYPSUM WALLBOARD. TYPE, NUMBER OF LAYERS, AND SHEET ORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL DESIGN.
2. HILTI CFS-SL GP FIRESTOP GANGPLATE (16" OR 24") ORIENTED VERTICALLY OR HORIZONTALLY AND SECURED TO THE FACE OF THE WALL OR DIRECTLY AGAINST STUDS PRIOR TO INSTALLATION OF GYPSUM BOARD (SEE MAXIMUM SIZE OF OPENING TABLE FOR INSTALLATION OPTIONS). IN 1-HR. WALLS, BLANK DOUBLE STACKED GANGPLATES (NO CABLES) ARE LIMITED TO HORIZONTAL INSTALLATION WITH FASTENERS INTO WALL STUDS.



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Sheet	1 of 3
Scale	3/32" = 1"
Date	Aug. 28, 2013

Drawing No.
WL
3395c

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MULTIPLE CABLE BUNDLES THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.

T-RATING = 1/4-HR.

L-RATING = SEE TABLES BELOW

WL3395c.082813

3. ONE OF THE FOLLOWING TO BE INSTALLED WITHIN EACH CIRCULAR OPENING PORT OF THE HILTI CFS-SL GP FIRESTOP GANGPLATE. THE TWO INTEGRAL SET SCREWS ARE TO BE TIGHTENED TO FIRMLY BEAR AGAINST EACH DEVICE TO RETAIN IT IN POSITION.
 - A. HILTI CP 653 SPEED SLEEVE (4") CENTERED WITHIN WALL. INNER FABRIC SEAL SHOULD BE TWISTED CLOSED.
 - B. HILTI CFS-SL RK FIRESTOP RETROFIT SLEEVE (4") CENTERED WITHIN WALL (ALSO SEE ITEM NO. 6).
 - C. HILTI CFS-SL SK FIRESTOP SLEEVE (4") CENTERED WITHIN WALL (ALSO SEE ITEM NO. 6).
4. [NOT SHOWN] HILTI CFS-SL CAP FIRESTOP GANGPLATE CAP TO BE INSTALLED TO CLOSE PORT OPENINGS WHERE NO DEVICES ARE INSTALLED. PLATE INSTALLED PER ACCOMPANYING INSTALLATION INSTRUCTIONS.
5. [OPTIONAL] CABLE BUNDLES TO BE A COMBINATION OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 100 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE JACKET AND INSULATION.
 - C. MAXIMUM 4/0 AWG TYPE RHH GROUND CABLE.
 - D. MAXIMUM 4 PAIR NO. 22 AWG CAT 5 OR 6 COMPUTER CABLE.
 - E. MAXIMUM RG 6/U COAXIAL CABLE.
 - F. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE (24 FIBER) WITH PVC OR PE JACKET AND INSULATION.
 - G. MAXIMUM 3/C NO. 12 AWG MC CABLE.
6. HILTI CFS-PL FIRESTOP PLUG (2" OR 4") CUT TO FIT AROUND THE CABLE BUNDLE AND INSTALLED TIGHTLY WITHIN HILTI FIRESTOP RETROFIT SLEEVE OR FIRESTOP SLEEVE FLUSH WITH THE END OF THE SLEEVE ON BOTH SIDES OF THE WALL.

FIRESTOP DEVICE	MAXIMUM OPENING SIZE GANGPLATE MOUNTING	
	SURFACE MOUNTED	STUD MOUNTED
24" PLATE :
SINGLE	20-1/2" x 5-1/2"	23" x 6-3/4"
DOUBLE (STACKED)	20-1/2" x 13-1/4"	23" x 14-1/4"
16" PLATE :
SINGLE	15" x 5-1/2"	15-3/16" x 6-3/4"
DOUBLE (STACKED)	15" x 13-1/4"	15-3/16" x 14-1/4"

NOTE : CABLES MAY REPRESENT 0% TO 60% OF CROSS-SECTIONAL AREA OF DEVICE FOR EACH CFS-RK AND CFS-SL SK FIRESTOP DEVICE AND 0% TO 100% VISUAL FILL FOR EACH CP 653 SPEED SLEEVE.

 Hilti Firestop Systems	HILTI, Inc. Tulsa, Oklahoma USA (800) 879-8000	<i>Sheet</i> 2 of 3	<i>Drawing No.</i> WL 3395c
		<i>Scale</i> -	
		<i>Date</i> Aug. 28, 2013	
<i>Saving Lives through Innovation and Education</i>			

UL/cUL SYSTEM NO. W-L-3395

MULTIPLE CABLE BUNDLES THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.

T-RATING = 1/4-HR.

L-RATING = SEE TABLES BELOW

WL3395c.082813

GANGPLATES WITH NO CABLES WITH ANY CABLE MANAGEMENT DEVICE		
	L-RATING (AMBIENT AND 400° F)	
	CFM / GANGPLATE	CFM / SQ FT
CAP* INSTALLED IN ALL PORTS	<1	1.2
CAP* AND 1 EMPTY DEVICE	1	1.3
CAP* AND 2 EMPTY DEVICES	2	2.6
CAP* AND 3 EMPTY DEVICES (IF 16" GANGPLATE, THEN NO CAP INSTALLED)	2.5	3.2
4 EMPTY DEVICES (24" GANGPLATE ONLY)	3.5	4.5

GANGPLATES WITH COMBINATION OF CABLES WITH ANY CABLE MANAGEMENT DEVICE		
CFS-SL RK AND CFS-SL SK ARE LIMITED TO MAX 33% AGGREGATE FILL. CP 653 ALLOWS FOR MAX 100% VISUAL FILL	L-RATING (AMBIENT AND 400° F)	
	CFM / GANGPLATE	CFM / SQ FT
CAP* AND 1 DEVICE INSTALLED	2	2.6
CAP* AND 2 DEVICES INSTALLED	4	5.1
CAP* AND 3 DEVICES INSTALLED (IF 16" GANGPLATE, THEN NO CAP INSTALLED)	6	7.7
4 DEVICES INSTALLED (24" GANGPLATE ONLY)	8	10.2

GANGPLATES WITH CAT 5 OR CAT 6 COMPUTER CABLES ONLY WITH CP 653 SPEED SLEEVE		
CP 653 ALLOWS FOR MAX 100% VISUAL FILL OF CABLES	L-RATING (AMBIENT AND 400° F)	
	CFM / GANGPLATE	CFM / SQ FT
CAP* AND 1 DEVICE INSTALLED WITH CAT 5/6 CABLES ONLY	1.5	1.9
CAP* AND 2 DEVICES INSTALLED WITH CAT 5/6 CABLES ONLY	3	3.8
CAP* AND 3 DEVICES INSTALLED WITH CAT 5/6 CABLES ONLY (IF 16" GANGPLATE, THEN NO CAP INSTALLED)	4	5.1
4 DEVICES INSTALLED WITH CAT 5/6 CABLES ONLY (24" GANGPLATE ONLY)	5.5	7

* INDICATES CFS-SL CAP FIRESTOP GANGPLATE CAP INSTALLED TO CLOSE ALL PORT OPENINGS WHERE NO DEVICES ARE INSTALLED.



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Sheet	3 of 3
Scale	-
Date	Aug. 28, 2013

Drawing No.
**WL
3395c**

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UL/cUL SYSTEM NO. C-AJ-3284

CABLE BUNDLE THROUGH CONCRETE/FLOOR OR BLOCK WALL ASSEMBLY

F-RATING = 2-HR.

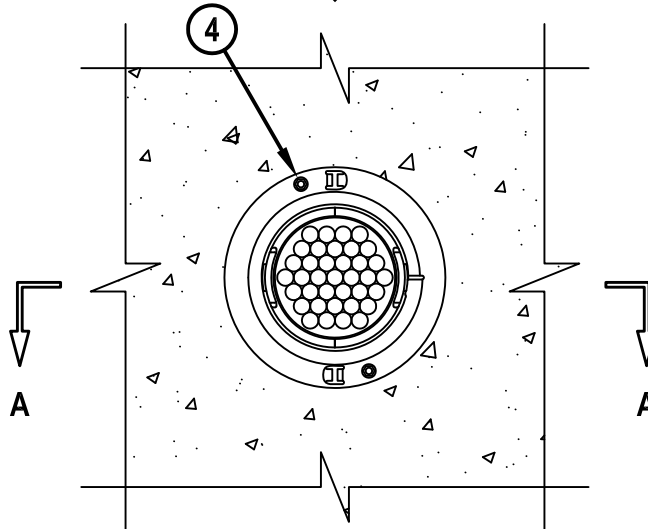
T-RATING = 1/2-HR.

L-RATING AT AMBIENT = LESS THAN 1 CFM (SEE TABLE)

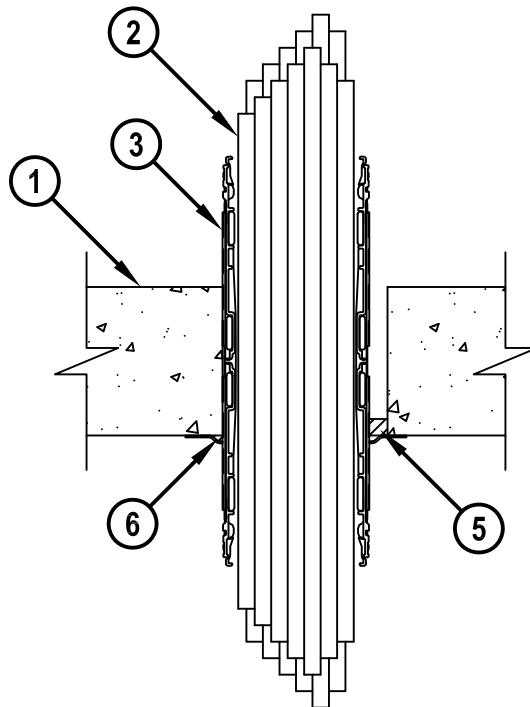
L-RATING AT 400°F = LESS THAN 1 CFM (SEE TABLE)

CAJ3284b.031612

BOTTOM VIEW



SECTION A-A



Hilti Firestop Systems

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Sheet	1 of 2
Scale	1 1/64" = 1"
Date	Mar. 16, 2012

Drawing No.

**CAJ
3284b**

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CABLE BUNDLE THROUGH CONCRETE/FLOOR OR BLOCK WALL ASSEMBLY

F-RATING = 2-HR.

T-RATING = 1/2-HR.

L-RATING AT AMBIENT = LESS THAN 1 CFM (SEE TABLE)

L-RATING AT 400°F = LESS THAN 1 CFM (SEE TABLE)

CAJ3284b.031612

1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED PRECAST (HOLLOW-CORE) CONCRETE FLOOR (MINIMUM 6" THICK).
 - C. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. CABLE BUNDLE TO BE A COMBINATION OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 100 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE JACKET AND INSULATION.
 - C. MAXIMUM 4/0 AWG TYPE RHH GROUND CABLE.
 - D. MAXIMUM 4 PAIR NO. 22 AWG CAT 6 COMPUTER CABLE.
 - E. MAXIMUM RG 6/U COAXIAL CABLE.
 - F. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE (24 FIBER) WITH PVC OR PE JACKET AND INSULATION.
 - G. MAXIMUM 20/C NO. 22 AWG SHIELDED PRINTER CABLE WITH PVC JACKET.
 - H. MAXIMUM 2/C NO. 18 AWG POWER OR NON-POWER LIMITED FIRE ALARM CABLE WITH OR WITHOUT METAL JACKET (MANUFACTURED BY AFC CABLE SYSTEMS, INC.).
 - I. MAXIMUM 1/4" DIAMETER S-VIDEO CABLE CONSISTING OF TWO MAXIMUM 24 AWG 75 OHM COAX OR TWISTED PAIR CABLE WITH PE INSULATION AND PVC JACKET.
3. HILTI CP 653 SPEED SLEEVE (2" OR 4") SLID INTO AND CENTERED WITHIN FLOOR OR WALL. DEVICE FLANGES SPUN CLOCKWISE ONTO DEVICE THREADS, BUTTING TIGHTLY TO BOTTOM SIDE OF FLOOR, OR BOTH SIDES OF WALL.
4. SECURE DEVICE FLANGE TO BOTTOM OF FLOOR WITH TWO 1-1/4" LONG CONCRETE SCREWS OR ANCHORS.
5. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT OR 1" DEPTH CP 618 FIRESTOP PUTTY STICK FLUSH WITH BOTTOM SURFACE OF FLOOR, OR BOTH SURFACES OF WALL.
6. [FOR L-RATING] MINIMUM 1/4" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

MAX CABLE FILL	CABLE TYPE	L RATING, CFM/SQ FT		L RATING, CFM	
		AMBIENT	400°F	AMBIENT	400°F
0%	—	1	2	LESS THAN 1	LESS THAN 1
100%	ANY CABLES (ITEM NO. 2) IN ANY COMBINATION	7	7	LESS THAN 1	LESS THAN 1

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3" (FOR 2" DEVICE) OR 5" (FOR 4" DEVICE).
 2. CABLES MAY REPRESENT 0% TO 100% VISUAL FILL OF DEVICE.
 3. ANNULAR SPACE BETWEEN DEVICE AND PERIPHERY OF OPENING = MINIMUM 0".
 4. L-RATING APPLIES ONLY WHEN HILTI FS-ONE FIRESTOP SEALANT IS USED.
 5. HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL.



Hilti Firestop Systems

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Sheet	2 of 2
Scale	-
Date	Mar. 16, 2012

Drawing No.

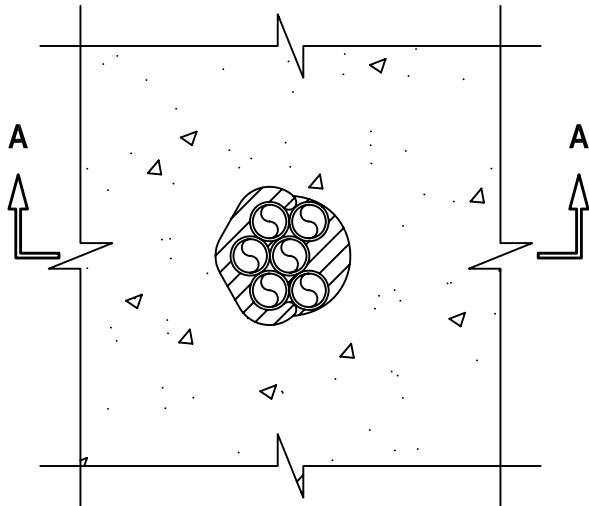
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3284b**

MULTIPLE NONMETALLIC PIPES THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

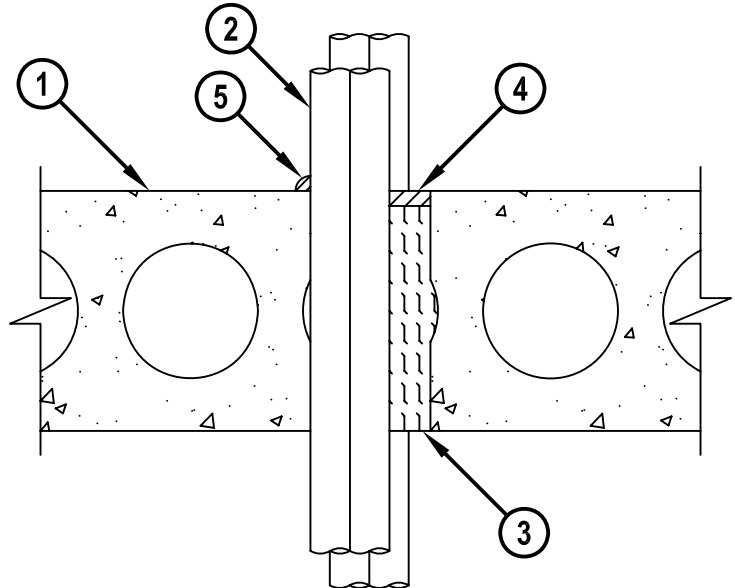
F-RATING = 3-HR.
T-RATING = 2 3/4-HR.

CBJ2028a.042407

TOP VIEW



SECTION A-A



1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 8" THICK).
 - B. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 8-1/2" THICK).
 - C. ANY UL CLASSIFIED PRECAST (HOLLOW-CORE) CONCRETE FLOOR (MINIMUM 8" THICK).
 - D. ANY UL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEMS (MAX. QTY. = 6) TO BE ANY COMBINATION OF THE FOLLOWING (CLOSED PIPING SYSTEM ONLY) :
 - A. MAXIMUM 1" NOMINAL DIAMETER PVC PLASTIC PIPE (CELLULAR OR SOLID CORE).
 - B. MAXIMUM 1" NOMINAL DIAMETER RIGID NONMETALLIC CONDUIT (RNC) PVC CONDUIT.
 - C. MAXIMUM 1" NOMINAL DIAMETER ENT.
 - D. MAXIMUM 1" NOMINAL DIAMETER PEX TUBING.
3. MINIMUM 7-1/2" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED, AND RECESSED TO ACCOMMODATE SEALANT.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT FLUSH WITH TOP SURFACE OF FLOOR.
5. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 4".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-1/2".
 3. CLOSED PIPING SYSTEM ONLY (PVC AND RNC = SCH 40; CPVC = SDR 13.5; PEX = SDR 9).
 4. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL.



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Sheet	1 of 1
Scale	5/32" = 1"
Date	Apr. 24, 2007

Drawing No.

**CBJ
2028a**

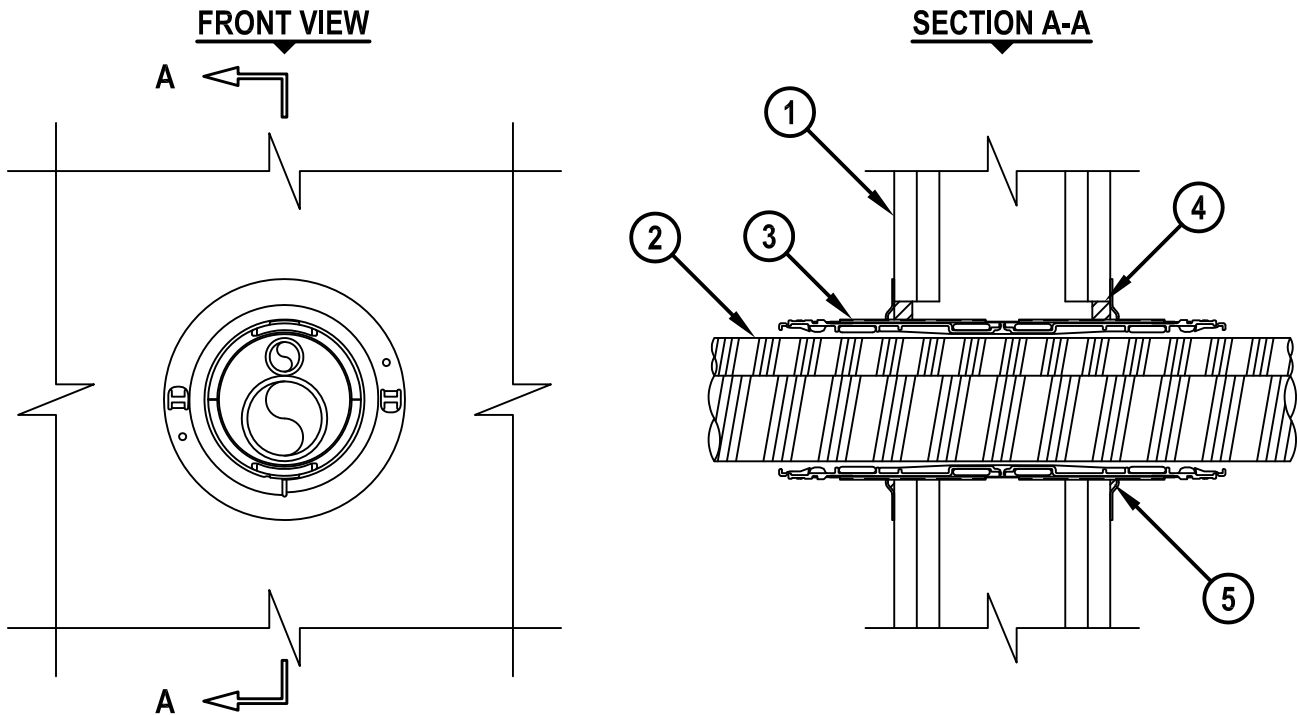
UL SYSTEM NO. W-L-2538

MULTIPLE PLASTIC PIPES THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.

T-RATING = 0-HR.

WL2538a.102108



1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300, U400 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES :
 - A. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER (SPACED MAXIMUM 16" OC). STEEL STUDS TO BE MINIMUM 3-1/2" WIDE (SPACED MAXIMUM 24" OC).
 - B. NOMINAL 5/8" THICK GYPSUM WALLBOARD. TYPE, NUMBER OF LAYERS, AND SHEET ORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL DESIGN.
2. ONE OR MORE MAXIMUM 2" NOMINAL DIAMETER ENT (FORMED FROM PVC).
3. HILTI CP 653 SPEED SLEEVE (2" OR 4") SLID INTO AND CENTERED WITHIN WALL. DEVICE FLANGES SPUN CLOCKWISE ONTO DEVICE THREADS, BUTTING TIGHTLY TO BOTH SIDES OF WALL.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT OR CP 606 FLEXIBLE FIRESTOP SEALANT FLUSH WITH BOTH SURFACES OF WALL.
5. MINIMUM 1/4" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT OR CP 606 FLEXIBLE FIRESTOP SEALANT APPLIED AROUND PERIPHERY OF DEVICE.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 2-1/2" (FOR 2" DEVICE) OR 4-1/2" (FOR 4" DEVICE).
2. ANNULAR SPACE BETWEEN DEVICE AND PERIPHERY OF OPENING = MINIMUM 0".



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Sheet	1 of 1
Scale	3/16" = 1"
Date	Oct. 21, 2008

Drawing No.
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2538a

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U.L. SYSTEM NO. WL2075

ENT THROUGH 1-HR. OR 2-HR. GYPSUM WALL ASSEMBLY

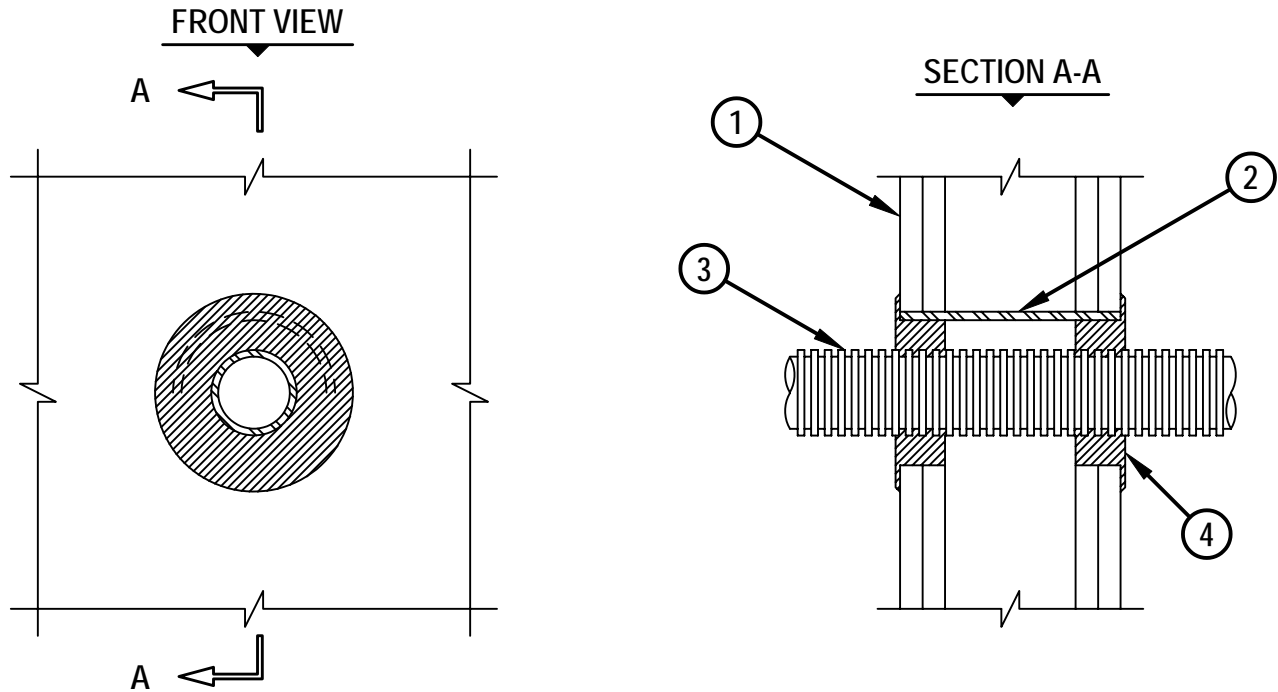
F RATING = 1-HR. AND 2-HR.

T RATING = 0-HR. AND 2-HR. (FOR 1-HR. AND 2-HR. WALLS, RESPECTIVELY)

L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.

L RATING AT 400°F = 4 CFM/SQ. FT.

WL2075g.050698



1. GYPSUM WALL ASSEMBLY (U.L. CLASSIFIED U300 OR U400 SERIES) (1-HR OR 2-HR FIRE-RATING) (2-HR SHOWN).
2. OPTIONAL: MAXIMUM 4" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 40 OR THINNER).
3. MAXIMUM 2" NOMINAL DIAMETER ENT.
4. HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT:
 - A. MINIMUM 5/8" DEPTH, FOR A 1-HR FIRE-RATING.
 - B. MINIMUM 1-1/4" DEPTH, FOR A 2-HR FIRE-RATING.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 4".
2. ANNULAR SPACE = 3/4".

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FIRESTOP SYSTEMS

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Sheet	1 of 1
Scale	3/16" = 1"
Date	MAY 11, 1998

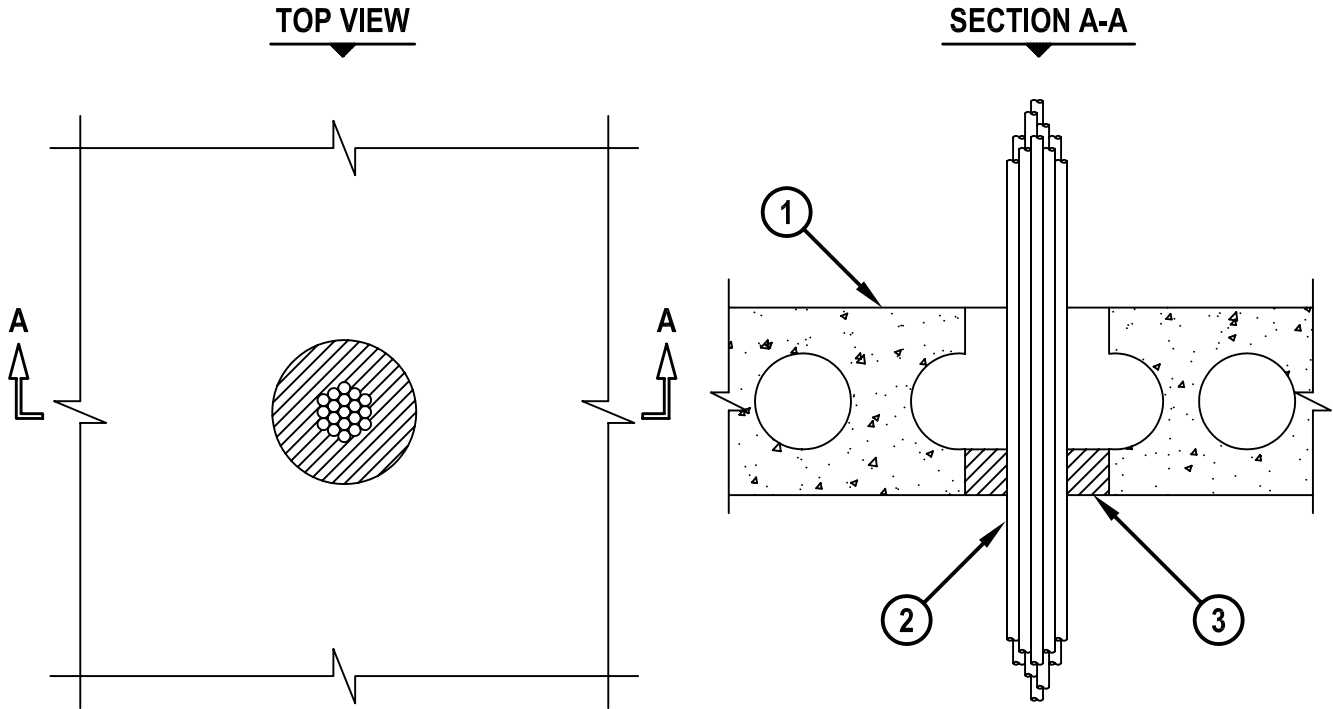
Drawing No.
WL
2075g

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**CABLE BUNDLE THROUGH PRECAST (HOLLOW CORE)
CONCRETE FLOOR ASSEMBLY**

F-RATING = 2-HR.
T-RATING = 1/2-HR.

CBJ3024a.061400



1. PRE-CAST (HOLLOW-CORE) CONCRETE FLOOR ASSEMBLY (MINIMUM 8" THICK) (2-HR. FIRE-RATING).
2. CABLE BUNDLE TO CONSIST OF THE FOLLOWING:
 - A. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - B. MAXIMUM 500 KCMIL POWER CABLE WITH PVC JACKET.
 - C. 7/C NO. 8 AWG (WITH GROUND) WITH PVC JACKET.
 - D. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE (MAXIMUM 24 FIBER).
 - E. MAXIMUM 3/C NO. 12 AWG METAL-CLAD CABLE.
3. MINIMUM 2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT FLUSH WITH BOTTOM SURFACE OF FLOOR.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 6".
 2. CABLES TO FILL A MAXIMUM 45% OF CROSS-SECTIONAL AREA OF OPENING.
 3. CABLES TO BE CENTERED IN OPENING WITH ANNULAR SPACE OF MAXIMUM 1".



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Sheet	1 of 1
Scale	1/8" = 1"
Date	JUNE 14, 2000

Drawing No.
**CBJ
3024a**

UL/cUL SYSTEM NO. C-AJ-8099

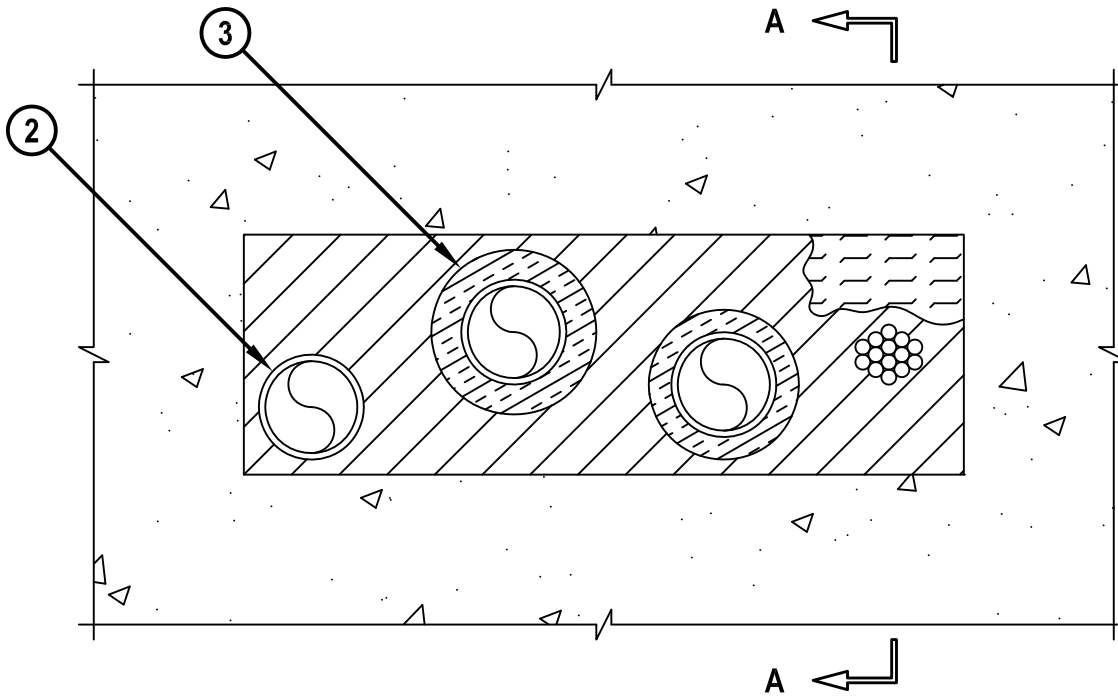
MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 3-HR.

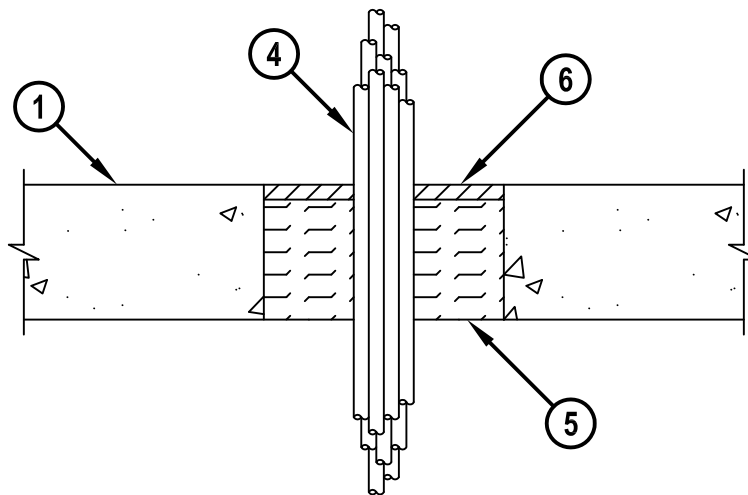
T-RATING = 0-HR. OR 3/4-HR.

CAJ8099e.040808

TOP VIEW



SECTION A-A



Hilti Firestop Systems

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Sheet	1 of 2
Scale	5/32" = 1"
Date	Apr. 08, 2008

Drawing No.

**CAJ
8099e**

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MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 3-HR.

T-RATING = 0-HR. OR 3/4-HR.

CAJ8099e.040808

1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK).
 - B. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 5" THICK).
 - C. PRECAST (HOLLOW-CORE) CONCRETE FLOOR (MINIMUM 6" THICK).
 - D. ANY UL CLASSIFIED CONCRETE BLOCK WALL.
2. ONE OR MORE OF THE FOLLOWING PIPES, AND IN ANY COMBINATION MAY BE INSTALLED WITHIN THE OPENING :
 - A. MAXIMUM 3" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 3" NOMINAL DIAMETER CAST IRON PIPE.
 - C. MAXIMUM 3" NOMINAL DIAMETER COPPER PIPE.
 - D. MAXIMUM 3" NOMINAL DIAMETER STEEL CONDUIT OR EMT.
 - E. MAXIMUM 1" NOMINAL DIAMETER FLEXIBLE STEEL CONDUIT.
 - F. MAXIMUM 2" NOMINAL DIAMETER FLEXIBLE STEEL GAS PIPING (WITH OR WITHOUT PLASTIC COVERING) MANUFACTURED BY OMEGA FLEX, INC. OR WARD MFG., INC.
 - F. MAXIMUM 1" NOMINAL DIAMETER FLEXIBLE STEEL GAS PIPING (WITH OR WITHOUT PLASTIC COVERING) MANUFACTURED BY GASTITE, DIVISION OF TITFLEX.
3. [OPTIONAL] ANY OR ALL PIPES MAY BE INSULATED WITH MAXIMUM 1" THICK GLASS-FIBER OR MAXIMUM 3/4" THICK AB/PVC PIPE INSULATION.
4. MAXIMUM 2" DIAMETER CABLE BUNDLE TO CONSIST OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - B. MAXIMUM 500 KCMIL POWER CABLE WITH PVC JACKET.
 - C. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
 - D. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE (24 FIBER).
 - E. MAXIMUM 3/C NO. 12 AWG METAL-CLAD CABLE.
5. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED. WHEN INSTALLED IN PRECAST (HOLLOW-CORE) CONCRETE FLOOR, MINERAL WOOL TO FILL FLOOR, FLUSH WITH BOTTOM AND RECESSED TO ACCOMMODATE SEALANT ON TOP SIDE.
6. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.

NOTES : 1. MAXIMUM AREA OF SQUARE, RECTANGULAR, OR CIRCULAR OPENING IS 192 SQ. IN. WITH A MAXIMUM DIMENSION OF 24" IN NORMAL CONCRETE, 49 SQ. IN. WITH A MAXIMUM DIMENSION OF 7" IN PRECAST (HOLLOW-CORE) CONCRETE.
 2. ANNULAR SPACE BETWEEN CABLE BUNDLE, PIPES, AND INSULATED PIPES = MINIMUM 1/2", MAXIMUM 3-1/8".
 3. ANNULAR SPACE BETWEEN PIPES/INSULATED PIPES AND PERIPHERY OF OPENING = MINIMUM 1/2", MAXIMUM 5".
 4. ANNULAR SPACE BETWEEN CABLE BUNDLE & PERIPHERY OF OPENING = MIN. 2", MAX. 4".
 5. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



HILTI, Inc.
 Tulsa, Oklahoma USA (800) 879-8000

Sheet	2 of 2
Scale	-
Date	Apr. 08, 2008

Drawing No.

**CAJ
8099e**

UL SYSTEM NO. W-L-2165

OPTICAL-FIBER RACEWAY OR ENT THROUGH GYPSUM WALL ASSEMBLY

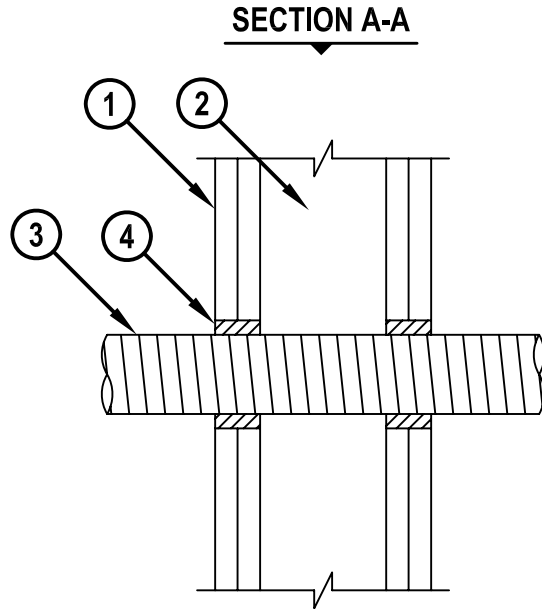
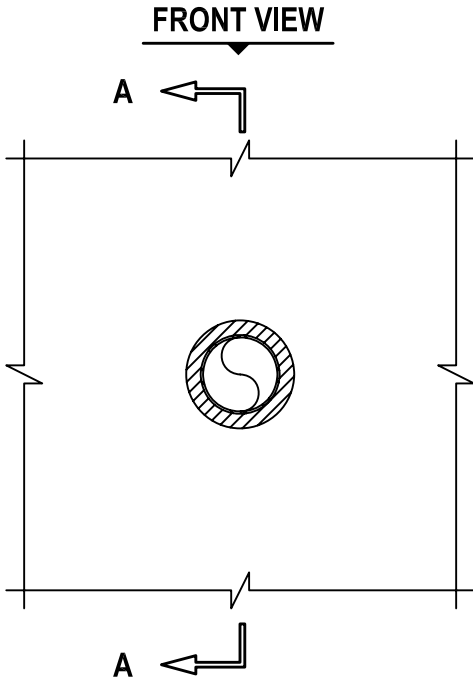
F-RATING = 2-HR.

T-RATING = 2-HR.

L-RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.

L-RATING AT 400°F = 2 CFM/SQ. FT.

WL2165d.072505



1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300, U400 OR V400 SERIES) (2-HR. FIRE-RATING).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
 - A. MAXIMUM 2" NOMINAL DIAMETER OPTICAL-FIBER RACEWAY (INNERDUCT).
 - B. MAXIMUM 2" NOMINAL DIAMETER ENT.
4. MINIMUM 1-1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3".
2. ANNULAR SPACE = MINIMUM 1/4", MAXIMUM 3/8".



HILTI, Inc.
Tulsa, Oklahoma USA (918) 252-6000

Sheet	1 of 1
Scale	3/16" = 1"
Date	July 25, 2005

Drawing No.
**WL
2165d**

Firestop Gangplate and Gangplate CAP CFS-SL GP and CFS-SL GP CAP

Product description

- Hilti Gangplate is a pre-assembled solution ideal for grouping 4" diameter Hilti Cable Management devices thereby allowing for ultimate cable capacity
- Offered in 16" and 24" sizes for common stud construction
- One kit includes (2) plates. One for each side of the wall.

Product features

- Pre-assembled, ready-to-use out of the package for quick, simple installation. No assembly required.
- Integrated smoke seals eliminate the need for additional firestop sealant
- Easily stud-mount or surface mount for new and renovation construction projects
- 16" and 24" Gangplates for common stud construction
- Easily hang in stacks or rows for maximum productivity
- Accommodates all 4" diameter Hilti cable management devices
- Gangplate may be retrofitted for existing cable applications
- Gangplate CAP available for blank ports and future expansion
- Buy American compliant
- Meets LEED™ requirements for indoor environmental quality credit 4.1 Low Emitting Materials, Sealants and Adhesives
- Low VOC content and no CFCs or HCFCs

Areas of application

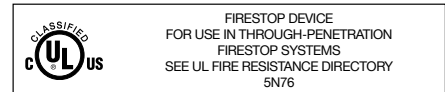
- Single and bundled cable applications
- Gypsum and CMU walls
- Renovation or new construction projects



Technical Data	CFS-SL GP
Dimensions: 16" Gangplate	16.4" x 8.3" x 1"
Dimensions: 24" Gangplate	24.4" x 8.3" x 1"
Weight: 16" Gangplate	3.3 lbs
Weight: 24" Gangplate	5.5 lbs
Tested in accordance with	ASTM E 814 CAN/ULC-S115 UL 1479

Installation instructions for Firestop Gangplate

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



CERTIFICATE OF COMPLIANCE

Certificate Number 20130124-R15431
Report Reference File R15431
Issue Date 2013-January-24
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


Firestop Device

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

Standard(s) for Safety: ANSI/UL 1479, "Fire Tests of Through-Penetration Firestops," Edition 3 – Revision Date 2012-10-19
CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems." Fourth Edition revised June 2011

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.

CFS-SL GP Firestop Gangplate and the CFS-SL GP CAP Firestop Gangplate CAP for use in Through-Penetration Firestop Systems as currently described in the UL Fire Resistance Directory.

William R. Carney, Director, North American Certification Programs
UL LLC

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



Retrofit Sleeve Kit CFS-SL RK

Product description

- Retrofit cable management device for easily and safely firestopping existing cable applications
- Offered in 2" and 4" diameter versions
- Standard kit includes (1) retrofit sleeve (2) retrofit flanges with smoke seal (2) Firestop Plugs CFS-PL

Product features

- Fast and easy installation for existing cables with ability to re-penetrate
- Integrated smoke seal eliminates the need to add sealant behind the flange
- Oversized flanges for irregular and large openings
- Pre-cured, pre-formed firestop material does not expire, eliminating shelf-life concerns
- Protects most typical firestop cable applications
- 4" diameter device is compatible with the Hilti Gangplate (CFS-SL GP)
- Buy American compliant
- Meets LEED™ requirements for indoor environmental quality credit 4.1 Low Emitting Materials, Sealants and Adhesives
- Low VOC content and no CFCs or HCFCs

Areas of application


- Single and bundled cables in gypsum and CMU walls

Examples

- Safely firestopping existing cable applications in fire rated walls, especially where future re-penetration is needed



Technical Data	CFS-SL RK
2" Device	Sleeve: OD 2.5 in / ID 2.3 in Flange: OD 8 in
4" Device	Sleeve: OD 4.5 in / ID 4.3 in Flange: OD 10 in
Overall sleeve length	10.5 in
Expansion ratio (unrestricted)	Approx. 1:3
Temperature resistance	5° F to 140° F (-15° C to 60° C)
Intumescent activation	Approx. 392° F (200° C)
Surface burning characteristics (ASTM E 84-10b)	Flame Spread: 10 Smoke Development: 15
Tested in accordance with	ASTM E 814 CAN/ULC-S115 UL 1479 ASTM E 84 (CFS-PL only)



FIRESTOP DEVICE
 FOR USE IN THROUGH-PENETRATION
 FIRESTOP SYSTEMS
 SEE UL FIRE RESISTANCE DIRECTORY
 5N76

Installation instructions for Firestop Retrofit Sleeve Kit

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



CERTIFICATE OF COMPLIANCE

Certificate Number 20130124-R15431

Report Reference File R15431

Issue Date 2013-January-24

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**

Firestop Device

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

Standard(s) for Safety:

ANSI/UL 1479, "Fire Tests of Through-Penetration Firestops,"


Edition 3 – Revision Date 2012-10-19

CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems." Fourth Edition revised June 2011

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.

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Look for the UL Classification Mark on the product.

CFS-SL SK Firestop Sleeve and CFS-SL RK Retrofit Sleeve for use in Through-Penetration Firestop Systems as currently described in the UL Fire Resistance Directory.

William R. Carney, Director, North American Certification Programs

UL LLC

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Firestop Sleeve Kit CFS-SL SK

Product description

- The Hilti Firestop Sleeve Kit offers an economical and intuitive solution for properly firestopping new cable applications requiring a sleeve
- Offered in 2" and 4" diameter versions
- Standard Kit includes (1) sleeve (2) flanges (2) Firestop Plugs CFS-PL

Product features

- Fast, easy, intuitive installation for new cable runs
- Easy to install correctly
- Simple to inspect
- Re-penetrable for future cable capacity
- Pre-cured, pre-formed firestop material does not expire, eliminating shelf-life concerns
- Protects most typical firestop penetration applications
- 4" diameter device is compatible with the Hilti Gangplate CFS-SL GP
- Buy American compliant
- Meets LEED™ requirements for indoor environmental quality credit 4.1 Low Emitting Materials
- Low VOC content and no CFCs or HCFCs

Areas of application

- Single and bundled cables in gypsum and CMU walls
- New cable applications with a sleeve

Installation instructions for Firestop Sleeve Kit

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



Technical Data	CFS-SL SK	
	2"	4"
OD (device only)	2.5"	4.5"
OD (flange)	4.7"	6.7"
ID (device only)	2.3"	4.3"
Total length	10.5 in	
Expansion ratio (unrestricted)	Approx. 1:3	
Temperature resistance	5° F to 140° F (-15° C to 60° C)	
Intumescent activation	Approx. 392° F (200° C)	
Surface burning characteristics (ASTM E 84-10b)	Flame Spread: 10 Smoke Development: 15	
Tested in accordance with	ASTM E 814 CAN/ULC-S115 UL 1479 ASTM E 84 (CFS-PL only)	



FIRESTOP DEVICE
FOR USE IN THROUGH-PENETRATION
FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
5N76



Hilti Firestop
Saving lives
through innovation
and education

CERTIFICATE OF COMPLIANCE

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Standard(s) for Safety:

ANSI/UL 1479, "Fire Tests of Through-Penetration Firestops,"


Edition 3 – Revision Date 2012-10-19

CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems." Fourth Edition revised June 2011

Additional Information:

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

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Look for the UL Classification Mark on the product.

CFS-SL SK Firestop Sleeve and CFS-SL RK Retrofit Sleeve for use in Through-Penetration Firestop Systems as currently described in the UL Fire Resistance Directory.

William R. Carney, Director, North American Certification Programs

UL LLC

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



Flexible Firestop Sealant (CP 606)

Product description

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

Product features

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

Areas of application

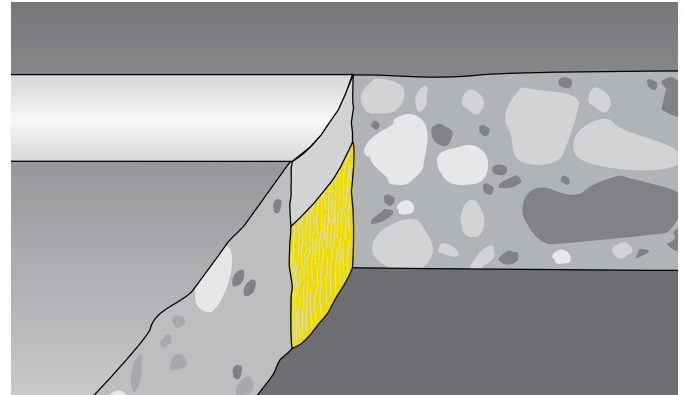
- Sealing construction/expansion joints
- Top-of-wall joints
- Metal pipes
- Cable bundles
- HVAC penetrations

For use with

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

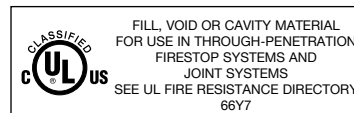
Examples

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



Technical Data*	CP 606
Chemical basis	Acrylic based firestop sealant
Color	Available in red, white and gray
Application temperature	40°F to 104°F (5°C to 40°C)
Skin-forming time	Approx. 15 min
Curing time	Approx. 3 mm / 3 days
Average volume shrinkage (ASTM C1241)	22.2%
Movement capability	Approx. 10%
Temperature resistance	-22°F to 176°F (-30°C to 80°C)
Surface burning characteristics (ASTM E 84-96)	Flame Spread: 10 Smoke Development: 0
Sound transmission classification (ASTM E 90-99)	56 (Relates to specific construction)
Tested in accordance with	<ul style="list-style-type: none"> • UL 2079 • ASTM E 814 • ASTM E 1966 • ASTM E 84 • UL 1479 • ASTM G21

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



Installation instructions for CP 606

Notice

- Before handling, read Material Safety Data Sheet and product label for safe usage and health information.
- Instructions below are general guidelines — always refer to the applicable drawing in the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information
- The use of backing material is recommended to control the sealant depth and help ensure assembly seal is complete

Opening

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

Application of firestop

2. Insert fill of mineral wool or backer (as required).
3. Apply firestop over backer.
4. Smooth firestop sealant with a trowel before the skin forms. Once cured, CP 606 can only be removed mechanically.
5. For maintenance reasons, a penetration seal can be

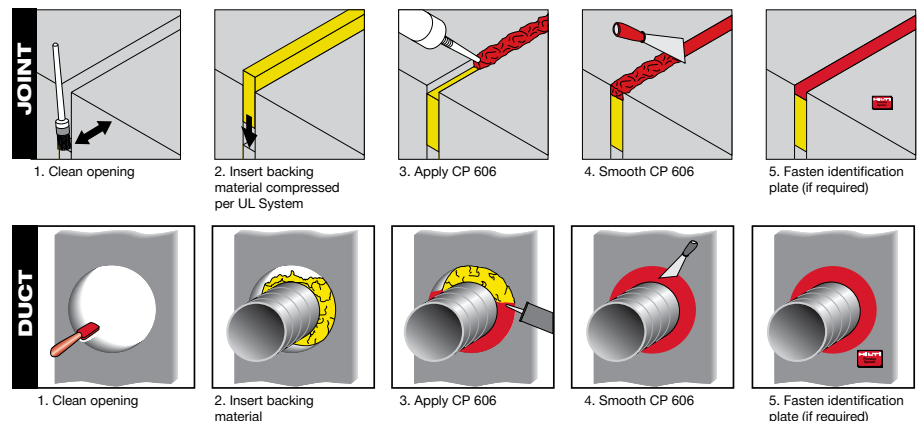
permanently marked with an identification plate and fastened in a visible position next to the seal.

Not for use

- On areas immersed in water

Storage

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



Northbrook, Illinois • (847) 272-8800
 Melville, New York • (631) 271-6200
 Santa Clara, California • (408) 985-2400
 Research Triangle Park,
 North Carolina • (919) 549-1400
 Camas, Washington • (360) 817-5500



CERTIFICATE OF COMPLIANCE

CERTIFICATE NUMBER: 070303-R16355

ISSUE DATE: March 7, 2003

Page 1 of 1

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

Report Reference: R16355, August 11, 1998


This is to Certify that representative samples of: Flexible Firestop Sealant, designated CP606

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

Standard(s) for Safety: ANSI/UL1479, Fire Tests of Through-Penetration Firestops
 ANSI/UL 2079, Tests for Fire Resistance of Building Joint Systems.

Additional Information: CP606 Sealant intended for use as a Classified Fill, Void or Cavity Material for use in various Through-Penetration Firestop Systems and Joint Systems as specified in UL's Fire Resistance Directory Volume 2.

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

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

LOOK FOR THE UL CLASSIFICATION MARKING ON THE PRODUCT

Engineer:
 Robert S. Lukasz
 Underwriters Laboratories Inc.

Review Engineer:
 Richard N. Walke
 Underwriters Laboratories Inc.

A not-for-profit organization
 dedicated to public safety and
 committed to quality service



MATERIAL SAFETY DATA SHEET

Product name: CP 606 Flexible Firestop Sealant
Description: Fire resistant sealant
Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121
Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	TLV:	PEL:	STEL:
Calcium carbonate	01317-65-3	NE	5 (R) mg/m ³	NE
Ethylene glycol	00107-21-1	C: 100 mg/m ³ (A)	NE	NA
Pigments:		NE	NE	NE
• Titanium dioxide	13463-67-7 ¹	10 mg/m ³	15 (T) mg/m ³	NE
• Red iron oxide	1309-37-1 ²	5 (R) mg/m ³	10 (fume) mg/m ³	NE
• Black Iron oxide	1317-61-9 ³	NE	NE	NE

¹ CP 606 white; ² CP 606 red, ^{1,3} CP 606 grey

Abbreviations: PEL = OSHA Permissible Exposure Limit. TLV = ACGIH Threshold Limit Value. STEL = Short Term Exposure Limit. NE = None Established. (R) = Respirable dust (T) = Total dust (A) = Aerosol

PHYSICAL DATA

Appearance:	White, red, or grey paste.	Odor:	Negligible.
Boiling Point:	Not applicable.	Vapor Pressure:	Not applicable.
Melting Point:	Not determined.	VOC Content:	71.0 g/L
Evaporation Rate:	Not applicable.	Solubility in Water:	Miscible.
pH:	Not determined.	Specific Gravity:	1.55

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not applicable.	Flammable Limits:	Not applicable.
Fire / Explosion Hazards:	None known.		
Extinguishing Media:	As appropriate for surrounding fire; material itself does not burn.		
Special Fire Fighting Procedures:	As appropriate for surrounding fire.		

REACTIVITY DATA

Stability:	Stable.	Hazardous Polymerization:	Will not occur.
Incompatibility:	Strong oxidizing agents.		
Hazardous Decomposition Products:	Not applicable.		
Conditions to Avoid:	Avoid temperature extremes that could shorten the shelf life of this product. See handling and storage requirements.		

HEALTH HAZARD DATA

Known Hazards:	Acute: Product is slightly alkaline; minor irritation is possible. Chronic: None known.		
Signs and Symptoms of Exposure:	Eyes - Can cause slight irritation but injury is unlikely. Skin - Can cause irritation with some individuals. Inhalation - No effects expected. Ingestion - Not considered to be a route of exposure. Effects of ingestion have not been determined.		
Routes of Exposure:	Inhalation, Dermal.		
Medical Conditions Aggravated by Exposure:	Eye, skin, and respiratory conditions.		
Carcinogenicity:	No ingredients are classified as a carcinogen by IARC, NTP or OSHA.		

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Flush with plenty of water. Contact a Physician if symptoms occur.
Skin:	Wash with soap and water.
Inhalation:	Move victim to fresh air. Call a Physician if symptoms occur.
Ingestion:	Seek medical attention. Do not induce vomiting unless directed by a Physician.
Other:	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation:	General (natural or mechanically induced fresh air movements).
Eye Protection:	Safety glasses with side shields.
Skin Protection:	Impermeable gloves are recommended.
Respiratory Protection:	Not normally required. Where ventilation is inadequate to control vapors, use a NIOSH-approved respirator with organic vapor cartridges. Never enter a confined space without an appropriate air supplied respirator.

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing Precautions:	Store in a cool dry area. Keep from freezing. Shelf life is one year from date of manufacture if stored between 40° and 77° F (5 - 25° C). For industrial use only. Keep out of reach of children. Keep container sealed when not in use to prevent curing of the product. Avoid contact with the eyes and skin. Practice good hygiene; i.e. wash after using and before eating or smoking.
Spill Procedures:	Allow to cure and place in a container for proper disposal in accordance with all applicable local, state, or federal requirements. Not regulated as a hazardous waste according to federal EPA definitions.

REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
HMIS Codes:	Health 1, Flammability 0, Reactivity 0, PPE B (Gloves, Glasses)
DOT Shipping Name:	Not regulated.
IATA / ICAO Shipping Name:	Not regulated.
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product contains approximately 3% ethylene glycol which is subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).
EPA Waste Code(s):	Not regulated by EPA as a hazardous waste.
Waste Disposal Methods:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

CONTACTS

Customer Service:	1 800 879 8000	Technical Service:	1 800 879 8000
Health / Safety:	1 800 879 6000	Jerry Metcalf	(x1003704)
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)		

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

Speed Sleeve (CP 653)

Product description

- Re-penetrable cable management device for electrical and telecom professionals

Product features

- Fast installation
- Easy penetration and re-penetration
- Low L-ratings
- Withstands the rigors of usage and time
- Can be installed in wall and floor applications

Areas of application

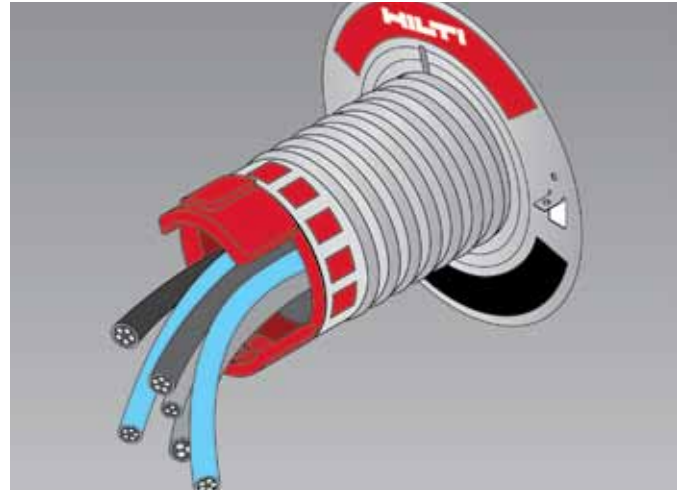
- Cable and cable bundles

For use with

- Concrete floor rated up to 3 hours
- Gypsum walls rated up to 4 hours

Examples

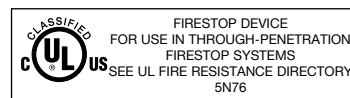
- Electrical wiring
- Premise wiring
- Low voltage and datacom



Technical Data	CP 653	
	2" (50 mm)	4" (102 mm)
OD (device only)	2.3" (60 mm)	4.3" (110 mm)
OD (flange)	4.7" (120 mm)	6.7" (170 mm)
ID	1.7" (48 mm)	3.6" (92 mm)
Total length	12.4" (315 mm)	12.4" (315 mm)
Weight (device and flanges)	1.5 lbs	2.6 lbs
Temperature resistance	22° F to 212° F (-6° C to 100° C)	
Intumescent activation	Approx. 320° F (160° C)	
Expansion ratio (unrestricted)	1:40	
Metal	Steel with zinc coating	
Plastic	ABS	
Fabric	Glass-fiber	

Tested in accordance with

- UL 1479
- ASTM E 814



Installation instructions for CP 653

Notice

Always refer to the MSDS before use and the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information.

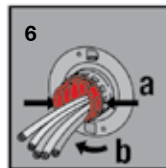
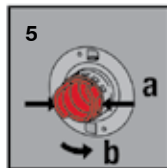
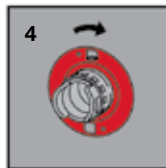
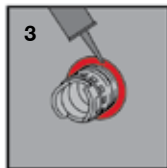
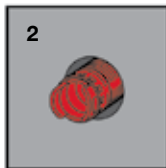
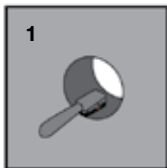
Instructions for use

1. Use hole saw to create the appropriate hole.
2. Insert the sleeve.
3. Seal the gap with firestop sealant to impede smoke and gas migration. Repeat on other side of the wall

4. Spin the flange clockwise onto the device. Repeat on other side of the wall.
5. To open the device:
 - (a) On one side of the wall, press the clip closures inward.
 - (b) Twist the device counterclockwise and pull the red housing outwards to eliminate the bunching of the smoke seal fabric. A yellow label will be visible to indicate that the device is open.

6. To close the device:
 - (a) On the same side of the wall, press the clip closures inward.
 - (b) Twist the device clockwise until finger-tight, allowing it to engage with a click.

For repenetration of cables, repeat steps 5 and 6.
For installation options not presented here, consult your local Hilti representative for other rated firestop systems.



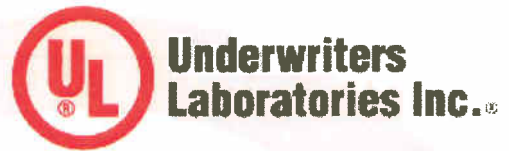
Hilti Firestop
Saving lives
through innovation
and education

Hilti. Outperform. Outlast.

Certificate of Compliance

Certificate Number 20071018-R15431
Report Reference 2007 October 18
Issue Date 2007 October 18

Page 1 of 1



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

*This is to certify that
representative samples of*


Firestop Devices & Firestop Certified for Canada

Have been investigated by Underwriters Laboratories Inc.® (UL) or any authorized licensee of UL in accordance with the Standard(s) indicated on this Certificate.


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

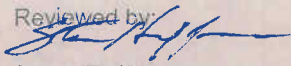
Additional Information: CP 653 Speed Sleeves for use in Through-Penetration Firestop Systems as currently described in the UL Fire Resistance Directory.

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

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

Look for the UL Classification Mark on the product

Issued by:

Mona Couloute
Underwriters Laboratories Inc.

Reviewed by:

Steve Hoffman
Underwriters Laboratories Inc.



MSDS No.: 321
Revision No.: 000
Revision Date: 10/05/07
Page: 1 of 2

MATERIAL SAFETY DATA SHEET

Product name: CP 653 - Speed Sleeve
Description: Reusable Firestop Insert containing a black intumescent material.
Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121
Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Not applicable. This product is considered to be an "article" as defined in the federal OSHA Hazard Communication Standard 29 CFR 1910.1200 / 1926.59.

PHYSICAL DATA

Appearance:	Galvanized metal sleeve with red plastic ends	Odor:	None.
Vapor Density: (air = 1)	Not applicable.	Vapor Pressure:	Not applicable.
Boiling Point:	Not applicable.	VOC Content:	7.6 g/l
Evaporation Rate:	Not applicable.	Solubility in Water:	Not determined.
Specific Gravity:	Not determined.	pH:	Not applicable.

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not applicable.	Flammable Limits:	Not applicable.
Extinguishing Media:	Use extinguishing media appropriate for surrounding fire.		
Special Fire Fighting Procedures:	None known.		
Unusual Fire and Explosion Hazards:	None known. Product serves as a firestop; intumescent material metal sleeve expands when exposed to temperatures > 160° C / 320° F.		

REACTIVITY DATA

Stability:	Stable.	Hazardous Polymerization:	Will not occur.
Incompatibility:	None known.	Decomposition Products:	None known.
Conditions to Avoid:	None known.		

HEALTH HAZARD DATA

Known Hazards:	None known.	Routes of Exposure:	None known.
Signs and Symptoms of Exposure:	None expected from routine use/installation according to manufacturer's specifications and technical guides.		
Carcinogenicity:	No ingredients are classified as a carcinogen by IARC, NTP or OSHA.		
Medical Conditions Aggravated by Exposure:	None known.		

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Immediately flush with plenty of water. Call a physician if symptoms occur.
Skin:	Not applicable. Practice good hygiene; i.e. wash hands during breaks, before eating or smoking, and after work.
Inhalation:	Not applicable.
Ingestion:	Not a potential route of exposure.
Other:	Referral to a physician is recommended if there is any question about the seriousness of any injury/exposure.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation:	General (natural or mechanically induced fresh air movements).
Eye Protection:	Not required, however, safety glasses should be worn in most industrial settings.
Skin Protection:	None required; however, gloves recommended.
Respiratory Protection:	No respiratory protection is needed for normal application of this product.

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing Precautions:	Store in a cool dry area. Follow installation instructions.
Spill Procedures:	No special requirements.

REGULATORY INFORMATION

Hazard Communication:	This product is considered to be an "article" as defined in the federal OSHA Hazard Communication Standard.
DOT Shipping Name:	Not regulated.
IATA / ICAO Shipping Name:	Not regulated.
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product is classified as an "article" and is not subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).
EPA Waste Code(s):	Not regulated by EPA as a hazardous waste.
Waste Disposal Methods:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

CONTACTS

Customer Service:	1 800 879 8000	Technical Service:	1 800 879 8000
Health / Safety:	1 800 879 6000	Jerry Metcalf	(x6704)
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)		

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

FS-ONE High Performance Intumescent Firestop Sealant

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

Product features

- Smoke, gas and water resistant after material has cured
- Contains no halogen, solvents or asbestos
- High fire rating properties
- Water based, easy to clean
- Protects most typical firestop penetration applications
- Paintable
- 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

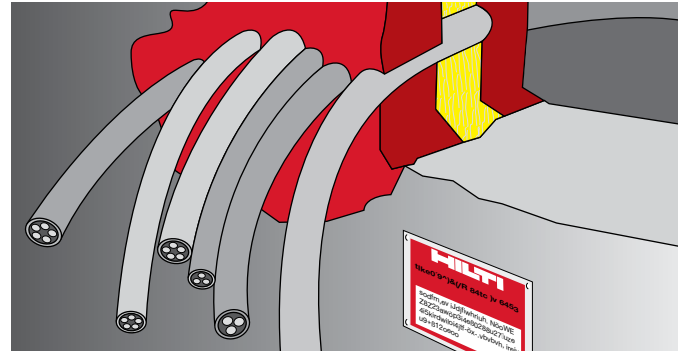
- Steel, copper and EMT pipes
- Insulated steel and copper pipes
- Cable bundles
- Closed or vented plastic pipes
- HVAC penetrations

For use with

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

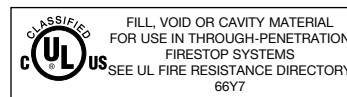
Examples

- Sealing around combustible pipe penetrations in fire rated construction
- Sealing around non-combustible penetrations in fire rated construction



Technical Data*	FS-ONE
Chemical basis	Water-based intumescent acrylic dispersion
Color	Red
Application temperature	40°F to 104°F (5°C to 40°C)
Skin forming time	Approx. 20-30 min.
Curing time	Approx. 2 mm / 3 days
Average volume shrinkage (ASTM C1241)	24.1%
Movement capability	Approx. 5%
Expansion rate (unrestricted)	Up to 3-5 times original volume
Temperature resistance (cured)	-40°F to 212°F (-40°C to 100°C)
Surface burning characteristics (ASTM E 84-96)	Flame Spread: 0 Smoke Development: 5
Sound transmission classification (ASTM E 90-99)	56 (Relates to specific construction)
Tested in accordance with	• UL 1479 • ASTM E 814 • ASTM E 84 • ASTM G21

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



Installation instructions for FS-ONE

Notice

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

Opening

- Clean the opening. Surfaces to which FS-ONE will be applied should be cleaned of loose debris, dirt, oil, moisture, frost and wax. Structures supporting penetrating items must be installed in compliance with local building and electrical standards.

Application of firestop sealant

- Install the prescribed backfilling material type and depth to obtain the desired rating (if required). Leave sufficient depth for applying FS-ONE.
- Application of firestop sealant: Apply FS-ONE to the required depth in order to obtain the desired fire rating. Make sure FS-ONE contacts all surfaces to provide maximum adhesion. For application of FS-ONE use a standard caulking gun, foil pack gun, bulk loader and bulk gun. With FS-ONE buckets, Graco type sealant pumps may be used. (Contact pump manufacturer for proper selection).

- Smoothing of firestop sealant: To complete the seal, tool immediately to give a smooth appearance. Excess sealant, prior to curing, can be cleaned away from adjacent surfaces and tools with water.
- Leave completed seal undisturbed for 48 hours.
- For maintenance reasons, a penetration seal could be permanently marked with an identification plate. In such a case, mark the identification plate and fasten it in a visible position next to the seal.

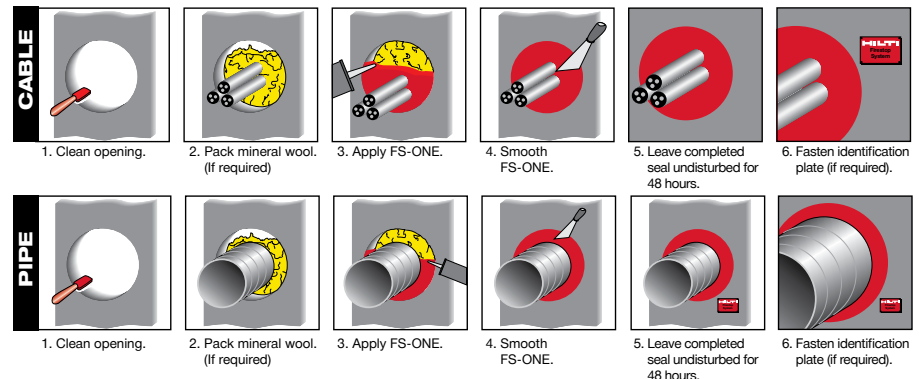
Not for use

- High movement expansion joints
- Underwater

- On materials where oil, plasticizers or solvents may bleed i.e. impregnated wood, oil based seals, green or partially vulcanized rubber
- In any penetration other than those specifically described in this manual or the test reports

Storage

- Store only in the original packaging in a location protected from moisture at temperatures between 40°F (5°C) and 86°F (30°C)
- Observe expiration date on the package



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Certificate of Compliance

Certificate Number 20100512-R13240

Report Reference 2010 May 12

Issue Date 2010 May 12

Page 1 of 1



**Underwriters
Laboratories Inc.®**

Issued to: **Hilti, Inc.**

54 S 122ND East AVE
Tulsa, OK 74146 USA

*This is to certify that
representative samples of*

**Fill, Void or Cavity Materials
FS-ONE**

*Have been investigated by Underwriters Laboratories Inc.® (UL) or any authorized
licensee of UL in accordance with the Standard(s) indicated on this Certificate.*


Standard(s) for Safety:

ANSI/UL 1479, ANSI/UL 2079, CAN/ULC-S115-05
Third Edition, revised March 1, 2010

Additional Information:

FS-ONE Sealant for use in Joint Systems and FS-ONE for use in
Through-Penetration Firestop Systems as currently described in the UL Fire
Resistance Directory.

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

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

Look for the UL Classification Mark on the product

Issued by:

Mona Couloute
Mona Couloute

Underwriters Laboratories Inc.

Reviewed by:

Chris J. Johnson
Chris J. Johnson

Underwriters Laboratories Inc.

Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.



MSDS No.: 259
Revision No.: 011
Revision Date: 02/29/12
Page: 1 of 2

MATERIAL SAFETY DATA SHEET

Product name: FS-ONE High Performance Intumescent Firestop Sealant
Description: One-part acrylic-based sealant
Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121
Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	PEL:	TLV:	STEL:
Polyacrylate dispersion	Mixture	NE	NE	NE
Calcium carbonate	001317-65-3	5 mg/m ³ (R)	NE	NE
Zinc borate	138265-88-0	NE	NE	NE
Talc	014807-96-6	20 mppcf	2 mg/m ³ (R)	NE
Ethylene glycol	000107-21-1	NE	NE	C:100 mg/m ³ (A)
Iron oxide	001309-37-1	10 mg/m ³ (F)	5 mg/m ³ (R)	NE

Abbreviations: PEL = OSHA Permissible Exposure Limit. TLV = ACGIH Threshold Limit Value. C = Ceiling. STEL = Short Term Exposure Limit. NE = None Established. NA = Not Applicable. (T) indicates "as total dust". (R) indicates "as respirable fraction". (A) indicates "as an aerosol". mppcf = million particles per cubic foot. F = Fume

PHYSICAL DATA

Appearance:	Red paste.	Odor:	Odorless.
Vapor Density: (air = 1)	Not determined.	Vapor Pressure:	23mbar @ 20C / 68F
Boiling Point:	Not applicable.	VOC Content:	75.0 g/L.
Evaporation Rate:	Not applicable.	Solubility in Water:	Soluble.
Specific Gravity:	1.5	pH:	Not determined.

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Non-flammable.	Flammable Limits:	Not applicable.
Extinguishing Media:	Not applicable. Use extinguishing media as appropriate for surrounding fire.		
Special Fire Fighting Procedures:	None known. Use a self-contained breathing apparatus when fighting fires involving chemicals.		
Unusual Fire and Explosion Hazards:	None known. Thermal decomposition products can be formed such as oxides of carbon, sulfur and phosphorous.		

REACTIVITY DATA

Stability:	Stable.	Hazardous Polymerization:	Will not occur.
Incompatibility:	Strong acids, peroxides, and oxidizing agents.		
Decomposition Products:	Thermal decomposition can yield CO and CO ₂ .		
Conditions to Avoid:	None known.		

HEALTH HAZARD DATA

Known Hazards:	None known.		
Signs and Symptoms of Exposure:	Possibly irritating upon contact with the eyes or upon repeated contact with the skin.		
Medical Conditions Aggravated by Exposure:	Eye and skin conditions.		
Routes of Exposure:	Dermal.		
Carcinogenicity:	No ingredients are classified as carcinogens.		

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Immediately flush with plenty of water. Contact a physician if symptoms occur.
Skin:	Immediately wipe off material and wash with soap and water. Contact a physician if symptoms occur.
Inhalation:	Move victim to fresh air if discomfort develops. Contact a physician if symptoms occur. persist.
Ingestion:	Seek medical attention. Do not induce vomiting unless directed by a physician.
Other:	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation:	General (natural or mechanically induced fresh air movements).
Eye Protection:	Safety glasses with side shields.
Skin Protection:	Impermeable gloves. Other protective clothing as required to prevent skin contact.
Respiratory Protection:	None normally required. Where ventilation is inadequate to control vapors, use a NIOSH-approved respirator with organic vapor cartridges. Never enter a confined space without an appropriate air-supplied respirator.

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing Precautions:	Store in a cool, dry area preferably between 40° and 77° F. Keep from freezing. Do not store in direct sunlight. Avoid contact with the eyes or skin. Practice good hygiene; i.e. always wash thoroughly after handling and before eating or smoking. For industrial use only. Keep out of reach of children. Follow label/use instructions.
Spill Procedures:	Immediately wipe away spilled material before it hardens. Place in a container for proper disposal in accordance with all applicable local, state, or federal requirements.

REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
HMIS Codes:	Health 1, Flammability 0, Reactivity 0, PPE B
DOT Shipping Name:	Not regulated.
IATA / ICAO Shipping Name:	Not regulated.
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product contains < 3% ethylene glycol (CAS 107-21-1) and < 15% zinc borate (re: zinc compounds) which are subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).
EPA Waste Code(s):	Not regulated by EPA as a hazardous waste.
Waste Disposal Methods:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

CONTACTS

Customer Service:	1 800 879 8000	Technical Service:	1 800 879 8000
Health / Safety:	1 800 879 6000	Jerry Metcalf	(x71003704)
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)		

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

Firestop Box Insert

Product description

- An intumescent insert designed for easy installation inside of outlet and switch boxes to provide protection in fire-rated assemblies.

Product features

- Fast installation thru self adhesive back
- Applied by hand, no tools required
- Easy installation access from outside the wall

Areas of application

- Electrical outlet and switch boxes.

For use with

- Gypsum wall assemblies with metal or wood studs
- In accordance with Hilti's (CLIV "UL classification code") approval, when the Firestop Box Insert are installed on boxes on both sides of a wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back to back.

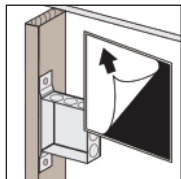
Examples

- Renovation projects applications, where only the interior of box is accessible.

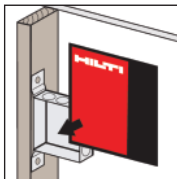
Installation instructions for Hilti Firestop Box Insert

Application of Box Insert

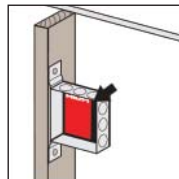
1. Determine outlet box dimensions and select appropriate FS Box Insert. Clean inside back wall of outlet box.
2. Remove the protection paper from self adhesive back side of the FS Box Insert.
3. Center the FS Box Insert and apply to inside back wall of outlet box. A slit can be cut in the FS Box Insert to allow access for any screws or wires.
4. Complete the installation of conduits, cable, etc.



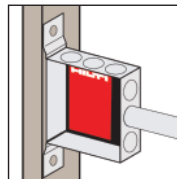
1. Remove the protection paper from self adhesive back side of the FS Box Insert.



2. Center the FS Box Insert and apply to inside back wall of outlet box.



3. A slit can be cut in the FS Box Insert to allow access for any screws or wires.

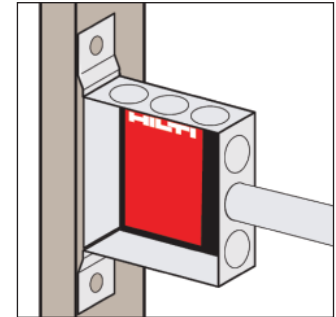


4. Complete the installation of conduits, cable, etc.

Technical Data

Dimensions	1 13/16" x 2 13/16" x 1/4" (for use with 2" x 4" boxes) 3 11/16" x 3 3/4" x 1/4" (for use with 4" x 4" boxes) 4 3/8" x 4 3/8" x 1/4" (for use with 4 11/16" x 4 11/16" boxes)
Color	Black
Surface burning characteristics (ASTM E 84)	Flame Spread Index: 5 Smoke Development Index: 5
Approvals	In progress
City of New York	In progress
Tested in accordance with	• ASTM E 84 • ASTM E 119 / UL 263 • ASTM E 90 Sound transmission classification 53*

*U411 Wall Assembly



Notice about approvals

- Hilti Firestop Box Insert is classified by Underwriters' Laboratories, Inc. as a "Wall Openings Protecting Material." Specific requirements should be consulted in the UL Fire Resistance Directory Volume 1 or Hilti documentation.

Not for use...

- In areas under water

Safety precautions

- Before handling, read the product Material Safety Data Sheet for detailed use and health information
- Wear suitable gloves and eye protection
- Keep out of the reach of children

Storage

- Store only in the original packaging in a location at temperatures 40°F (5°C) to 104°F (40°C).

Item No.	Description	Quantity
3416772	Box Insert 2"x4"	50
3417183	Box Insert 4"x4"	50
3417184	Box Insert 4 11/16"x4 11/16"	50