



# SAVING LIVES THROUGH INNOVATION AND EDUCATION

**Firestop Application Handbook  
6th Edition**



# HILTI HASSLE-FREE SERVICES

Create Unique Values.

We measure our success in yours. Our comprehensive range of hassle-free services are designed to enhance your project delivery capabilities at every phase, so you remain competitive and ahead.



## PLANNING & SPECIFYING

### Engineering Service

supports hassle-free project planning.

### E-service

places technical information at your fingertips.

### Firestop Seminar

provide basic understanding in firestop application

### BIM/CAD

technical drawings and standard BIM/CAD templates

Installation training.

## INSTALLATION PHASE

### Error-free and Green Installation Practice

enhances productivity and enables safe anchor and firestop installation.

### Cordless Practice

elevates safety and productivity.

### Direct Customer Relationship

helps you to deliver projects on-time.

### Tool Lifetime Services

lowers your total cost of ownership for a lifetime.

## POST INSTALLATION CONSULTATION

### Engineering Service

supports project approval at your job site or office.

### Documentation Management Software

increase the efficiency to document, manage and report compliance at every penetrations throughout your building.



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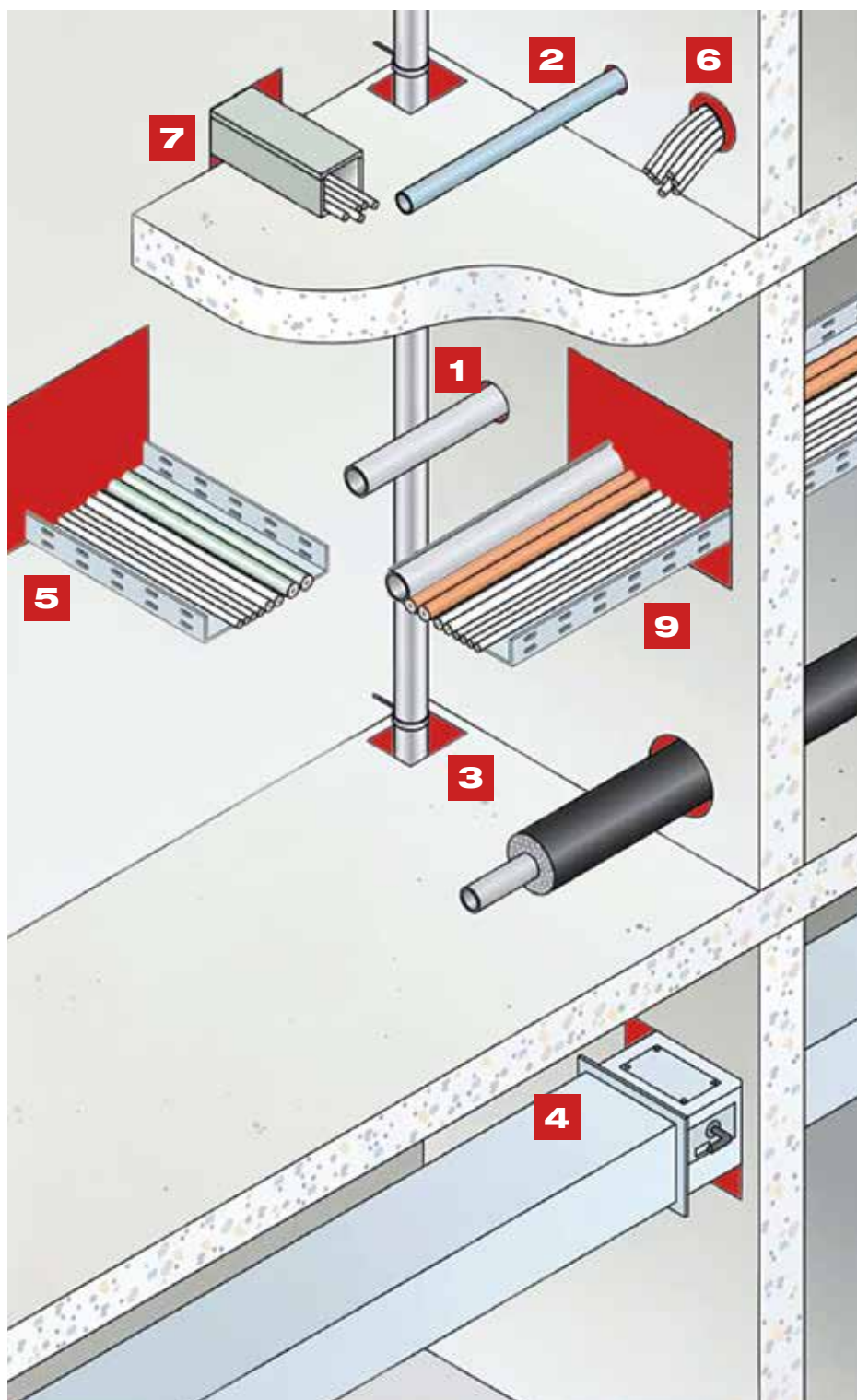


# IS FIRESTOPPING STILL TOO HOT FOR YOU TO HANDLE?

Hilti firestop systems provide simple and reliable solutions.

Hilti firestop systems make the sealing of openings for pipes and cable trays in fire compartment walls, floors and ceilings easier than ever before. Tested, approved and highly reliable, Hilti firestop products are tailored exactly to the needs of the electrical and mechanical trades.

## Fire risk overview - electrical & mechanical

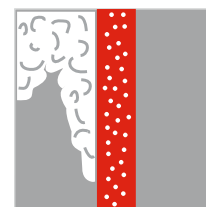


- 1** Metal pipe penetration (P.9 - 11)
- 2** Plastic pipe penetration (P.12 - 14)
- 3** Insulated pipe penetration (P.15 - 19)
- 4** Air duct damper penetration (P.20 - 21)
- 5** Cable tray penetration (P.22 - 24)
- 6** Cable / Cable bundle penetration (P.25 - 31)
- 7** Trunking penetration (P.32 - 33)
- 8** Busbar penetration (P.34)
- 9** Multiple penetration (P.35-36)
- 10** Sunken plumbing pipe penetration (P.37)

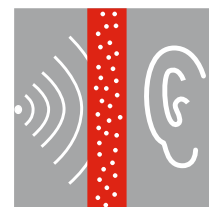


## More than just passive fire prevention

Hilti firestop products are tested to provide you with more than firestopping. The following symbols help you identify the additional features that Hilti brings to the product.



Smoke / Gas Tightness



Acoustic Insulation

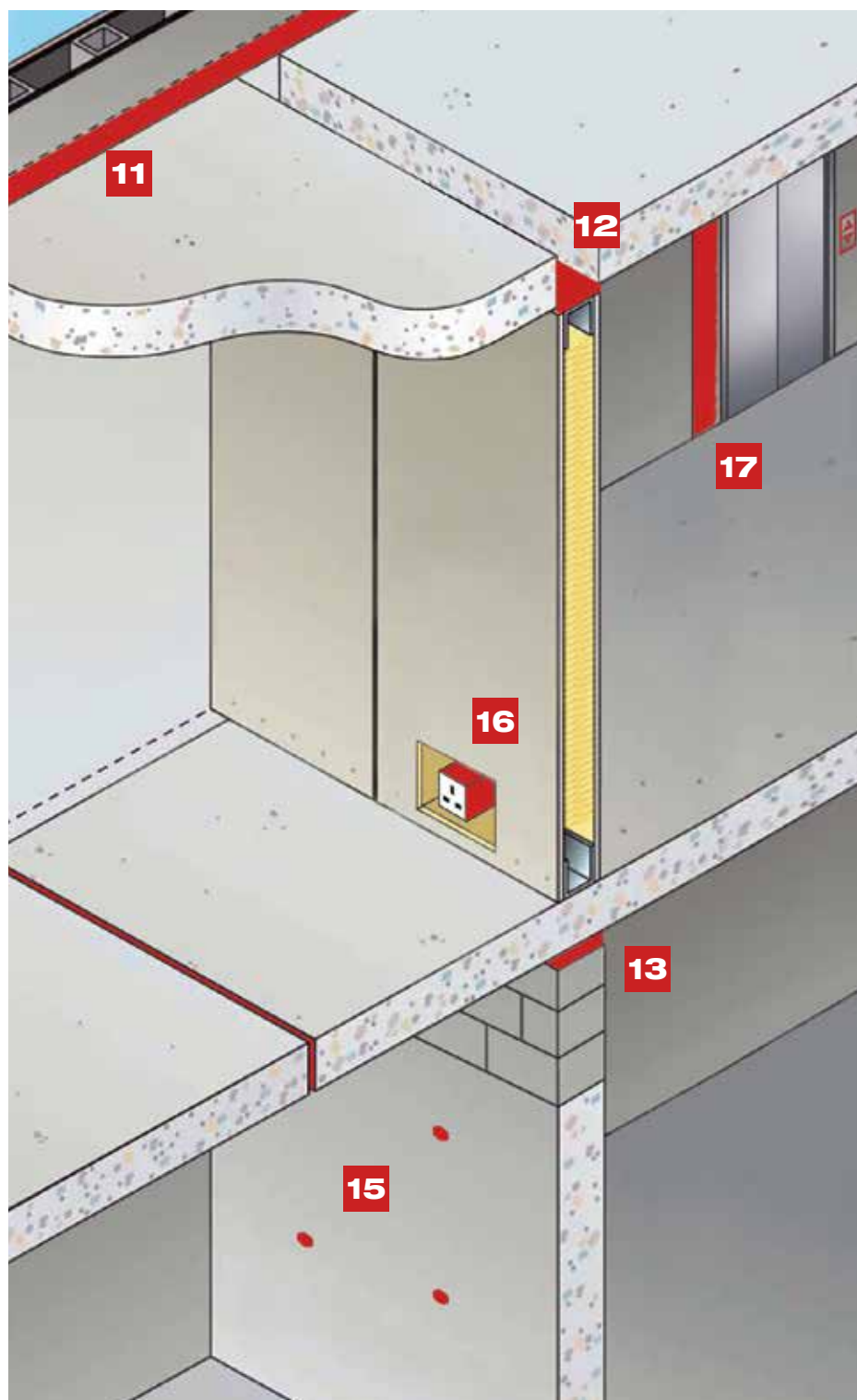


Water Tightness



Resistance to Aging\*  
(\*see remark on Page 79)

## Fire risk overview - architectural & internal finish



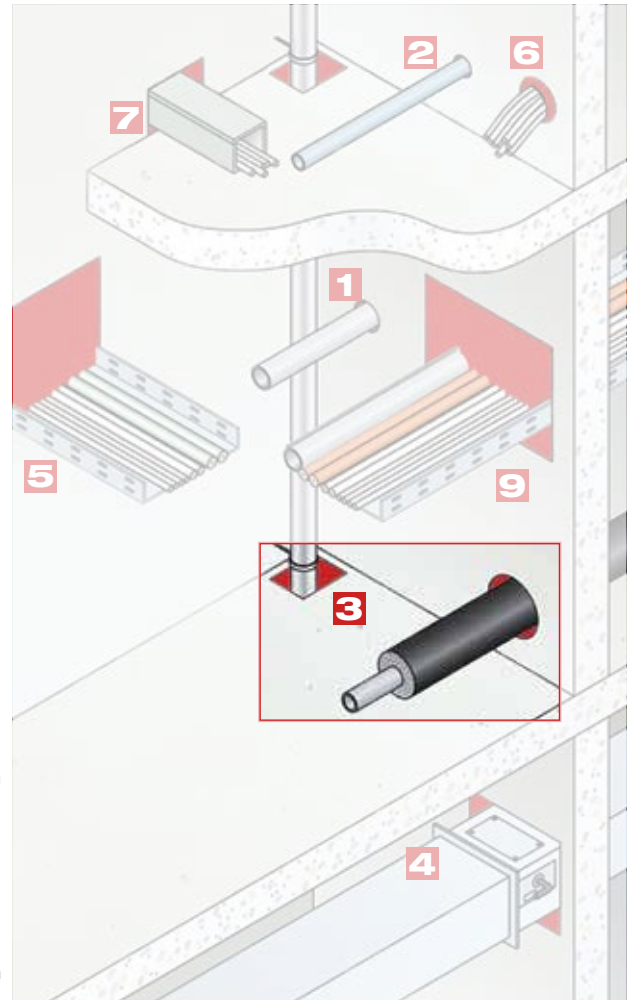
- 11** Curtain wall joint (P.38 - 39)
- 12** Drywall top of wall joint (P.40)
- 13** Blockwall top of wall joint (P.41 - 42)
- 15** Wall tie hole (P.44 - 46)
- 16** Socket box (P.47 - 48)
- 17** Lift door frame, call button and display indicator and control cabinet (P.49 - 50)

# 4 EASY STEPS TO COMPLETE FIRESTOP DESIGN & SUBMISSION

## Step 1

Find the relevant number for your application(s)

### Fire risk overview - electrical & mechanical



- 1 Metal pipe penetration (P.9 - 11)
- 2 Plastic pipe penetration (P.12 - 14)
- 3 Insulated pipe penetration (P.15 - 19)
- 4 Air duct damper penetration (P.20 - 21)
- 5 Cable tray penetration (P.22 - 24)
- 6 Cable / Cable bundle penetration (P.25 - 31)
- 7 Trunking penetration (P.32 - 33)
- 8 Busbar penetration (P.34)
- 9 Multiple penetration (P.35 - 36)
- 10 Sunken plumbing pipe penetration (P.37)

## Step 2

Select the right application details

Turn to the page(s) with the application number on the side

**3** **MULTIPLE REFRIGERANT PIPES PENETRATION DETAIL (4 OF 4)**

FIRE RESISTANCE RATINGS: UP TO 120/120  
 PRODUCT USED: CP-S-F FLEXIBLE FIRESTOP FOAM  
 CP-S-F FLEXIBLE FIRESTOP MORTAR  
 CP-S-F FLEXIBLE FIRESTOP MORTAR  
 ETA 1500/10

REFERENCE: Q

1. SUBSTRATE TYPES: FLEXIBLE WALL, MASONRY WALL AND CONCRETE WALL  
 2. OPTIONAL: METAL SLEEVE (CIRCULAR / RECTANGULAR)  
 3. PENETRATING ITEM: COUPLED PIPES WITH ARMAFLEX INSULATION LAYER  
 4. CP-S-F BANDAGE (AT BOTH SIDES OF FIRE RATED WALL OR FLOOR, UNLESS SPECIFIED) CONTINUOUSLY WRAPPED AROUND THE OTHER GROUNDPERIENCE OF THE INSULATION LAYER.  
 5. FOR ANNUAL GAP, IN FLEXIBLE AND RIGID WALL, CP-S-F FLEXIBLE FIRESTOP FOAM OR CP-S-F FIRESTOP MORTAR SHOULD BE USED  
 6. INSULATION LAYER SHOULD BE ARMAFLEX OR EQUIVALENT

FOR FLEXIBLE / RIGID WALL: ≥ 100mm

	Pipe diameter (mm)	Insulation thickness (mm)	Layer(s) of bandage	F&D
Copper	80	30	2	~120/120
Copper	88.9	30	1	~120/120
Al composite	75	40.5	2	~120/120
Al-SS	110	42.5	2	~120/120

NOTES:  
 1. PIPE DIAMETER, INSULATION LAYER THICKNESS AND THE ASSOCIATED NO. OF BANDAGE LAYERS CAN BE CHECKED IN ABOVE TABLE. FOR OTHER SIZES, PLEASE CONTACT HILTI ONLINE ENGINEER FOR TEST REPORT SUPPORT.  
 2. MINIMUM SEPARATION (S1 AND S2) BETWEEN PIPES COULD BE ZERO.

ALL CONSTRUCTION DETAILS MUST BE SUBMITTED AND APPROVED BY THE REFERENCED ARCHITECTS ENGINEERS FOR THE PROJECT. FOR ANY DETAIL BEYOND THE SCOPE OF HILTI, PLEASE CONTACT HILTI ONLINE ENGINEER FOR TEST REPORT SUPPORT.

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4 OF 4  
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 (H-KP06-1)

In case your application is not covered, please contact Hilti Fire Protection Specialist at (852) 8228 8118 for advice.

## Check the details against site situation

- 1** Floor/wall thickness      **2** Opening size      **3** Penetrating items

**Step**  
**3**

**MULTIPLE REFRIGERANT PIPES PENETRATION DETAIL (4 OF 4)**

**B** FIRE RESISTANCE RATING : UP TO -/120/120  
PRODUCT USED : CFS-B BANDAGE  
CFS-F FX FLEXIBLE FIRESTOP FOAM  
CP636 FIRESTOP MORTAR

**A** BS 476-20  
EN 1366-3

**C** REFERENCE: ETA 10/0210

**D** WALL CASE

**FRONT VIEW**

1. SUBSTRATE TYPES: FLEXIBLE WALL, MASONRY WALL AND CONCRETE WALL  
2. OPTIONAL : METAL SLEEVE (CIRCULAR / RECTANGULAR)  
3. PENETRATING ITEM:  
COPPER PIPE WITH ARMAFLEX INSULATION LAYER.  
4. **CFS-B BANDAGE** (AT BOTH SIDES OF FIRE RATED WALL OR FLOOR, UNLESS SPECIFIED) CONTINUOUSLY WRAPPED AROUND THE OTHER CIRCUMFERENCE OF THE INSULATION LAYER.  
5. FOR ANNULAR GAP, IN FLEXIBLE AND RIGID WALL, **CFS-F FX FLEXIBLE FIRESTOP FOAM** OR **CP 636 FIRESTOP MORTAR** SHOULD BE USED  
6. INSULATION LAYER SHOULD BE ARMAFLEX OR EQUIVALENT  
FOR FLEXIBLE / RIGID WALL  $\geq 100\text{mm}$

	Pipe diameter (mm)	Insulation thickness (mm)	Layer(s) of bandage	F.R.R
Copper	88.9	80	2	-/120/120
Copper	88.9	30	1	-/120/120
Al composite	75	40.5	2	-/90/90
PE-HD	110	42.5	2	-/120/120

**NOTES :**  
1. PIPE DIAMETER, INSULATION LAYER THICKNESS AND THE ASSOCIATED NO. OF BANDAGE LAYERS CAN BE CHECKED IN ABOVE TABLE. FOR OTHER SIZES, PLEASE CONTACT HILTI ONLINE ENGINEER FOR TEST REPORT SUPPORT.  
2. MINIMUM SEPARATION (S1 AND S2) BETWEEN PIPES COULD BE ZERO.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.

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Hilti Firestop Systems

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8228-8118

Sheet 4 OF 4  
Scale NOT TO SCALE  
Date 1ST JAN, 2017

**E** Eng No.  
EM-INP04-1

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**A** According to which standard

**B** FRR & involved products

**C** Fire test reports referred

**D** Seal-up details & special notes

**E** Hilti application details no.

ETA 10/0210

Refer these 2 sets of number in  
your shop drawing details

EM-INP04-1

## Prepare for submission

- 1** Submission folder (product catalogue, test reports, country of origin, MSDS, job ref.)
- 2** Supplementary test reports (if any)
- 3** Product samples

Hilti Fire Protection  
Specialist can help you  
prepare the full proposal,  
please call 8228-8118

**Step**  
**4**



## DRAWING SUMMARY

### Category

### Electrical & Mechanical

Application	
<b>1</b>	Metal Pipe Penetration 1
<b>1</b>	Metal Pipe Penetration 2
<b>1</b>	Metal Pipe Penetration 3
<b>2</b>	Plastic Pipe Penetraion 1
<b>2</b>	Plastic Pipe Penetraion 2
<b>2</b>	Plastic Pipe Penetraion 3
<b>3</b>	Insulated Pipe Penetration 1
<b>3</b>	Insulated Pipe Penetration 2
<b>3</b>	Insulated Pipe Penetration 3
<b>3</b>	Insulated Pipe Penetration 4
<b>3</b>	Insulated Pipe Penetration 5
<b>4</b>	Air Duct Penetration 1
<b>4</b>	Air Duct Penetration 2
<b>5</b>	Cable Tray Penetration 1
<b>5</b>	Cable Tray Penetration 2
<b>5</b>	Cable Tray Penetration 3
<b>6</b>	Cable / Cable Bundle Penetration 1
<b>6</b>	Cable / Cable Bundle Penetration 2
<b>6</b>	Cable / Cable Bundle Penetration 3
<b>6</b>	Cable / Cable Bundle Penetration 4
<b>6</b>	Cable / Cable Bundle Penetration 5
<b>6</b>	Cable / Cable Bundle Penetration 6
<b>6</b>	Cable / Cable Bundle Penetration 7
<b>7</b>	Trunking Penetration 1
<b>7</b>	Trunking Penetration 2
<b>8</b>	Busbar Penetration
<b>9</b>	Multiple Penetration 1
<b>9</b>	Multiple Penetration 2
<b>10</b>	Sunken Plumbing Pipe Through Ducting Room Penetration
<b>11</b>	Curtain Wall Joint Application 1
<b>11</b>	Curtain Wall Joint Application 2
<b>12</b>	Drywall Joint Application
<b>13</b>	Top of Wall Joint Application 1
<b>13</b>	Top of Wall Joint Application 2
<b>14</b>	Precast Facade Joint Application
<b>15</b>	Wall Tie Hole Application 1
<b>15</b>	Wall Tie Hole Application 2
<b>15</b>	Wall Tie Hole Application 3
<b>16</b>	Electrical Switch / Socket Box Application 1
<b>16</b>	Electrical Switch / Socket Box Application 2
<b>17</b>	Lift Door Frame / Switch Control Application
<b>18</b>	Lift Control Cabinet
<b>19</b>	Timber / Steel Door Frame Joint Application

### Architectural & Internal Finish

	FRR	Drawing No.	Page No.
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	Up to -/240/-	EM-MTP02	Page 10
	Up to -/240/12	EM-MTP03	Page 11
	Up to -/245/245	EM-PLP01	Page 12
	Up to -/120/-	EM-PLP02	Page 13
	Up to -/240/240	EM-PLP03	Page 14
	Up to -/240/240	EM-INP01	Page 15
	Up to -/240/240	EM-INP02	Page 16
	Up to -/120/120	EM-INP03	Page 17
	Up to -/120/120	EM-INP04-1	Page 18
	Up to -/120/120	EM-INP04-2	Page 19
	Up to -/125/122	EM-ADT01	Page 20
	Up to -/255/-	EM-ADT02	Page 21
	Up to -/240/86	EM-CBT01	Page 22
	Up to -/240/-	EM-CBT02	Page 23
	Up to -/120/-	EM-CBT02	Page 24
	Up to -/240/240	EM-CBB01	Page 25
	Up to -/120/120	EM-CBB02	Page 26
	Up to -/151/151	EM-CBB03	Page 27
	Up to -/120/120	EM-CBB04	Page 28
	Up to -/120/-	EM-CBB05	Page 29
	Up to -/120/-	EM-CBB06	Page 30
	Up to -/240/-	EM-CBB07	Page 31
	Up to -/120/120	EM-TKG01	Page 32
	Up to -/240/-	EM-TKG02	Page 33
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	Up to -/120/-	EM-SPP01	Page 37
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	Up to -/240/240	AI-PFJ01	Page 43
	Up to -/157/37	AI-WTH01	Page 44
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	N/A	AI-WTH03	Page 46
	Up to -/240/240	AI-SKB01	Page 47
	Up to -/66/66	AI-SKB02	Page 48
	Up to -/120/120	AI-LDF01	Page 49
	Up to -/240/-	AI-LDF02	Page 50
	Up to -/240/120	AI-TDF01	Page 51

# APPLICATION DRAWINGS

Leading-edge Technology.  
Outstanding Service.





# METAL PIPE PENETRATION DETAIL (1 OF 3)

FIRE RESISTANCE RATING : UP TO -/240/36

PRODUCT USED :

CP 606 FLEXIBLE FIRESTOP SEALANT

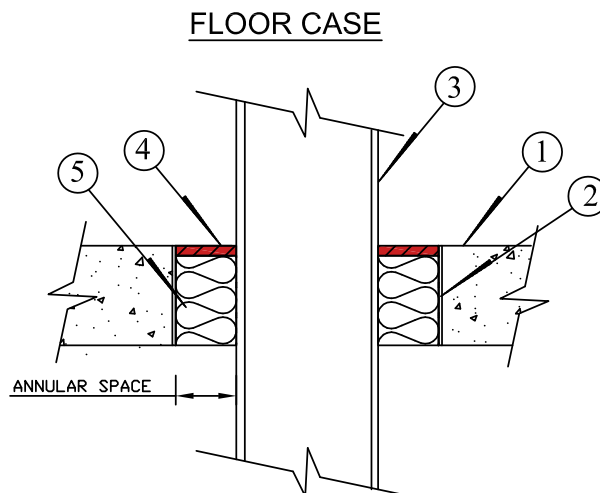
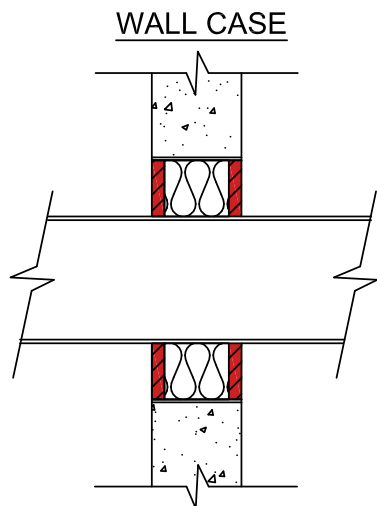
REFERENCE:

WARRES No. 101295/A & WFR No. C102207

WFR No. 125356

BS 476-20

EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY:
  - A. CONCRETE WALL OR FIRE-RATED BLOCKWALL.
  - B. CONCRETE FLOOR.
2. OPTIONAL : METAL SLEEVE.
3. PENETRATING ITEM: STEEL / CAST / D.I. / COPPER PIPE (SEE NOTE 1)
4. **CP 606 FLEXIBLE FIRESTOP SEALANT** (SEE NOTE 2)
5. MINIMUM 70mm THICKNESS MINERAL WOOL (MINIMUM 140kg/m<sup>3</sup> DENSITY) TIGHTLY PACKED AND FULLY FILLED ACROSS THE ANNULAR SPACE.

	STEEL PIPE	CAST/ D.I. PIPE	COPPER PIPE
MAX. PIPE DIAMETER (mm)	600	600	50
MAX. ANNULAR GAP (mm)	30	30	40
MIN. DEPTH OF <b>CP 606 FLEXIBLE FIRESTOP SEALANT</b> (mm)	15	15	20

## NOTES :

1. MINIMUM DIAMETER OF THE COPPER PIPE CAN BE INCREASED TO 200mm IF THE F.R.R. IS REDUCED TO -/120/12.
2. **CP606 FLEXIBLE FIRESTOP SEALANT** IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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Sheet 1 OF 3  
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Drawing No.  
EM-MTP01

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## METAL PIPE PENETRATION DETAIL (2 OF 3)

FIRE RESISTANCE RATING : UP TO -/240/-

PRODUCT USED :

CP 606 FLEXIBLE FIRESTOP SEALANT

CF 125-50 FOAM

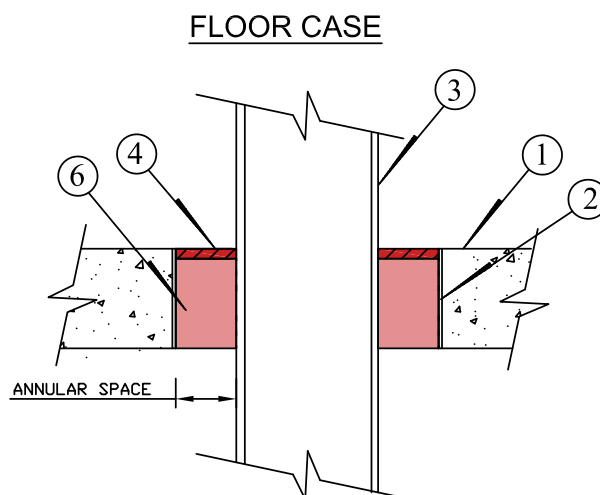
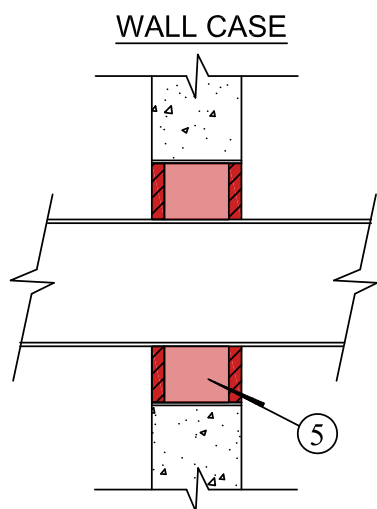
CF F 750 FOAM

REFERENCE:

R18J14-2A

BS 476-20

EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY:
  - A. CONCRETE WALL OR FIRE-RATED BLOCKWALL.
  - B. CONCRETE FLOOR.
2. OPTIONAL : METAL SLEEVE.
3. PENETRATING ITEM: STEEL
4. **CP 606 FLEXIBLE FIRESTOP SEALANT** (SEE NOTE 1)
5. **CF F 750 FOAM** (SEE APPLICATION DETAIL)
6. **CF 125-50 FOAM** (SEE APPLICATION DETAIL)

### Application Details

WALL CASSE			FLOOR CASSE		
	STEEL PIPE	F.R.R.		STEEL PIPE	F.R.R.
MAX. PIPE DIAMETER (mm)	138	-/240/240	MAX. PIPE DIAMETER (mm)	600	-/240/-
MAX. ANNULAR GAP (mm)	10		MAX. ANNULAR GAP (mm)	20	
MIN. DEPTH OF <b>CP 606 FLEXIBLE FIRESTOP SEALANT</b> (mm)	10		MIN. DEPTH OF <b>CP 606 FLEXIBLE FIRESTOP SEALANT</b> (mm)	15	
DEPTH OF BACKING MATERIAL <b>CP F 750 FOAM</b> (mm)	FULLY FILL		DEPTH OF BACKING MATERIAL <b>CP 125-50 FOAM</b> (mm)	FULLY FILL	

### NOTES :

1. **CP606 FLEXIBLE FIRESTOP SEALANT** IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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Sheet 2 OF 3  
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Drawing No.  
EM-MTP02

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# METAL PIPE PENETRATION DETAIL (3 OF 3)

FIRE RESISTANCE RATING : UP TO -/240/12

PRODUCT USED :

CP 601S ELASTOMERIC SILICONE SEALANT

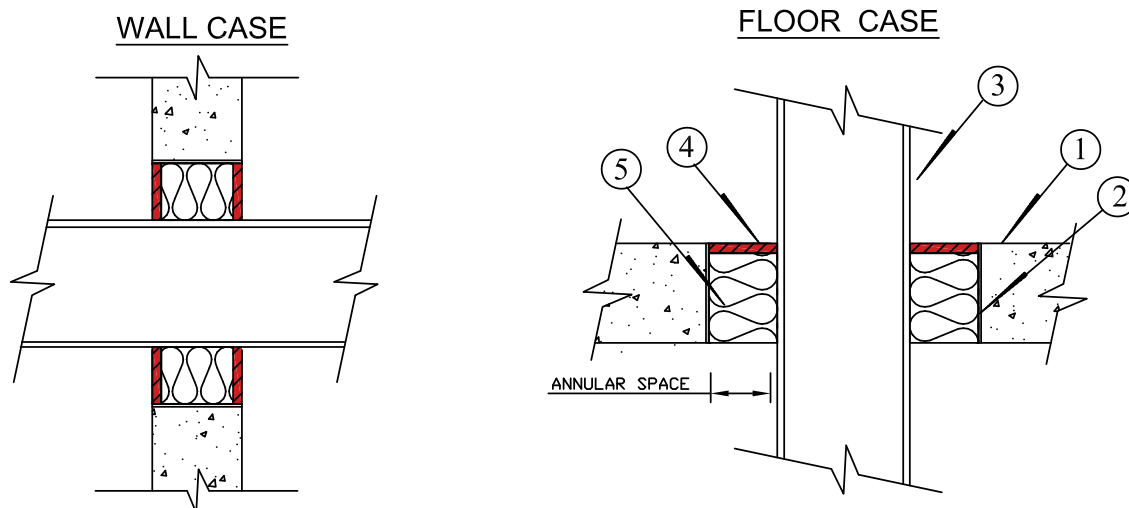
REFERENCE:

WARRES No. 101295/A

WARRES No. C102207

BS 476-20

EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY:
  - A. CONCRETE WALL OR FIRE-RATED BLOCKWALL.
  - B. CONCRETE FLOOR.
2. OPTIONAL : METAL SLEEVE.
3. PENETRATING ITEM: STEEL / CAST / D.I. / COPPER PIPE (SEE NOTE 1)
4. **CP 601S ELASTOMERIC SILICONE SEALANT** (SEE NOTE 2, 3 & 4)
5. MINERAL WOOL THICKNESS OF MINIMUM 60mm FOR WALL AND MINIMUM 100mm FOR FLOOR (MINIMUM 100kg/m<sup>3</sup> DENSITY) TIGHTLY PACKED AND FULLY FILLED ACROSS THE ANNULAR SPACE.

	STEEL PIPE	CAST/ D.I. PIPE	COPPER PIPE
MAX. PIPE DIAMETER (mm)	200	200	50
MAX. ANNULAR GAP (mm)	40	40	40
MIN. DEPTH OF <b>CP 601S ELASTOMERIC SILICONE SEALANT</b> (mm)	20	20	20

## NOTES :

1. MAXIMUM DIAMETER OF THE COPPER PIPE CAN BE INCREASED TO 200mm IF THE F.R.R. IS REDUCED TO -/120/12.
2. FOR WALL PENETRATION, THE F.R.R. IS REDUCED TO -/157/12.
3. THE HARDNESS OF CP601S ELASTIC FIRESTOP SEALANT IS UP TO MIN. 30 SHORE A INDEX. (TEST REPORT IS AVAILABLE UPON REQUEST)
4. THE MOVEMENT CAPACITY OF CP601S ELASTIC FIRESTOP SEALANT CAN ACCOMMODATE UP TO +/- 25%. (TEST REPORT IS AVAILABLE UPON REQUEST)

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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Sheet 3 OF 3  
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Drawing No.  
EM-MTP03

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## PLASTIC PIPE PENETRATION DETAIL (1 OF 3)

FIRE RESISTANCE RATING : UP TO -/245/245

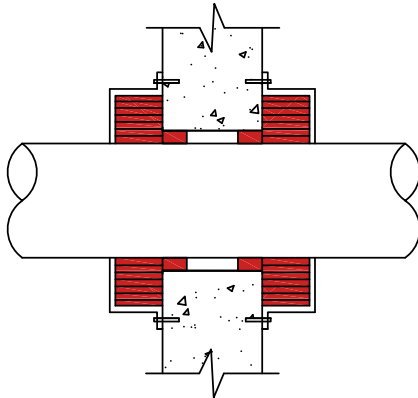
PRODUCT USED : CP643 N / CP644 FIRESTOP COLLAR

REFERENCE: WARRES No. 128947/A & 131014/A & WF No. 179096

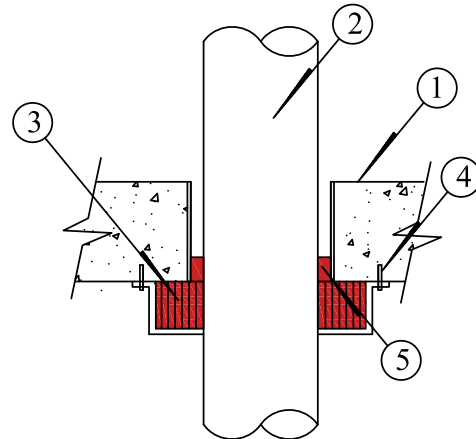
WARRES No. 131014/B & 128947/B & WF No. 163047

BS 476-20  
EN 1366-3

WALL CASE



FLOOR CASE



1. CONCRETE FLOOR OR WALL ASSEMBLY:  
- LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL
2. MAX. 260mm OUTER-DIAMETER PLASTIC PIPE. (SEE TABLE BELOW).
3. **CP643 N / CP644 FIRESTOP COLLAR** WITH ANCHOR HOOK. (SEE NOTE 1 & 3)
4. SLEEVE ANCHOR HSA-R M6.
5. **HILTI CP606 FLEXIBLE FIRESTOP SEALANT**. (SEE NOTES 2)

PIPE O.D. (mm)	PRODUCT	NO. OF HOOKS
20 - 51	CP643-50/1.5"	2
52 - 64	CP643-63/2"	2
65 - 78	CP643-75/2.5"	3
79 - 91	CP643-90/3"	3
92 - 115	CP643-110/4"	3
116 - 125	CP643-125/5"	4
126 - 170	CP643-160/6"	4
171 - 180	CP644-180/7"	8
181 - 210	CP644-200/8"	8
211 - 240	CP644-225/9"	10
241 - 260	CP644-250/10"	12

**NOTES :**

1. **CP643 N / CP644 FIRESTOP COLLAR** IS REQUIRED ON BOTH SIDES OF A WALL CASE.
2. FOR SMOKE-SEAL PERFORMANCE, THE GAP BETWEEN THE OPENING AND THE PLASTIC PIPE TO BE SEALED UP BY 5~10mm **CP606 FLEXIBLE FIRESTOP SEALANT**.
3. FOR OUTDOOR OR WET AREA (MAX. 6" SIZE), A2 (304) STAINLESS STEEL VERSION OF **CP643 N FIRESTOP COLLAR** AND HLC-R 8x40/12 (M6) ANCHOR IS RECOMMENDED.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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# PLASTIC PIPE PENETRATION DETAIL (2 OF 3)

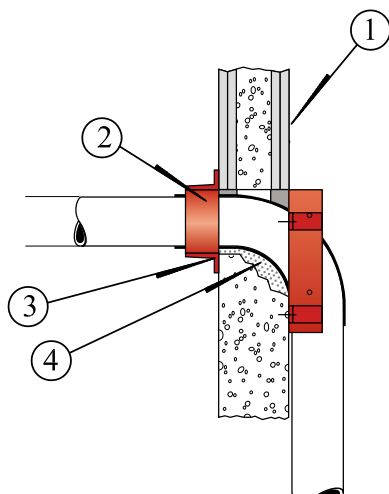
FIRE RESISTANCE RATING : UP TO -/120/-

PRODUCT USED : CFS-C EL COLLAR ENDLESS

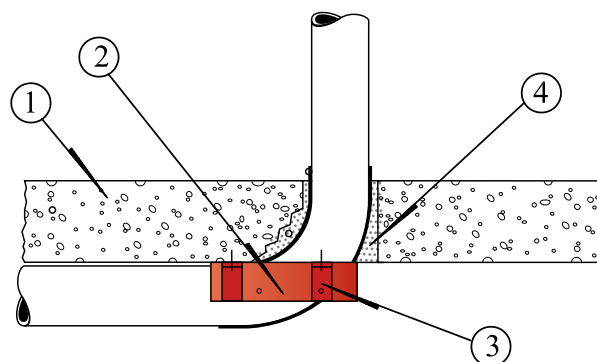
REFERENCE: RED\_R16L28-1C, RED R16L28-2C, ETA 14 0085

BS 476-20  
EN 1366-3

WALL CASE



FLOOR CASE



1. CONCRETE FLOOR OR WALL ASSEMBLY:  
- LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL
2. MAX. 160mm OUTER DIAMETER STRAIGHT PLASTIC PIPE. MAX. 110mm OUTER DIAMETER FOR CORNER / INCLINED PLASTIC PIPE (SEE NOTES 1 & 3)
3. SCREW ANCHOR HUS H6
4. **HILTI CP606 FLEXIBLE FIRESTOP SEALANT** (SEE NOTE 2)

## NOTES :

1. **CFS-C EL COLLAR ENDLESS** IS REQUIRED ON BOTH SIDES OF A WALL CASE.
2. FOR SMOKE-SEAL PERFORMANCE, THE GAP BETWEEN THE OPENING AND THE PLASTIC PIPE TO BE SEALED UP BY 10mm THICKNESS CP606 **FLEXIBLE FIRESTOP SEALANT**.
3. FOR OUTDOOR OR WET AREA, STAINLESS STEEL VERSION OF SCREW ANCHOR HUS-HR M6 IS RECOMMENDED.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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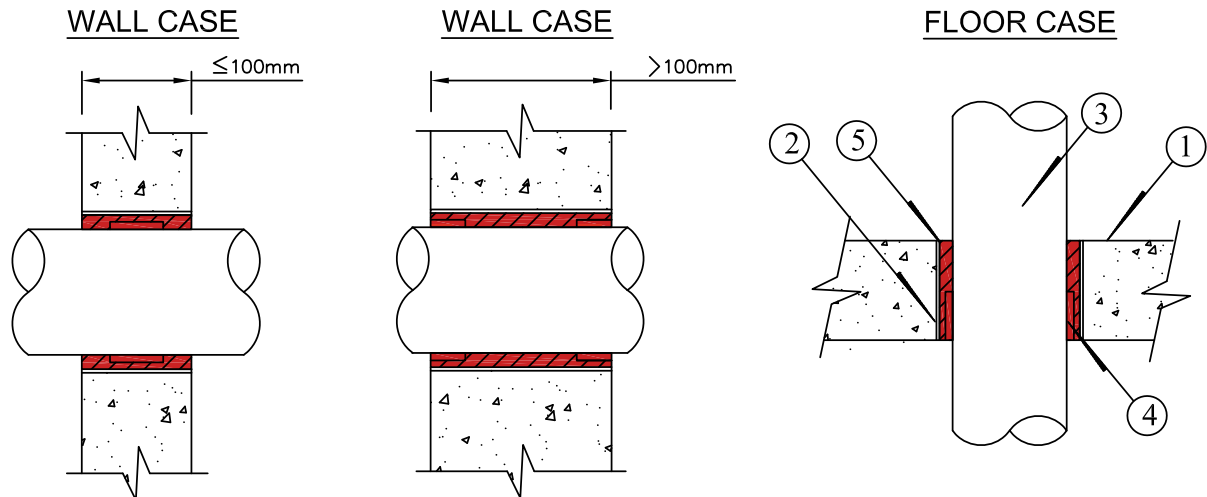
## PLASTIC PIPE PENETRATION DETAIL (3 OF 3)

FIRE RATED PERIOD : -/240/240 (SEE NOTES 3)

PRODUCT USED : CP648-E INTUMESCENT PIPE WRAP  
CP606 FLEXIBLE FIRESTOP SEALANT

REFERENCE: WARRES No. C132995 ISSUE 2 & WF No. 148482/B ISSUE 2

BS 476-20  
EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY:
  - A. CONCRETE WALL OR BLOCK WALL.
  - B. CONCRETE FLOOR.
2. OPTIONAL : METAL SLEEVE (CIRCULAR / RECTANGULAR)
3. PENETRATING ITEM TO BE ONE OR SEVERAL OF THE FOLLOWING:
  - PLASTIC PIPE (MAX 160mm O.D. EACH)
4. **CP648-E INTUMESCENT PIPE WRAP** CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE INSULATION. (SEE NOTES 1 & 3)
  - FOR O.D.  $\leq$  75mm, --- 4.5mm THK CP648-E x 1 LAYER ;
  - FOR 75mm < O.D.  $\leq$  125mm, --- 4.5mm THK CP648-E x 2 LAYERS ;
  - FOR 125mm < O.D.  $\leq$  160mm, --- 4.5mm THK CP648-E x 3 LAYERS
5. FOR ANNULAR SPACE  $\leq$  30mm, FILL THE VOID UP BY MINERAL WOOL WITH **CP606 FLEXIBLE FIRESTOP SEALANT** ON BOTH SIDES OF THE FLOOR/WALL ASSEMBLY. OTHERWISE, VOIDS TO BE FILLED BY **CP636 FIRESTOP MORTAR**. (SEE NOTES 2)

### NOTES :

1. **CP648-E INTUMESCENT PIPE WRAP** IS FLUSH TO THE UNDERSIDE OF THE FLOOR ASSEMBLY.
2. FOR THE PURPOSE OF SMOKE-SEAL AND SURFACE FINISH, NOMINAL THICKNESS OF 5~10mm **CP606 FLEXIBLE FIRESTOP SEALANT** SHOULD BE APPLIED.
3. ALL CASES HAVE -/240/240 F.R.R. EXCEPT FOR PIPE WITH O.D. BETWEEN 125mm AND 160mm (FLOOR CASE), WHICH HAVE -/121/121 F.R.R. ONLY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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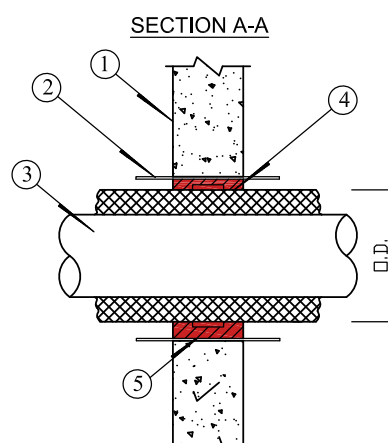
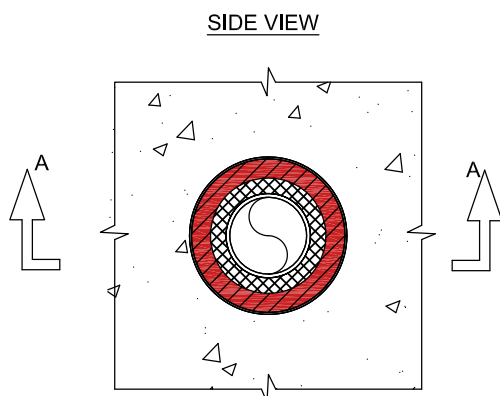
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# INSULATED PVC PIPE PENETRATION DETAIL (1 OF 5)

**FIRE RATED PERIOD:** UP TO -/240/240  
**PRODUCT USED:** CP 648-E FIRESTOP WRAP STRIP  
CFS-B FIRESTOP BANDAGE  
**REFERENCE:** CP 606 FLEXIBLE FIRESTOP SEALANT  
WARRES No.C132995 ISSUE 2 ,WF No.148482/B ISSUE 2,  
R18J14-2A, ASSESSMENT REPORT R09J19,

BS 476-20  
EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY:  
A. CONCRETE WALL OR BLOCK WALL ( $\leq 100\text{mm}$ ).  
B. CONCRETE FLOOR ( $\leq 150\text{mm}$ ).
2. OPTIONAL : METAL SLEEVE (CIRCULAR / RECTANGULAR)
3. PENETRATING ITEM TO BE ONE OR SEVERAL OF THE FOLLOWING:  
- PVC PIPE WITH ELASTOMERIC INSULATION (SEE NOTE 1)
4. **CP 648-E INTUMESCENT FIRESTOPWRAP STRIP OR CFS-B INTUMESCENT FIRESTOP BANDAGE** CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE INSULATION (SEE APPLICATION DETAIL)
5. FOR ANNULAR SPACE  $\leq 30\text{mm}$ , FILL THE VOID UP BY MINERAL WOOL WITH **CP606 FLEXIBLE FIRESTOP SEALANT** ON BOTH SIDES OF THE FLOOR/WALL ASSEMBLY.  
OTHERWISE, VOIDS TO BE FILLED BY **CP636 FIRESTOP MORTAR**. (SEE NOTES 2)

## Application Details

PRODUCT	OUTER DIAMETER OF INSULATED PIPE (MM)		LAYER(S) OF CP 648-E	F.R.R.
CP 648-E	O.D. ≤ 75MM		1 LAYER AT THE MIDDLE OF WALL	-/240/240
	75MM < O.D. ≤ 90MM		1 LAYER AT THE MIDDLE OF WALL	-/240/240
PRODUCT	PVC PIPE DIAMETER (MM)	INSULATION THICKNESS (MM)	LAYER(S) OF WRAP STRIP/BANDAGE	F.R.R.
CFS-B	40	25	2 LAYERS AT MIDDLE OF WALL	-/240/240

## NOTES :

1. PRACTICAL EXAMPLE FOR ELASTOMERIC INSULATION IS ARMAFLEX INSULATION OR EQUIVALENT.
2. FOR THE PURPOSE OF SMOKE-SEAL AND SURFACE FINISH, NOMINAL THICKNESS OF 5~10mm **CP606 FIRESTOP SEALANT** SHOULD BE APPLIED.
3. **CP648-E FIRESTOP WRAP** IS PLACED WITHIN THE FLOOR APERTURE AND FLUSH WITH THE UNDERSIDE OF THE FLOOR ASSEMBLY.
4. ALL CASES HAVE -/240/240 F.R.R. EXCEPT FOR PIPE WITH O.D. BETWEEN 125mm AND 160mm (FLOOR CASE), WHICH HAVE -/121/121 F.R.R. ONLY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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## INSULATED COPPER PIPE PENETRATION DETAIL (2 OF 5)

FIRE RESISTANCE RATING: UP TO -/120/120

PRODUCT USED:

CFS-B FIRESTOP BANDAGE

CP 606 FLEXIBLE FIRESTOP SEALANT

CFS-F FX FIRESTOP FOAM

REFERENCE:

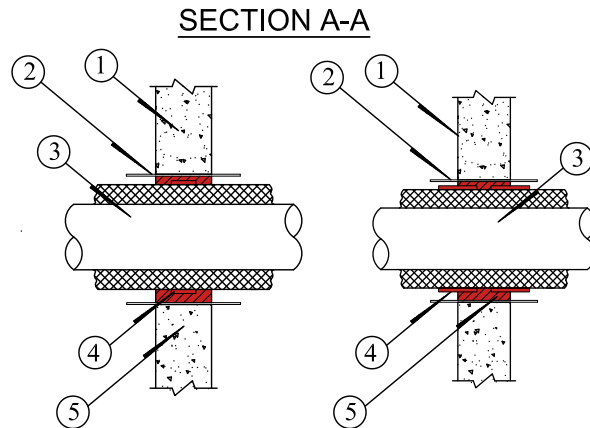
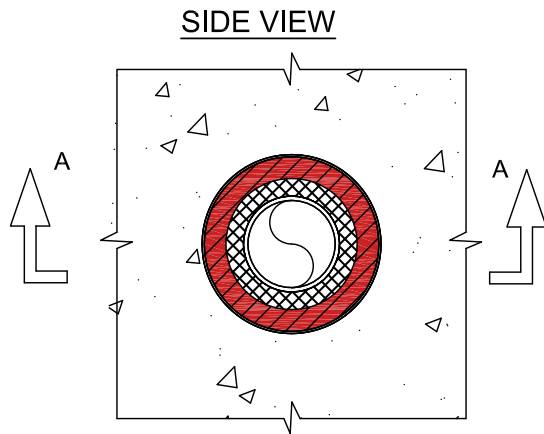
RED\_R16L28-1A, RED\_R17E27-1A

RED\_R17H42-1A, RED\_R17C22-1A

ETA 10/0212

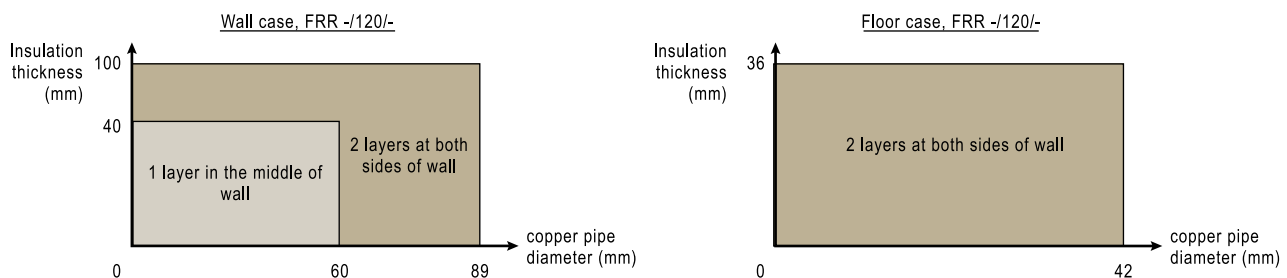
BS 476-20

EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY:  
A. CONCRETE WALL OR BLOCK WALL.  
B. CONCRETE FLOOR.
2. OPTIONAL : METAL SLEEVE (CIRCULAR / RECTANGULAR)
3. PENETRATING ITEM:  
COPPER PIPE WITH ELASTOMERIC / MINERAL WOOL INSULATION (SEE NOTE 1)
4. **CFS-B FIRESTOP BANDAGE** WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE INSULATION (SEE APPLICATION DETAILS)
5. FOR ANNULAR SPACE  $\leq 30\text{mm}$ , FULL THE VOID UP BY MINERAL WOOL WITH **CP606 FLEXIBLE FIRESTOP SEALANT** ON BOTH SIDES OF THE FLOOR/WALL ASSEMBLY. OTHERWISE, VOIDS TO BE FILLED BY **CFS-F FX FIRESTOP FOAM**. (SEE NOTES 2)

### Application Details



### NOTES :

1. PRACTICAL EXAMPLE FOR ELASTOMERIC INSULATION IS ARMAFLEX INSULATION OR EQUIVALENT.
2. FOR THE PURPOSE OF SMOKE-SEAL AND SURFACE FINISH. NOMINAL THICKNESS OF 15mm DEPTH **CP 606 FLEXIBLE FIRESTOP SEALANT** OR 100mm DEPTH **CFS-F FX FIRESTOP FOAM** SHOULD BE APPLIED.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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# CHILLED WATER/HOT WATER PIPE PENETRATION DETAIL(3 OF 5)

FIRE RESISTANCE RATING : UP TO -/120/120

PRODUCT USED : CFS-B BANDAGE

REFERENCE:

CP606 FLEXIBLE FIRESTOP SEALANT

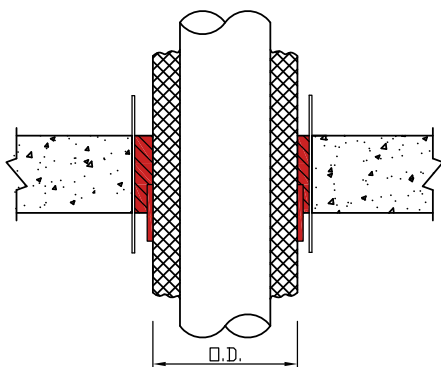
RED\_R16L28-1A, RED\_R15K33-1A

ETA 10/0212

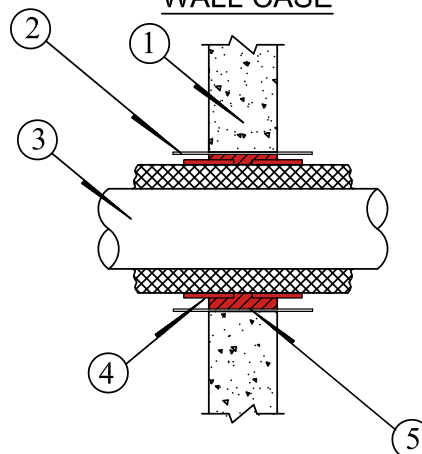
BS 476-20

EN 1366-3

FLOOR CASE



WALL CASE



1. CONCRETE FLOOR OR WALL ASSEMBLY:

A. CONCRETE WALL OR BLOCK WALL.

B. CONCRETE FLOOR.

2. OPTIONAL : METAL SLEEVE (CIRCULAR / RECTANGULAR)

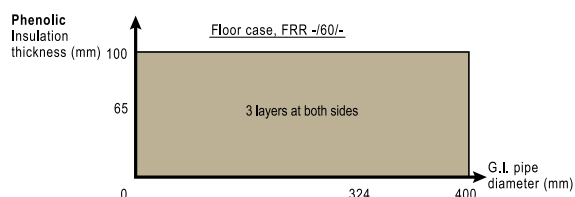
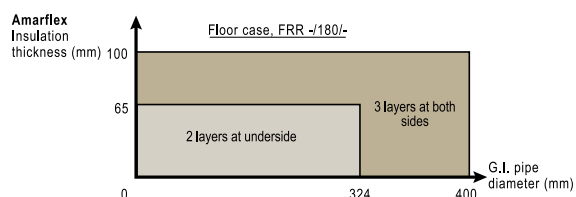
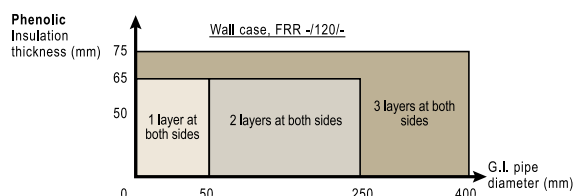
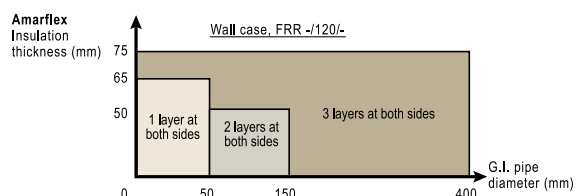
3. PENETRATING ITEM:

COPPER PIPE WITH ELASTOMERIC / PHENOLIC INSULATION (SEE NOTE 1)

4. **CFS-B FIRESTOP BANDAGE** WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE INSULATION (SEE APPLICATION DETAILS)

5. FOR ANNULAR SPACE  $\leq 30\text{mm}$ , FULL THE VOID UP BY MINERAL WOOL WITH **CP606 FLEXIBLE FIRESTOP SEALANT** ON BOTH SIDES OF THE FLOOR/WALL ASSEMBLY. OTHERWISE, VOIDS TO BE FILLED BY CEMENT MORTAR. (SEE NOTES 2)

## Application Details



### NOTES :

1. PRACTICAL EXAMPLE FOR ELASTOMERIC INSULATION IS ARMAFLEX INSULATION, PHENOLIC INSULATION OR EQUIVALENT.
2. FOR THE PURPOSE OF SMOKE-SEAL AND SURFACE FINISH, NOMINAL THICKNESS OF 5~10mm **CP606 FIRESTOP SEALANT** SHOULD BE APPLIED.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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## MULTIPLE REFRIGERANT PIPES PENETRATION DETAIL (4 OF 5)

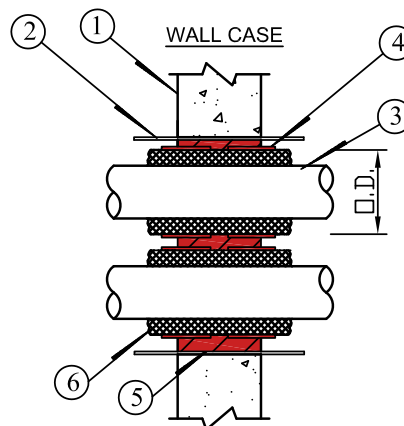
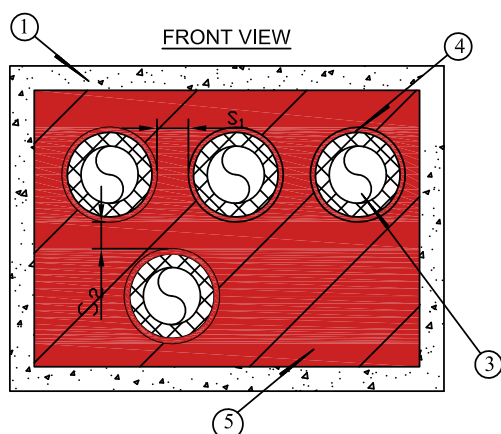
FIRE RESISTANCE RATING : UP TO -/120/120

BS 476-20  
EN 1366-3

PRODUCT USED :

CFS-B FIRSETOP BANDAGE  
CFS-F FX FLEXIBLE FIRESTOP FOAM  
CFS-C EL ENDLESS COLLAR  
CP 636 FIRSETOP MORTAR  
ETA 10/0210 , R16H32-1A,R18J14-2A

REFERENCE:



1. SUBSTRATE TYPES: FLEXIBLE WALL, MASONRY WALL AND CONCRETE WALL
2. OPTIONAL : METAL SLEEVE (CIRCULAR / RECTANGULAR)
3. PENETRATING ITEM:  
COPPER PIPE WITH ARMAFLEX INSULATION LAYER.
4. **CFS-B BANDAGE** (AT BOTH SIDES OF FIRE RATED WALL OR FLOOR, UNLESS SPECIFIED) CONTINUOUSLY WRAPPED AROUND THE OTHER CIRCUMFERENCE OF THE INSULATION LAYER.
5. FOR ANNULAR GAP, IN FLEXIBLE AND RIGID WALL, **CFS-F FX FLEXIBLE FIRESTOP FOAM OR CP 636 FIRESTOP MORTAR** SHOULD BE USED
6. INSULATION LAYER SHOULD BE ARMAFLEX OR EQUIVALENT

FOR FLEXIBLE / RIGID WALL  $\geq 100\text{mm}$

	Pipe diameter (mm)	Insulation thickness (mm)	Layer(s) of Bandage	F.R.R.
Copper	19	40	1 layer in the middle of wall	-/120/-
	88.9	30	1 layer at both sides of wall	-/120/120
	88.9	80	2 layers at both sides of wall	-/120/120
AL composite	20	13	2 layers at both sides of wall	-/120/-
AL composite	75	40.5	2 layers at both sides of wall	-/90/90
PE-HD	110	42.5	2 layers at both sides of wall	-/120/120

### NOTES :

1. PIPE DIAMETER, INSULATION LAYER THICKNESS AND THE ASSOCIATED NO. OF BANDAGE LAYERS CAN BE CHECKED IN ABOVE TABLE. FOR OTHER SIZES, PLEASE CONTACT HILTI ONLINE ENGINEER FOR TEST REPORT SUPPORT.
2. MINIMUM SEPARATION (S1 AND S2) BETWEEN PIPES COULD BE ZERO.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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# MULTIPLE REFRIGERANT PIPES PENETRATION DETAIL (5 OF 5)

FIRE RESISTANCE RATING : UP TO -/120/120

PRODUCT USED :

CFS-B BANDAGE

CFS-F FX FLEXIBLE FIRESTOP FOAM

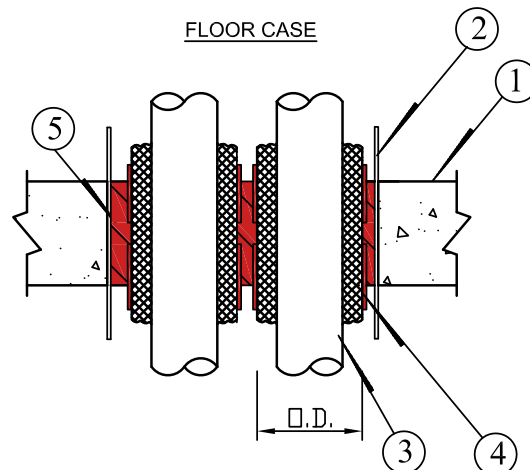
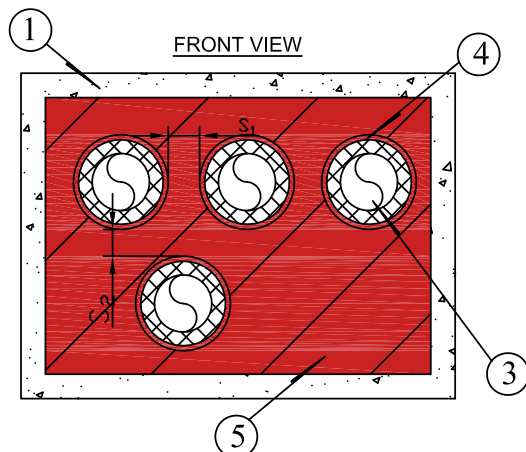
CP636 FIRESTOP MORTAR

ETA 10/0212 & R16H32-1A

BS 476-20

EN 1366-3

REFERENCE:



1. SUBSTRATE TYPES: CONCRETE FLOOR.
2. OPTIONAL : METAL SLEEVE (CIRCULAR / RECTANGULAR)
3. PENETRATING ITEM:
  - A. PIPES INCLUDE STEEL PIPE, COPPER PIPE, ALUMINUM COMPOSITE PIPES AND PE-HD PIPES.
  - B. INSULATION MATERIALS INCLUDES ARMAFLEX, PHENOLIC FOAM AND MINERAL WOOL.
4. **CFS-B BANDAGE** (AT BOTH SIDES OF FIRE RATED WALL OR FLOOR, UNLESS SPECIFIED) CONTINUOUSLY WRAPPED AROUND THE OTHER CIRCUMFERENCE OF THE INSULATION LAYER.
5. FOR ANNULAR GAP, IN RIGID WALLS AND FLOORS, **CP636 FIRESTOP MORTAR** IS USED FOR GAPS FROM 3-50mm.

FOR RIGID FLOOR  $\geq 150\text{mm}$

	Pipe diameter (mm)	Insulation thickness (mm)	Layer(s) of bandage	F.R.R
Copper	54	40	1	-/120/120
Copper	88.9	100	2	-/120/120
Al composite	63	39	2	-/120/120
PE-HD	110	42.5	2	-/180/180

^ floor underside only \* additional insulation protection need

## NOTES :

1. PIPE DIAMETER, INSULATION LAYER THICKNESS AND THE ASSOCIATED NO. OF BANDAGE LAYERS CAN BE CHECKED IN ABOVE TABLE. FOR OTHER SIZES, PLEASE CONTACT HILTI ONLINE ENGINEER FOR TEST REPORT SUPPORT.
2. MINIMUM SEPARATION (S1 AND S2) BETWEEN PIPES COULD BE ZERO.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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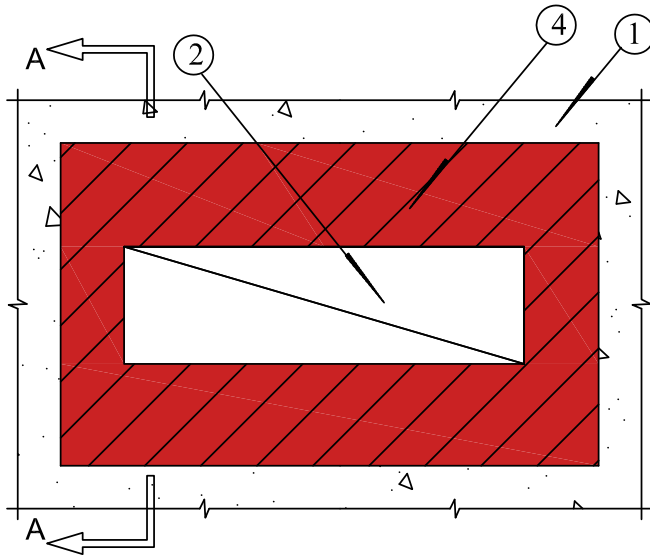
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## DAMPER PENETRATION DETAIL (1 OF 2)

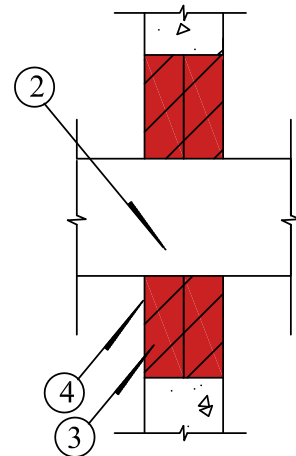
FIRE RESISTANCE RATING: UP TO -/125/122  
 PRODUCT USED: CP 670 FIRE SAFETY COATING  
 CP 606 FLEXIBLE FIRESTOP SEALANT  
 REFERENCE: WFRC No. C129497

BS 476-20  
 EN 1366-3

SIDE VIEW / TOP VIEW



SECTION A-A  
 (WALL)



1. CONCRETE FLOOR OR WALL ASSEMBLY (120/120/120 F.R.R.):  
 A. CONCRETE WALL OR FIRE-RATED BLOCKWALL  
 B. CONCRETE FLOOR
2. METAL AIR DUCT
3. DOUBLE LAYERED (50mm THK EACH) MINERAL WOOL BOARD (MIN. 160kg/m<sup>3</sup> DENSITY)
4. MINIMUM 0.7mm (DRY) THICK **CP670 FIRE SAFETY COATING** APPLIED ON BOTH SIDES OF THE MINERAL WOOL BOARD.

**NOTES :**

1. MAXIMUM SIZE OF OPENING (WALL) = 1200mm x 1200mm. (OR EQUIVALENT AREA)
2. GAPS BETWEEN MINERAL WOOL BOARD AND CONCRETE SURFACE / METAL SLEEVES TO BE FULLY FILLED BY **CP 606 FLEXIBLE FIRESTOP SEALANT**.
3. THE JUNCTION BETWEEN THE APERTURE IN THE COATED BOARD AND THE AIRDUCT TO BE SEALED WITH **CP 606 FLEXIBLE FIRESTOP SEALANT**.
4. FOR FLOOR APPLICATION OF SPAN OVER 2m, INTERMEDIATE SUPPORT(S) UNDER CP670 AT MAXIMUM INTERVAL OF 2m SHOULD BE PROVIDED BY CONTRACTOR.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
 FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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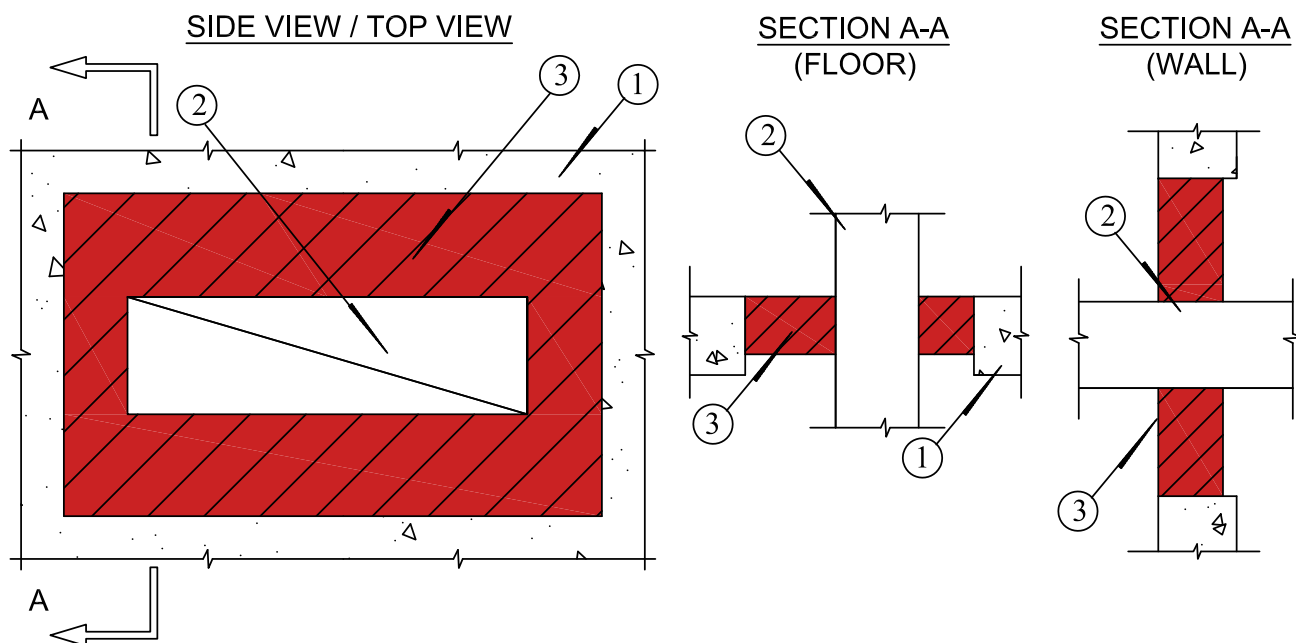
Drawing No.  
 EM-ADT01

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## DAMPER PENETRATION DETAIL (2 OF 2)

FIRE RESISTANCE RATING: UP TO -/255/-  
 PRODUCT USED: CP 636 FIRESTOP MORTAR  
 REFERENCE: BRE No. TE200637 & No. TE200638

BS 476-20  
 EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY (240/240/204 F.R.R.):  
 A. CONCRETE WALL OR FIRE-RATED BLOCKWALL (MIN. 150mm THICKNESS).  
 B. CONCRETE FLOOR (MIN. 150mm THICKNESS).
2. OVERALL 550mm x 570mm METAL AIRDUCT. (OR EQUIVALENT AREA - SEE NOTES 2)
3. MINIMUM 90mm THICK **CP636 FIRESTOP MORTAR** FULLY FILLED ACROSS THE ANNULAR SPACE BETWEEN THE AIRDUCT AND THE CONCRETE WALL/FLOOR.

### NOTES :

1. MAXIMUM SIZE OF OPENING (WALL) = 700mm x 700mm. (OR EQUIVALENT AREA)  
 (FLOOR) = 800mm x 800mm. (OR EQUIVALENT AREA)
2. FOR FLOOR APPLICATION, THE NOMINAL SIZE OF AIRDUCT CAN BE 650mm x 670mm OR EQUIVALENT AREA.
3. FORMWORK CAN BE ANY RIGID SHEET MATERIAL CUT TO FIT THE CONTOUR OF THE AIRDUCT AND PREVENT LEAKAGE OF **CP636 FIRESTOP MORTAR** DURING INSTALLATION.
4. THE INTERNAL OF THE AIRDUCT IS FIRE-PROTECTED BY FIRE SHUTTER OR DAMPER INDEPENDENTLY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
 FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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Drawing No.  
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## CABLE TRAY PENETRATION DETAIL (1 OF 3)

FIRE RESISTANCE RATING : UP TO -/240/86 (SEE NOTES 2)

PRODUCT USED :

CP636 FIRESTOP MORTAR

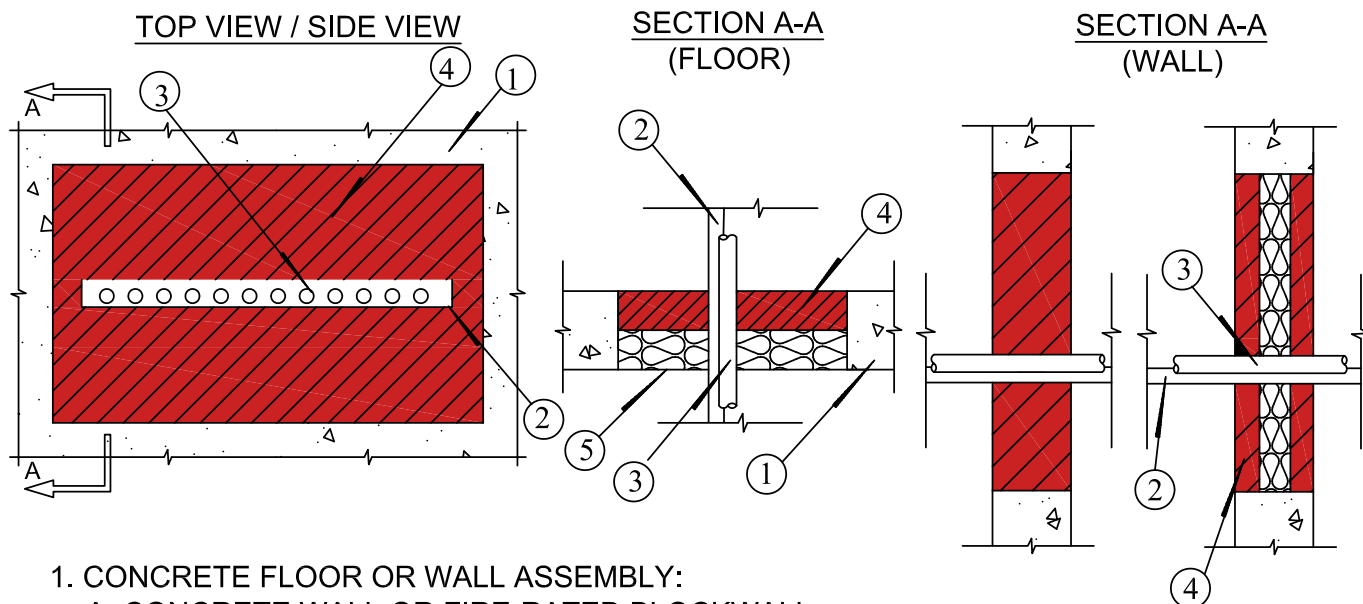
CP611A INTUMESCENT FIRESTOP MASTIC

REFERENCE:

WARRES No. 62305/A -/B -/C & No. 101728 & No. 62320

RED\_R13C05

BS 476-20  
EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY:  
A. CONCRETE WALL OR FIRE-RATED BLOCKWALL.  
B. CONCRETE FLOOR.
2. METAL CABLE TRAY(S).
3. ELECTRIC CABLE(S).
4. SEE TABLE BELOW FOR SIZE OF OPENING AND APPLICATION THICKNESS OF MINERAL WOOL AND CP636 FIRESTOP MORTAR.
5. MINERAL WOOL. (MIN 160kg/m<sup>3</sup> DENSITY)

	MAX. SIZE OF OPENING FOR F.R.R. -/120/-	MAX. SIZE OF OPENING FOR F.R.R. -/240/-
WALL CASE	1200mm x 2000mm. (MIN. WALL THICKNESS = 150mm) FULL FILLED OR AT LEAST 150mm WITH CP636 FIRESTOP MORTAR	600mm x 600mm. (MIN. WALL THICKNESS = 120mm) USE 50mm THICK MINERAL WOOL (MIN. 160kg/m <sup>3</sup> DENSITY AS BACKING MATERIAL AND FILL WITH 35mm THICK CP636 FIRESTOP MORTAR ON BOTH SIDES OF THE MINERAL WOOL OR FULLY FILLED OR AT LEAST WITH 100mm CP636 FIRESTOP MORTAR AND COAT WITH 0.5mm THICK CP611A INTUMESCENT FIRESTOP MASTIC AROUND THE CABLE OVER A DISTANCE OF 30mm LENGTH AT THE MIDDLE OF THE PENETRATION
FLOOR CASE	1000mm x 600mm. (MIN. FLOOR THICKNESS = 150mm) FILLED WITH 150mm CP636 FIRESTOP MORTAR	600mm x 600mm. USE CP636 FIRESTOP MORTAR WITH 75mm THICK MINERAL WOOL OF 50mm AND 160kg/m <sup>3</sup> DENSITY AS BACKING FORMWORK

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
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# CABLE TRAY PENETRATION DETAIL (2 OF 3)

FIRE RESISTANCE RATING: UP TO -/240/-

PRODUCT USED:

CP 670 FIRE SAFETY COATING

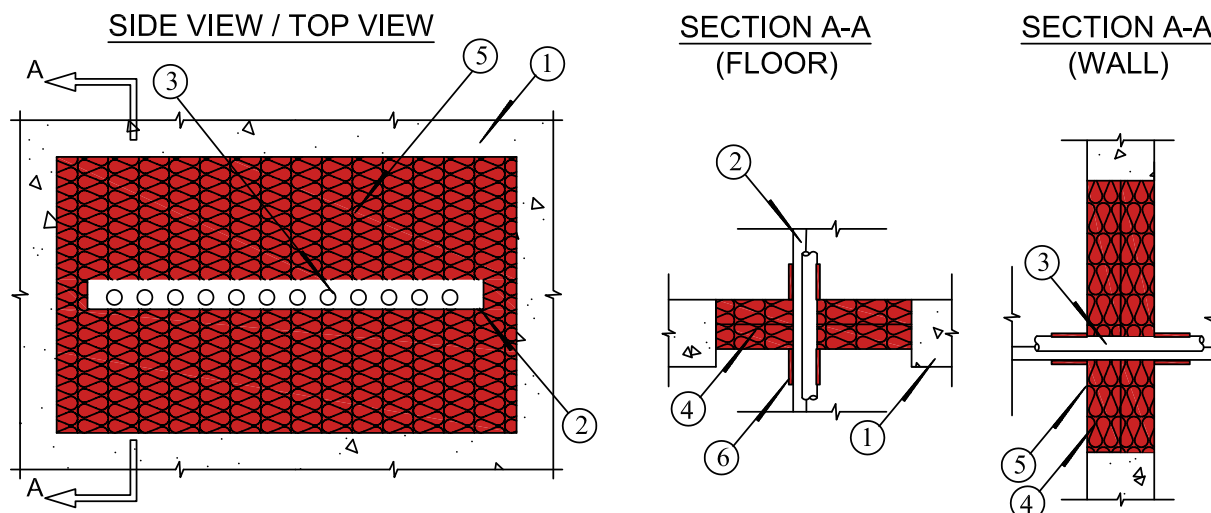
CP 606 FLEXIBLE FIRESTOP SEALANT

REFERENCE:

WFRC No. C128593 & WF No. 175555 (ISSUE 2) &

RED\_R10C05 & PAVUS\_No. Pr-03-02.086 & WFRC No. 140440

BS 476-20  
EN 1366-3



- CONCRETE FLOOR OR WALL ASSEMBLY:  
A. CONCRETE WALL OR FIRE-RATED BLOCKWALL.  
B. CONCRETE FLOOR.
- METAL CABLE TRAY(S).
- ELECTRIC CABLE(S).
- DOUBLE LAYERED (50mm THICKNESS EACH) MINERAL WOOL BOARD (MIN. 160kg/m<sup>3</sup> DENSITY)
- MIN. 0.7mm (DRY) THICKNESS **CP670 FIRE SAFETY COATING** APPLIED ON BOTH SIDES OF THE MINERAL WOOL BOARD.
- MIN. 150mm COAT BACK OF **CP670 FIRE SAFETY COATING** APPLIED ON BOTH SIDES OF THE CABLE AND CABLE TRAY PENETRATION.
- FOR FLOOR APPLICATION OF SPAN OVER 2m, INTERMEDIATE SUPPORT(S) UNDER **CP670 FIRE SAFETY COATING** AT MAXIMUM INTERVAL OF 2m SHOULD BE PROVIDED BY CONTRACTOR.

	Layer(s) of mineral wool board	Max. size of opening for F.R.R. -/120/-	Max. size of opening for F.R.R. -/240/-
Wall Case	1	600mm x 600mm (OR EQUIVALENT AREA)	
	2	1000mm x 2000mm (OR EQUIVALENT AREA)	600mm x 1200mm (OR EQUIVALENT AREA)
Floor Case	2	1000mm x 2000mm (OR EQUIVALENT AREA) FOR APPLICATION OF SPAN OVER 2m, INTERMEDIATE SUPPORT(S) UNDER CP 670 AT MAXIMUM OF 2m, SHOULD BE PROVIDED BY CONTRACTOR	600mm x 600mm (OR EQUIVALENT AREA)

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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EM-CBT02

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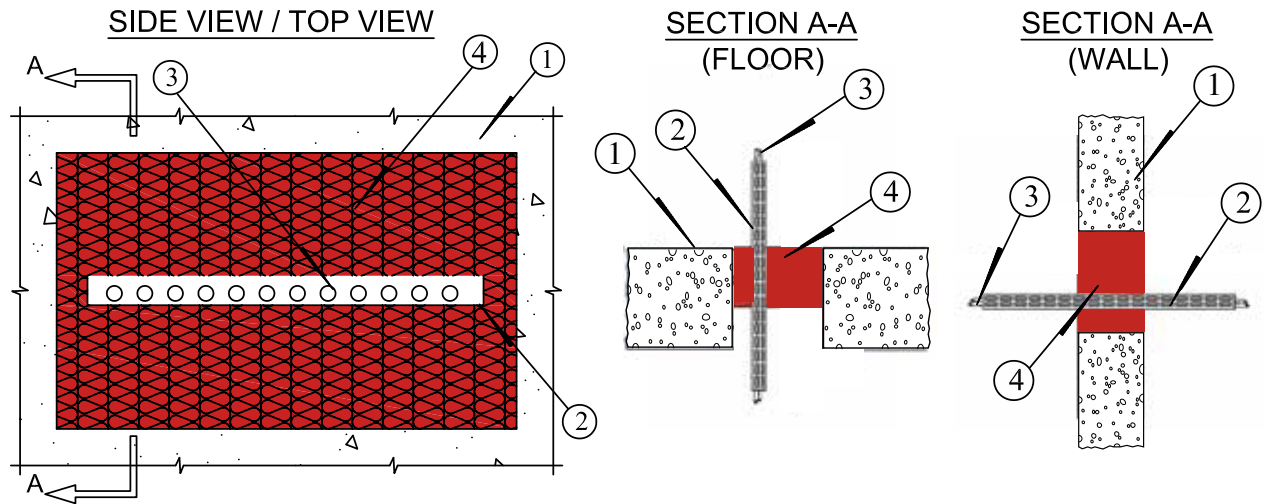


# CABLE TRAY PENETRATION DETAIL (3 OF 3)

FIRE RESISTANCE RATING: UP TO -/120/-  
 PRODUCT USED: CFS-F FX FIRESTOP FOAM

BS 476-20  
 EN 1366-3

REFERENCE: RED\_R16L28-1B, ETA 10/0109



1. CONCRETE FLOOR OR WALL ASSEMBLY:
  - A. CONCRETE WALL OR FIRE-RATED BLOCKWALL.
  - B. CONCRETE FLOOR.
2. METAL CABLE TRAY(S).
3. ELECTRIC CABLE(S).
4. **CFS-F FX FIRESTOP FOAM**

	Thickness of CFS-F FX	Max. opening size	F.R.R.
Wall Case	100mm	600mm x 600mm	-/120/-
Floor Case	150mm	600mm x 600mm	-/120/-

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
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# CABLE / CABLE BUNDLE PENETRATION DETAIL (1 OF 7)

FIRE RESISTANCE RATING: UP TO -/240/240

PRODUCT USED:

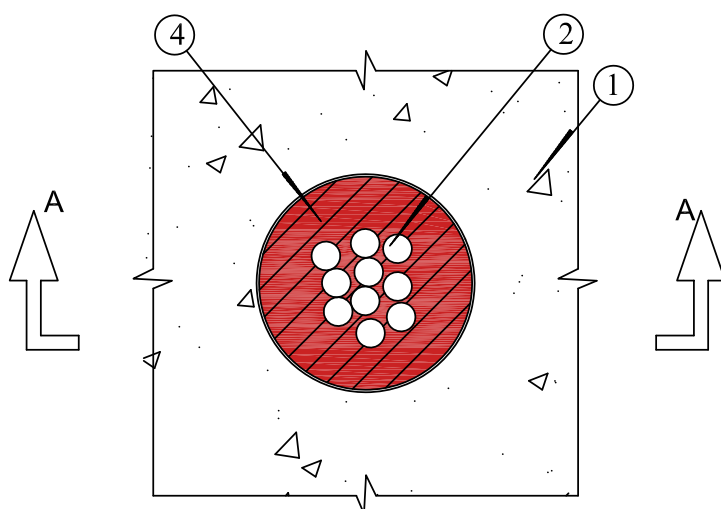
CP611A INTUMESCENT FIRESTOP MASTIC

REFERENCE:

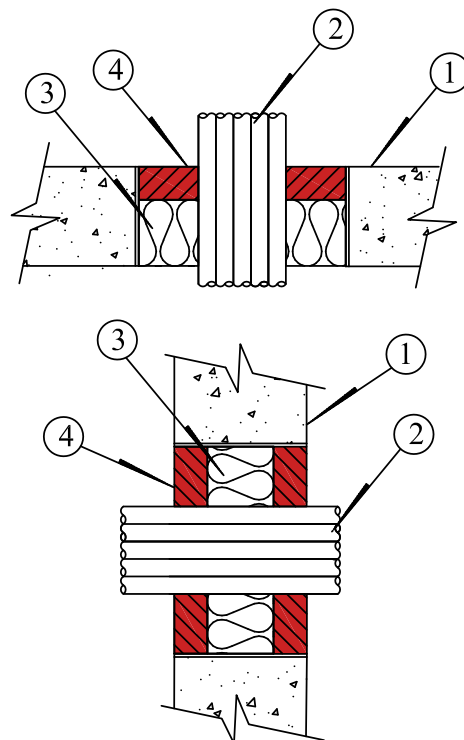
WARRES No. 101728, No. 57312/A & WFRC No. C119076

BS 476-20  
EN 1366-3

ELEVATION



SECTION A-A



1. CONCRETE FLOOR OR WALL ASSEMBLY:  
A. CONCRETE WALL OR FIRE-RATED BLOCKWALL.  
B. CONCRETE FLOOR.
2. CABLE / CABLE BUNDLE. (SEE NOTES 2)
3. MINERAL WOOL (MINIMUM 60kg/m<sup>3</sup>) TIGHTLY PACKED AS BACKING MATERIAL.
4. (FLOOR) MINIMUM 40mm THICKNESS **CP611A INTUMESCENT FIRESTOP MASTIC**.  
(WALL) MINIMUM 30mm THICKNESS **CP611A INTUMESCENT FIRESTOP MASTIC**  
APPLIED ON BOTH SIDES OF A WALL ASSEMBLY.

**NOTES :**

1. MAXIMUM DIAMETER OF OPENING = 67mm (WALL)  
= 160mm (FLOOR)
2. CABLES TO FILL MAXIMUM 60% OF CROSS-SECTIONAL AREA OF OPENING.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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## CABLE / uPVC PENETRATION DETAIL - DRY WALL(2 OF 7)

FIRE RESISTANCE RATING: UP TO -/120/120

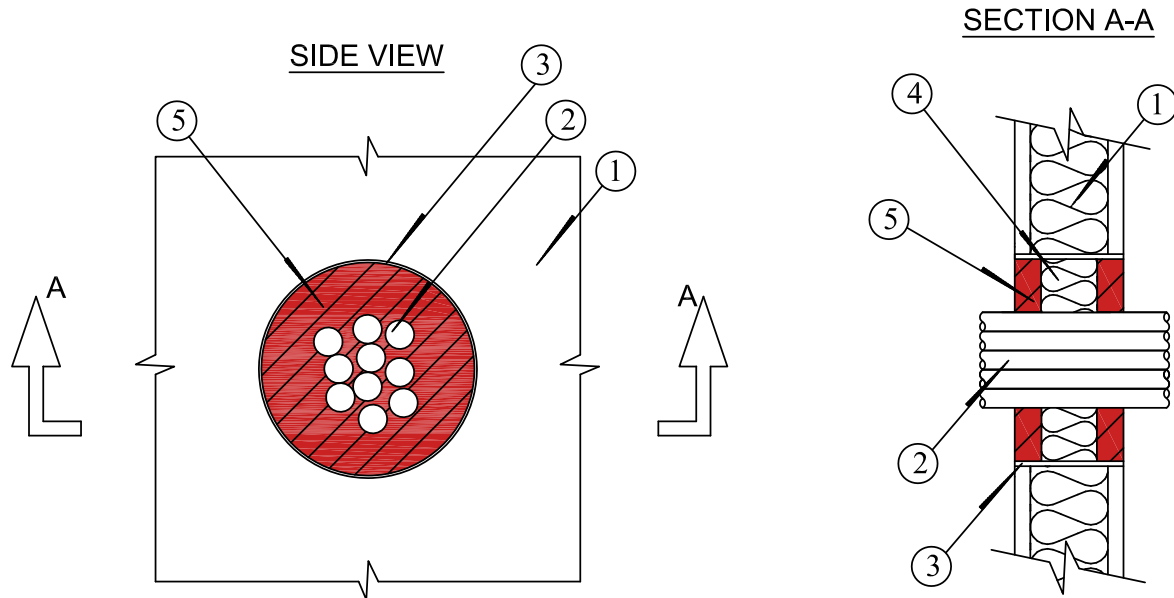
PRODUCT USED:

CFS-IS INTUMESCENT FIRESTOP MASTIC

REFERENCE:

ETA 10/0406

BS 476-20  
EN 1366-3



1. DRYWALL ASSEMBLY.
2. CABLE / uPVC. (SEE NOTES 2).
3. METAL SLEEVE (OPTIONAL).
4. MINERAL WOOL (MINIMUM 60kg/m<sup>3</sup>) TIGHTLY PACKED AS BACKING MATERIAL  $\geq 50$ mm.
5. (WITH MINERAL WOOL) MINIMUM 30mm THICKNESS **CFS-IS INTUMESCENT FIRESTOP MASTIC** APPLIED ON BOTH SIDES OF A WALL ASSEMBLY.

### NOTES :

1. MAXIMUM DIAMETER OF OPENING = 150mm .
2. MAXIMUM DIAMETER OF TIE CABLE BUNDLES = 100mm.
3. MAXIMUM DIAMETER OF PLASTIC CONDUITS = 32mm.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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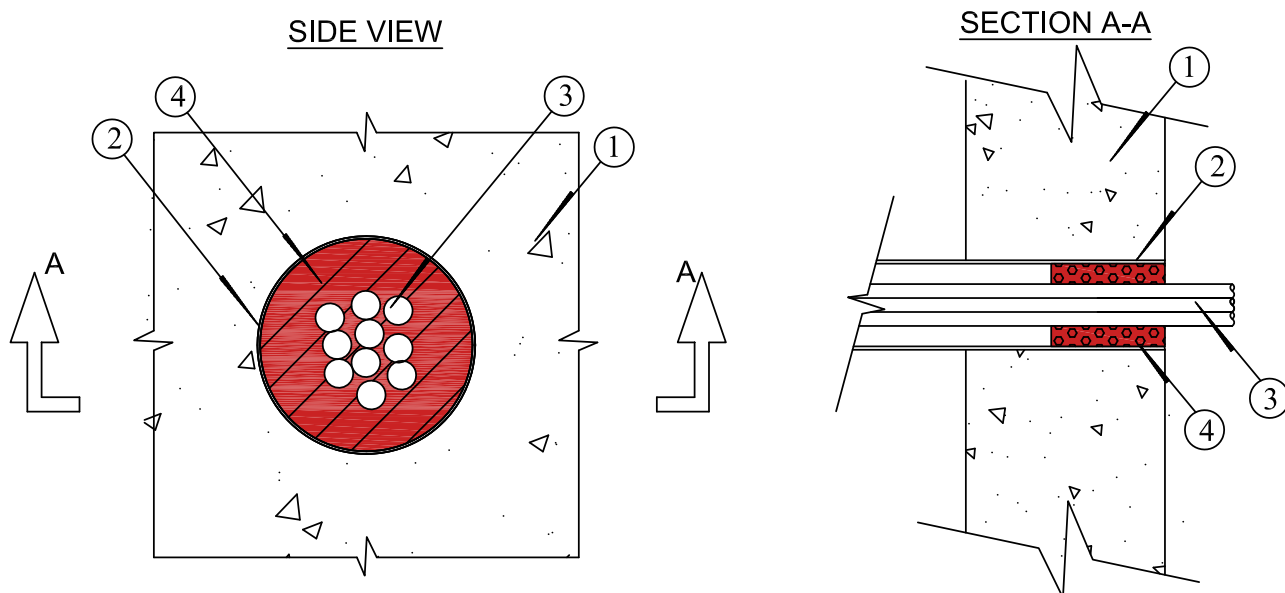
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## UNDERGROUND CABLE DUCT PENETRATION DETAIL (3 OF 7)

FIRE RESISTANCE RATING: UP TO -/151/151  
 PRODUCT USED: CP620 EXPANDING FIRESTOP FOAM  
 REFERENCE: CC 205445C

BS 476-20  
 EN 1366-3



1. CONCRETE WALL ASSEMBLY (-/120/- F.R.R.):  
 - CONCRETE WALL.
2. UNDERGROUND CABLE DUCT.
3. CABLE / CABLE BUNDLE(S). (SEE NOTES 2)
4. MINIMUM 145mm THICKNESS **CP620 EXPANDING FIRESTOP FOAM** TO BE PLACED INSIDE THE CABLE DUCT AND FLUSH WITH EITHER SIDE OF THE WALL ASSEMBLY.

### NOTES :

1. MAXIMUM DIAMETER OF OPENING = 440mm.
2. CABLES TO FILL MAXIMUM 60% OF CROSS-SECTIONAL AREA OF OPENING.
3. FUNCTIONS OF THE DUCT SEALING:
  - FOR DUCT ENTRIES TO BUILDINGS TO FORM GAS, WATER AND FIRE BARRIER.
  - FOR DUCT ENTRIES TO MANHOLES/DRAWPITS TO FORM GAS AND WATER BARRIER.
  - FOR ATC PITS, EMERGENCY TELEPHONE PIT AND ROAD LIGHTING PLINTH TO PREVENT GAS INGRESS.
4. GAS TIGHTNESS TEST & WATER TIGHTNESS TEST REPORTS ARE AVAILABLE ON SEPARATE SUBMISSION UPON REQUEST.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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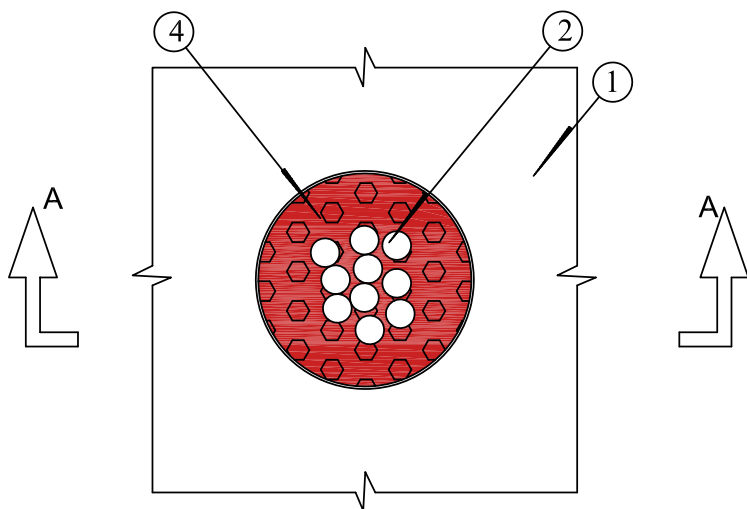
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## CABLE / uPVC PENETRATION DETAIL (4 OF 7)

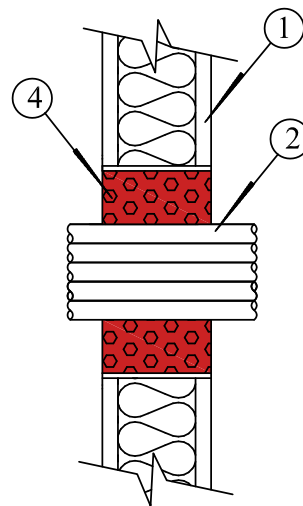
FIRE RESISTANCE RATING: UP TO -/120/120  
 PRODUCT USED: CP620 FIRESTOP FOAM  
 REFERENCE: BRE TE203650

BS 476-20  
 EN 1366-3

ELEVATION



SECTION A-A



1. DRYWALL ASSEMBLY.
2. CABLE / uPVC. (SEE NOTES 2)
3. METAL SLEEVE (OPTIONAL)
4. MINIMUM 145mm THICK **CP620 FIRESTOP FOAM**

**NOTES :**

1. MAXIMUM DIAMETER OF WALL OPENING = 400mm x 400mm
2. CABLES TO FILL MAXIMUM 60% OF CROSS-SECTIONAL AREA OF OPENING.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
 FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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# CABLE / CABLE BUNDLE / CABLE CONDUITS PENTRATION DETAIL (5 OF 7)

FIRE RESISTANCE RATING: -/120/-

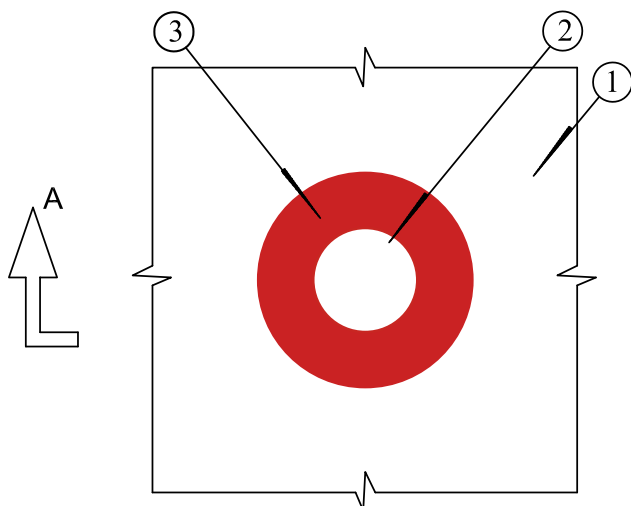
PRODUCT USED: CFS-D CABLE DISC

REFERENCE: RED\_R16L28-1C,R18F18-1A, ETA 16/0050

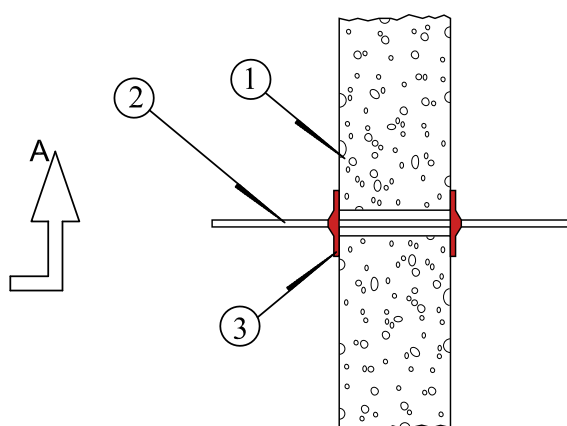
BS 476-20

EN 1366-3

ELEVATION



SECTION A-A



1. CONCRETE WALL OR FIRE-RATED BLOCKWALL.
2. CABLE / PVC CABLE CONDUITS / METAL CONDUITS (SEE NOTE 2)
3. CFS-D CABLE DISC APPLIED AT BOTH SIDERS OF A WALL ASSEMBLY.

## Application Details:

	Type of penetrants	Max diameter of opening	Max. diameter of penetrants	No. of CFS-D
Wall Case	PVC / Metal conduits	40mm	32mm	2
	Cable / Cable Bundles	25mm	16mm	1

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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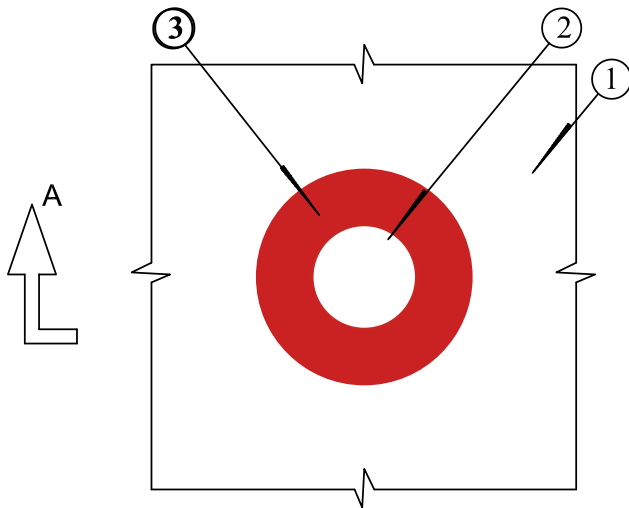
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## CABLE / uPVC PENETRATION DETAIL - DRY WALL (6 OF 7)

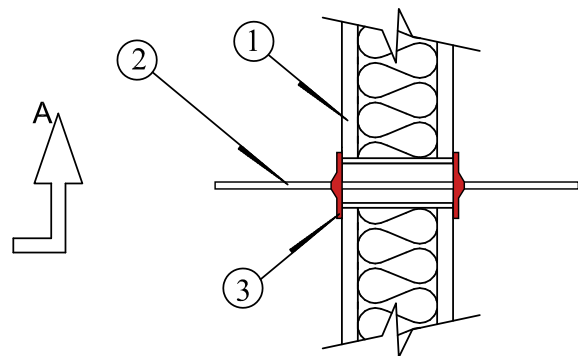
FIRE RESISTANCE RATING: -/120/-  
 PRODUCT USED: CFS-D CABLE DISC  
 REFERENCE: ETA 16/0050

BS 476-20  
 EN 1366-3

ELEVATION



SECTION A-A



1. DRYWALL ASSEMBLY.
2. CABLE / uPVC (SEE NOTE 2)
3. CFS-D CABLE DISC APPLIED AT BOTH SIDES OF A DRYWALL ASSEMBLY.

### Application Details:

	Type of penetrants	Max diameter of opening	Max. diameter of penetrants	No. of CFS-D
Wall Case	Cable/Cable Bundles	25mm	16mm	1

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
 FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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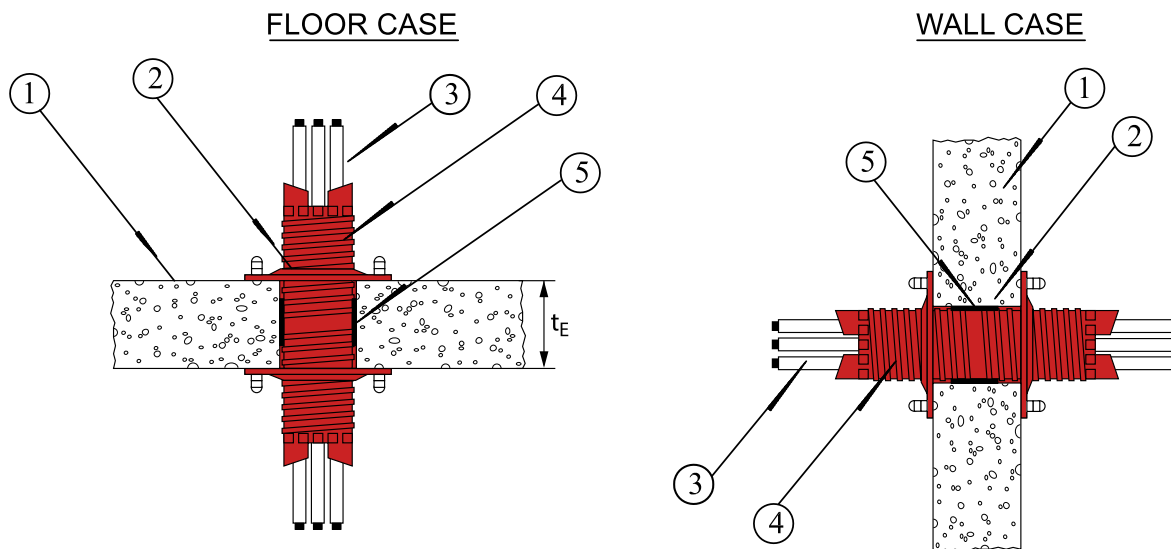
# CABLE PENETRATION DETAIL (7 OF 7)

FIRE RESISTANCE RATING: UP TO -/240/-

PRODUCT USED: CFS-SL SPEED SLEEVE

REFERENCE: RED R16L28-1B, RED R16L28-A1, ETA 11 0153

BS 476-20  
EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY.
2. MAX. OPENING SIZE Ø120mm.
3. AGGREGATE CROSS-SECTIONAL AREA OF CABLE INSIDE TRUNKING TO BE **MAXIMUM 60% OF THE CROSS-SECTIONAL AREA OF CABLE PASS.**
4. **CFS-SL SPEED SLEEVE.**
5. FOR ANNULAR SPACE  $\leq 30\text{mm}$ , FILL THE VOID UP BY MINERAL WOOL WITH MINIMUM 15mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT.**

## NOTES :

1. MINIMUM 15mm DEPTH CP606 FLEXIBLE FIRESTOP SEALANT ON BOTH SIDES OF THE WALL ASSEMBLY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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## TRUNKING PENETRATION DETAILS (1 OF 2)

FIRE RESISTANCE RATING:

PRODUCT USED:

CFS-BL INTUMESCENT FIRESTOP BLOCK

CFS-F FX FLEXIBLE FIRESTOP FOAM,

CP606 FLEXIBLE FIRESTOP SEALANT,

CP670 FIRE SAFETY COATING

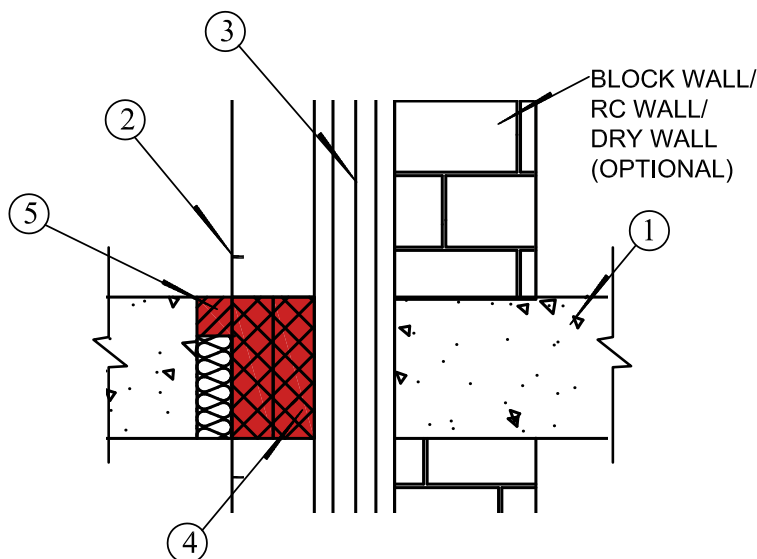
REFERENCE:

RED R16L28-1B, RED R16L28-2B, ETA 10/0109

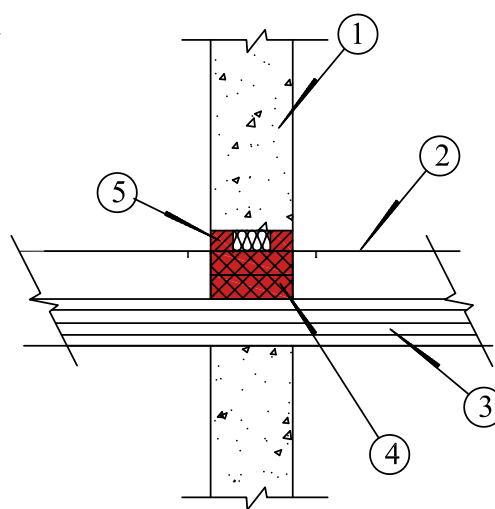
BS 476-20

EN 1366-3

FLOOR CASE



WALL CASE



1. CONCRETE FLOOR OR WALL ASSEMBLY.
2. NOMINAL 100mm X 100mm METAL TRUNKING.
3. AGGREGATE CROSS-SECTIONAL AREA OF CABLE INSIDE TRUNKING TO BE **MAXIMUM 60% OF THE CROSS-SECTIONAL AREA OF THE TRUNKING**.
4. **CFS-BL INTUMESCENT FIRESTOP BLOCK** FILLED INSIDE TRUNKING.
5. FOR ANNULAR SPACE  $\leq 30\text{mm}$ , FILL THE VOID UP BY MINERAL WOOL WITH MINIMUM 15mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT** ON THE TOP SIDE OF THE FLOOR ASSEMBLY. OTHERWISE, VOIDS TO BE FILLED UP BY **CP670 FIRE SAFETY COATING** (SEE NOTE 1)

	Thickness of CFS-BL	Max. opening size	F.R.R.
Wall Case	200mm	100mm x 100mm	-/120/-
Floor Case	200mm	100mm x 100mm	-/120/-

**NOTES :**

1. MINIMUM 15mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT** ON BOTH SIDES OF THE WALL ASSEMBLY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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# TRUNKING PENETRATION DETAILS (2 OF 2)

FIRE RESISTANCE RATING: UP TO -/240/-

PRODUCT USED:

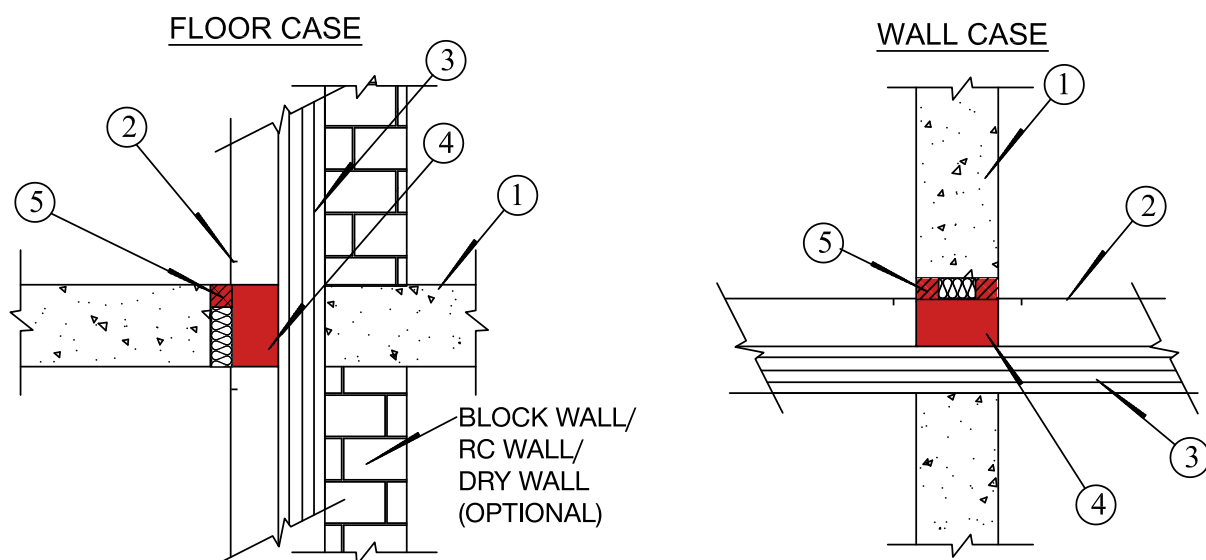
CFS-F FX FLEXIBLE FIRESTOP FOAM,  
CP606 FLEXIBLE FIRESTOP SEALANT,  
CP670 FIRE SAFETY COATING

BS 476-20

EN 1366-3

REFERENCE:

RED R16L28-1B, RED R16L28-2A, ETA-10 0109



1. CONCRETE FLOOR OR WALL ASSEMBLY.
2. NOMINAL 200mm X 200mm METAL TRUNKING.
3. AGGREGATE CROSS-SECTIONAL AREA OF CABLE INSIDE TRUNKING TO BE **MAXIMUM 60% OF THE CROSS-SECTIONAL AREA OF THE TRUNKING.**
4. **CFS-F FX FIRESTOP FOAM** FILLED INSIDE TRUNKING.

	Thickness of CFS-F FX	Trunking size	F.R.R.
Wall Case	200mm	200mm x 200mm	-/120/-
Floor Case	150mm	200mm x 200mm	-/120/-

5. FOR ANNULAR SPACE  $\leq 30\text{mm}$ , FILL THE VOID UP BY MINERAL WOOL WITH MINIMUM 15mm DEPTH CP606 FLEXIBLE FIRESTOP SEALANT ON THE TOP SIDE OF THE FLOOR ASSEMBLY, OTHERWISE, VOIDS TO BE FILLED UP BY CP670 FIRE SAFETY COATING (SEE NOTES 1).

## NOTES :

1. MINIMUM 15mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT** ON BOTH SIDES OF THE WALL ASSEMBLY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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## BUS BAR PENETRATION DETAIL

FIRE RESISTANCE RATING: UP TO -/240/23

EN 60439-2

PRODUCT USED:

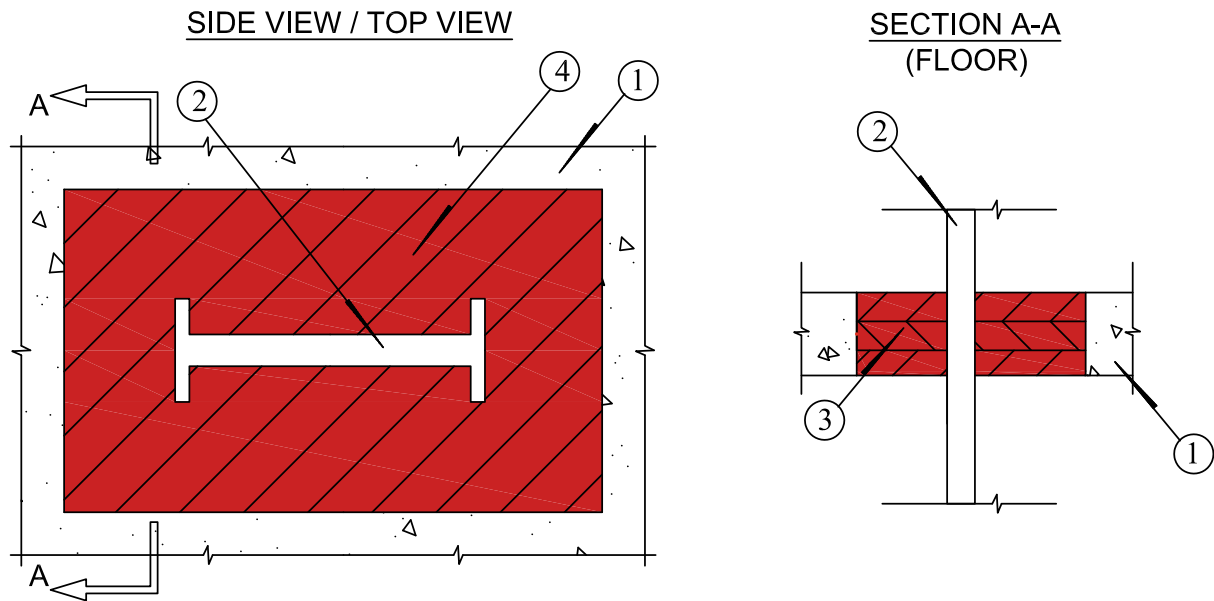
CP 670 FIRE SAFETY COATING

CP 606 FLEXIBLE FIRESTOP SEALANT

REFERENCE:

WFRC No. C128593 & WF No. 175555(ISSUE 2) &

RED\_R10C05&PAVUS\_No. Pr-03-02.086 & WFRC No. 140440



1. CONCRETE FLOOR OR WALL ASSEMBLY:
  - A. CONCRETE WALL OR FIRE-RATED BLOCKWALL.
  - B. CONCRETE FLOOR.
2. BUS BAR
3. 3 LAYERS MINERAL WOOL BOARD (50mm EACH) COATED WITH 1mm CP670 FIRE SAFETY COATING
4. MINIMUM 0.7mm (DRY) THICK **CP670 FIRE SAFETY COATING** APPLIED ON BOTH SIDES OF THE MINERAL WOOL BOARD.

### NOTES :

1. MAXIMUM SIZE OF OPENING = 390mm x 390mm. (OR EQUIVALENT AREA)
2. GAPS BETWEEN MINERAL WOOL BOARD AND CONCRETE SURFACE /METAL SLEEVES TO BE FULLY FILLED BY **CP 606 FLEXIBLE FIRESTOP SEALANT**.
3. THE JUNCTION BETWEEN THE APERTURE IN THE COATED BOARD AND THE AIRDUCT TO BE SEALED WITH **CP 606 FLEXIBLE FIRESTOP SEALANT**.
4. FOR FLOOR APPLICATION OF SPAN OVER 2m, INTERMEDIATE SUPPORT(S) UNDER CP670 AT MAXIMUM INTERVAL OF 2m SHOULD BE PROVIDED BY CONTRACTOR.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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## MULTIPLE PENETRATION APPLICATION DETAIL (1 OF 2)

FIRE RESISTANCE RATING: UP TO -/264/120

PRODUCT USED:

CP 670 FIRE SAFETY COATING

CP 606 FLEXIBLE FIRESTOP SEALANT

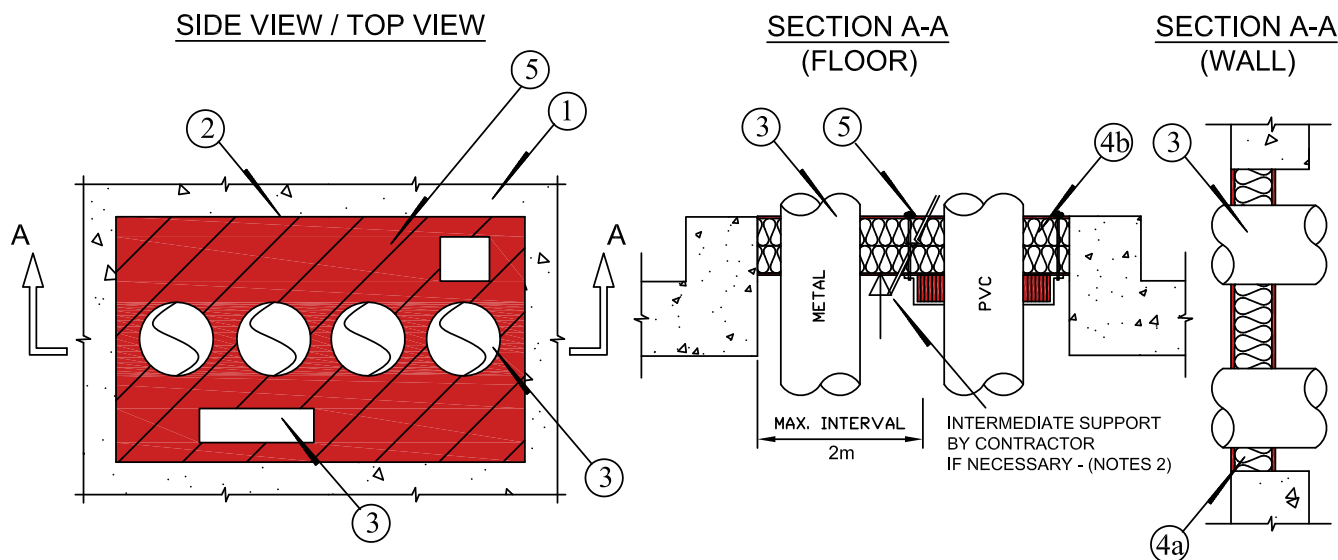
REFERENCE:

WFRC No. C128593, C130025, C129497

WF No. 175555 (ISSUE 2) & RED\_R10C06

PAVUS No. PR-03--2.086

BS 476-20  
EN 1366-3



1. CONCRETE FLOOR OR WALL ASSEMBLY (240/240/240 F.R.R.):
  - A. CONCRETE WALL OR FIRE-RATED BLOCKWALL (MIN. 100mm THICKNESS).
  - B. CONCRETE FLOOR (MIN. 150mm THICKNESS).
2. MARKING OUT OPENING ZONE. (SEE NOTES 1)
3. PENETRATING ITEM(S) TO BE ONE OR SEVERAL OF THE FOLLOWING:
  - COPPER PIPES, STEEL PIPES, STEEL TRUNKING, CABLE TRAYS & PVC-U PIPES
4. (a) SINGLE LAYERED (50mm THICKNESS) MINERAL WOOL BOARD (MIN. 160kg/m<sup>3</sup> DENSITY)  
(b) DOUBLE LAYERED (50mm THICKNESS EACH) MINERAL WOOL BOARD (MIN. 160kg/m<sup>3</sup> DENSITY)
5. MINIMUM 0.7mm (DRY) THICKNESS **CP670 FIRE SAFETY COATING** APPLIED ON BOTH SIDES OF THE MINERAL WOOL BOARD.

### NOTES :

1. MAXIMUM SIZE OF OPENING (WALL) = 2400mm x 5000mm. (OR EQUIVALENT AREA)  
(FLOOR) = 1300mm x 5000mm. (OR EQUIVALENT AREA)
2. FOR FLOOR APPLICATION OF SPAN OVER 2m, INTERMEDIATE SUPPORT(S) UNDER **CP670 FIRE SAFETY COATING** AT MAXIMUM INTERVAL OF 2m SHOULD BE PROVIDED BY CONTRACTOR.
3. GAPS BETWEEN MINERAL WOOL BOARD AND CONCRETE/METAL SLEEVES TO BE FULLY FILLED BY **CP 606 FLEXIBLE FIRESTOP SEALANT**.
4. FIRESTOP JOINTS INSIDE THE METAL SLEEVES TO BE CONSIDERED SEPERATELY.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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## MULTIPLE PENETRATION APPLICATION DETAIL (2 OF 2)

FIRE RESISTANCE RATING: UP TO -/288/69

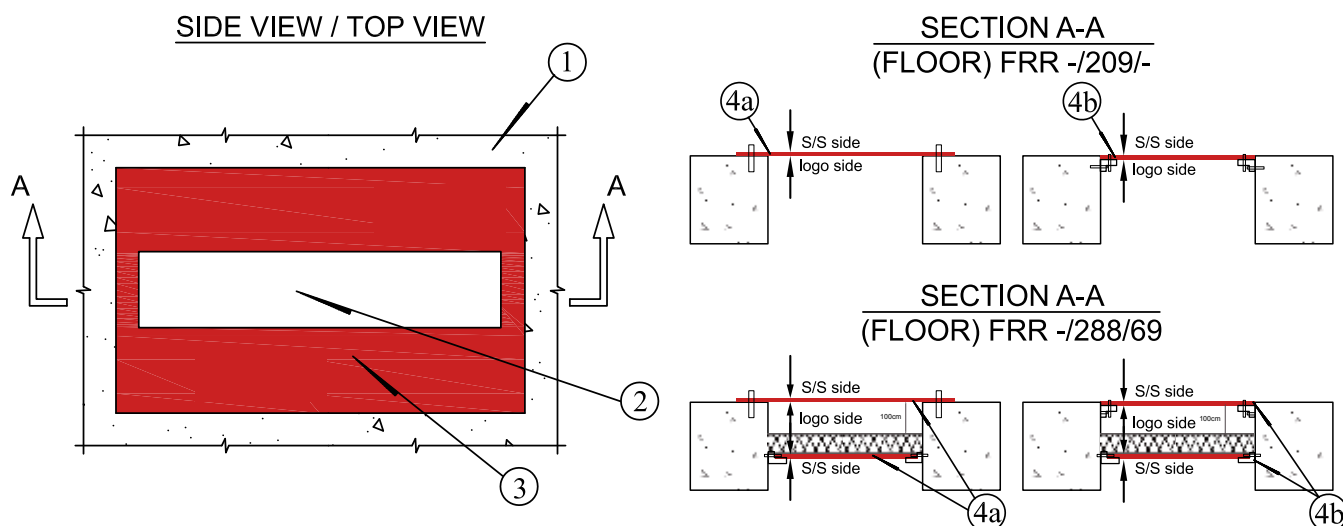
PRODUCT USED:

CFS-COS FIRESTOP COMPOSITE SHEET

REFERENCE:

R18G14-1A

BS 476-20



1. CONCRETE FLOOR OR WALL ASSEMBLY (240/240/240 F.R.R.):  
A. CONCRETE WALL OR FIRE-RATED BLOCKWALL (MIN. 100mm THICKNESS).  
B. CONCRETE FLOOR (MIN. 150mm THICKNESS).
2. PENETRATING ITEM(S) TO BE PIPE AND CABLE PENTRATION ENCLOSED IN A METRAL SLEEVE OR STEEL TRUNKING
3. **CFS-COS FIRESTOP COMPOSITE SHEET** TO BE INSTALLED WITH EITHER METHOD 4a or 4b (SEE APPLICATION DETAILS)

### Application Details:

	Layer(s) of CFS-COS	Layer(s) of Mineral Wool	FRR
Floor Case	1	n/a	-/209/-
	2	1	-/288/69

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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# SUNKEN PLUMBING PIPE THROUGH DUCTING ROOM

FIRE RESISTANCE RATING : UP TO -/120/-

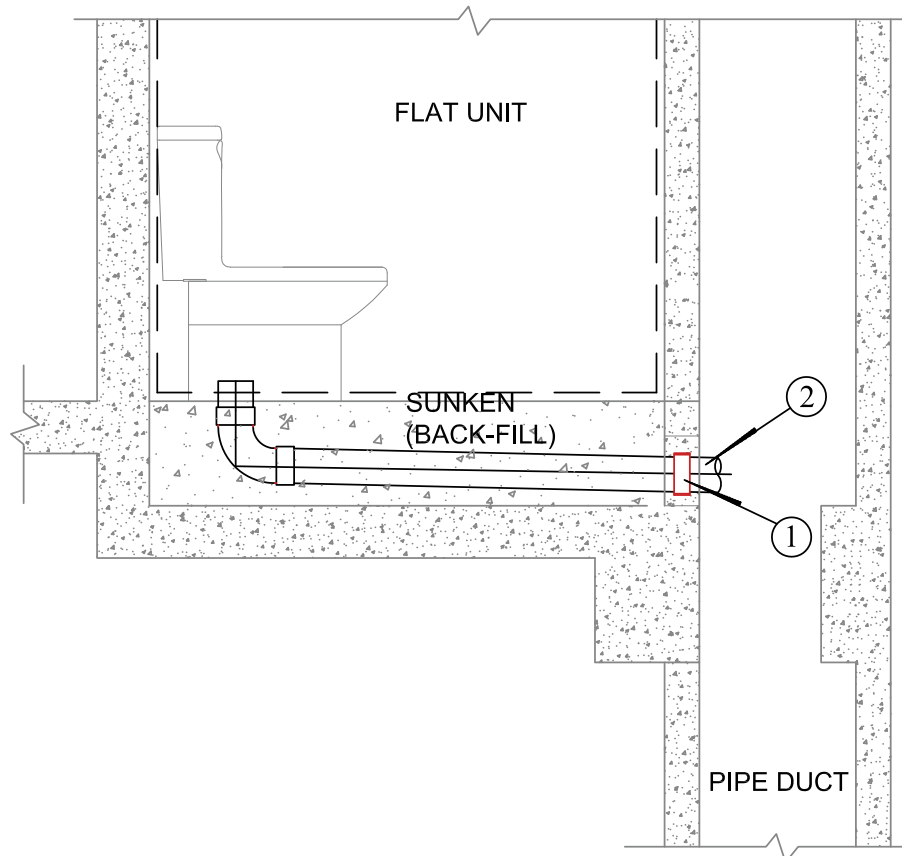
PRODUCT USED :

CP648-E INTUMESCENT PIPE WRAP

REFERENCE:

R16F36-1A

BS 476-20



1. **CP648-E INTUMESCENT PIPE WRAP**
2. PENETRATING ITEM (SEE NOTES)

## NOTES :

1. FOR UPVC PIPE WITH 100mm DIAMETER, TWO LAYERS OF **CP648-E** ARE USED.
2. FOR UPVC PIPE WITH 50mm DIAMETER, ONE LAYERS OF **CP648-E** IS USED.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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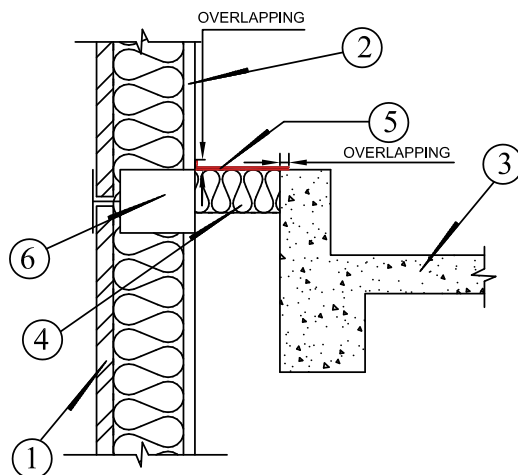
## HORIZONTAL CURTAIN WALL JOINT DETAIL

FIRE RESISTANCE PERIOD: UP TO -/165/144

PRODUCT USED: CFS-SP WB FIRESTOP JOINT SPRAY

REFERENCE: EFECTIS No. 08-E-294 Indice A, RED\_R16G23-1A, RED\_R16E18-1A

EN 1364-3  
EN 1364-4  
EN12101-1



1. SPANDREL GLASS AND ALUMINUM MULLION CURTAIN WALL ASSEMBLY (NON FIRE-RATED).
2. BACK PANEL
3. CONCRETE FLOOR / GYPSUM BOARD ASSEMBLY.
4. MINERAL WOOL
  - A. FOR FRR -/120/120, MIN. 135mm THICKNESS MINERAL WOOL (MIN. 60kg/m<sup>3</sup> DENSITY) FRICTION FIT TO THE JOINT WITH 25% COMPRESSION, FLUSH WITH THE TOP SURFACE OF CONCRETE EDGE.
  - B. FOR FRR -/120/60, MIN. 100mm THICKNESS MINERAL WOOL (MIN. 60kg/m<sup>3</sup> DENSITY) FRICTION FIT TO THE JOINT WITH 25% COMPRESSION, FLUSH WITH THE TOP SURFACE OF CONCRETE EDGE.
5. MINIMUM 3mm (WET) THICKNESS **CFS-SP WB FIRESTOP JOINT SPRAY** TO COMPLETELY COVER MINERAL WOOL AND OVERLAPPING MINIMUM 15mm ONTO CONCRETE FLOOR AND CURTAIN WALL.
6. TRANSOM

### NOTES :

1. MAXIMUM WIDTH OF JOINT = 200mm.
2. THIS FIRESTOP SYSTEM FORMS A CONTINUOUSLY SEALED AIR-TIGHT (SMOKE-SEAL) BARRIER BETWEEN THE BUILDING STRUCTURE AND THE FACADE TO SEPARATE ADJACENT FLOORS COMPARTMENTS.
3. THE MINERAL WOOL IS INSTALLED WITH COMPRESSION IN THE WAY THAT IT SHALL REMAIN EFFECTIVE THROUGHOUT ALL BUILDING MOVEMENTS AND MOVEMENTS IN EVENT OF A FIRE.
4. (OPTIONAL) ADDITIONAL SUPPORT UNDERNEATH THE MINERAL WOOL BY L-CLIP OR CONTINUOUS METAL TRAY TO BE DESIGNED SEPARATELY BY CONTRACTORS.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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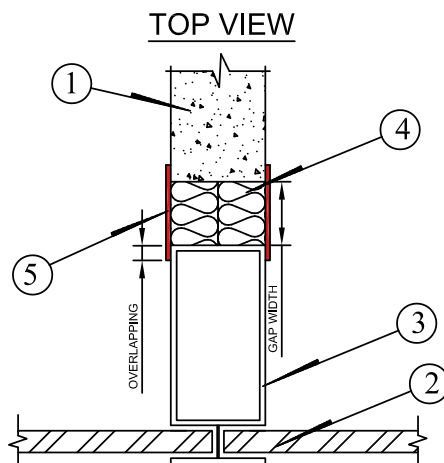
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# VERTICAL CURTAIN WALL JOINT DETAIL

FIRE RESISTANCE PERIOD: UP TO -/120/120  
PRODUCT USED: CFS-SP WB FIRESTOP JOINT SPRAY  
REFERENCE: RED\_R16J25-1A & RED\_R16G23\_1A

EN 1364-3  
EN12101-1



1. BLOCK / CONCRETE WALL
2. GLASS / PANEL / STONE
3. METAL MULLION
4. MINERAL WOOL.
5. MINIMUM 3mm (WET) THICKNESS **CFS-SP WB FIRESTOP JOINT SPRAY** TO COMPLETELY COVER MINERAL WOOL AND OVERLAPPING MINIMUM 15mm ONTO CONCRETE WALL AND METAL MULLION.

## NOTES :

1. MAXIMUM GAP WIDTH = 150mm.
2. THIS FIRESTOP SYSTEM FORMS A CONTINUOUSLY SEALED AIR-TIGHT (SMOKE-SEAL) BARRIER BETWEEN THE BUILDING STRUCTURE AND THE FACADE TO SEPARATE ADJACENT ROOM COMPARTMENTS.
3. THE MINERAL WOOL IS INSTALLED WITH COMPRESSION IN THE WAY THAT IT SHALL REMAIN EFFECTIVE THROUGHOUT ALL BUILDING MOVEMENTS AND MOVEMENTS IN EVENT OF A FIRE.

FRR -/120/60	FRR -/120/120
WALL THICKNESS $\geq$ 100mm, MIN. 60kg/m <sup>3</sup> DENSITY	WALL THICKNESS $\geq$ 120mm, MIN. 80kg/m <sup>3</sup> DENSITY
	120mm > WALL THICKNESS $\geq$ 100mm, MIN. 100kg/m <sup>3</sup> DENSITY

\* NOMINAL DENSITY COULD BE ACHIEVED BY LOWER DENSITY WITH COMPRESSION

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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## DRYWALL JOINT APPLICATION DETAIL

FIRE RESISTANCE RATING: UP TO -/136/136

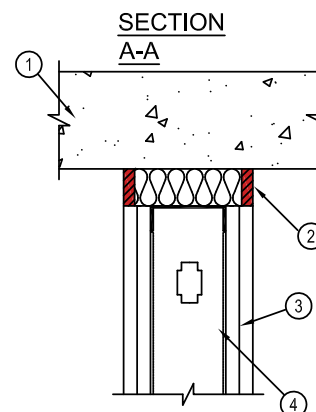
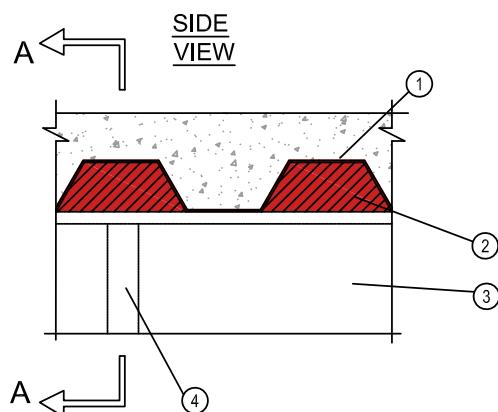
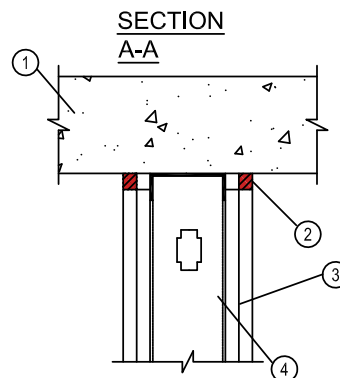
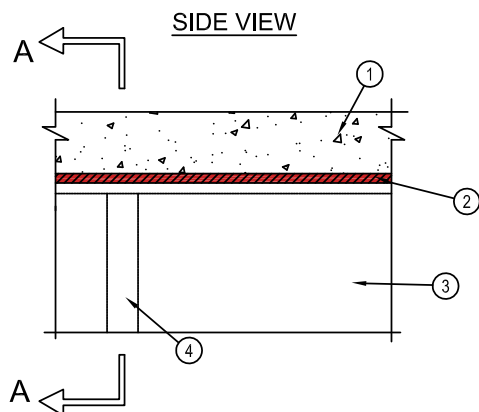
PRODUCT USED:

CP606 FLEXIBLE FIRESTOP SEALANT

REFERENCE:

WARRES No. 71151A

BS 476-20  
EN1366-4



1. CONCRETE FLOOR ASSEMBLY (120/120/120 F.R.R.)
2. MINIMUM 10mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT**, WITH 100 kg/m<sup>3</sup> DENSITY MINERAL WOOL AS BACKING MATERIAL.
3. GYPSUM BOARD WALL OF DRYWALL ASSEMBLY (-/120/120 F.R.R.)
4. CEILING RUNNER AND STEEL STUDS FASTENED TO UNDERSIDE OF CONCRETE FLOOR.

**NOTES :**

1. MAXIMUM WIDTH OF JOINT (COMPOSITE SLAB CASE) = 65mm.
2. FIRE-RATING OF THE SYSTEM IS ONLY AS GOOD AS PERFORMANCE OF DRYWALL ASSEMBLY UNDER FIRE CONDITIONS.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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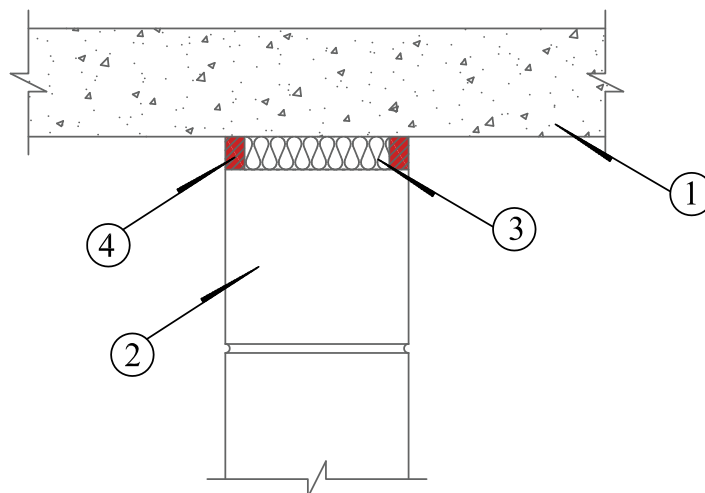
# TOP OF WALL JOINT APPLICATION DETAIL (1 OF 2)

FIRE RESISTANCE RATING : UP TO -/242/242

PRODUCT USED : CP601S ELASTIC FIRESTOP SEALANT

REFERENCE TEST REPORTS: WFR No. 143653 & WFR No. 71151/B  
WFR No. 168400 & RED\_R15H05

BS 476-20  
EN1366-4



1. CONCRETE FLOOR ASSEMBLY (240/240/240 F.R.R.)
2. CONCRETE WALL OR FIRE-RATED BLOCK WALL (240/240/240 F.R.R.)
3. MIN. 100kg/m<sup>3</sup> DENSITY MINERAL WOOL FULLY FILLED ACROSS AS BACKING.
4. (JOINT WIDTH ≤ 15mm) MIN. 6mm DEPTH **CP601S ELASTIC FIRESTOP SEALANT**, FLUSH WITH BOTH SIDES OF THE WALL SURFACE.  
(JOINT WIDTH ≤ 100mm) MIN. 15mm DEPTH **CP601S ELASTIC FIRESTOP SEALANT**, FLUSH WITH BOTH SIDES OF THE WALL SURFACE.

## NOTES:

1. MAXIMUM JOINT WIDTH = 100mm.
2. THIS SYSTEM IS APPLICABLE TO BOTH INDOOR OR OUTDOOR APPLICATION.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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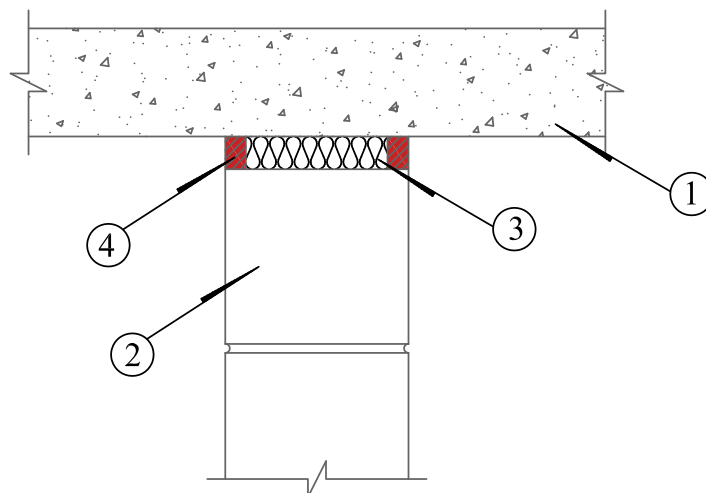
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## TOP OF WALL JOINT APPLICATION DETAIL (2 OF 2)

FIRE RESISTANCE RATING: UP TO -/242/242  
 PRODUCT USED: CP606 FLEXIBLE FIRESTOP SEALANT  
 REFERENCE: WARRES No. 69754/C & WFRS No. 141323  
 WFRS No. 168400

BS 476-20  
 EN1366-4



1. CONCRETE FLOOR ASSEMBLY (240/240/240 F.R.R.)
2. CONCRETE WALL OR FIRE-RATED BLOCK WALL (240/240/240 F.R.R.)
3. MIN. 100kg/m<sup>3</sup> DENSITY MINERAL WOOL FULLY FILLED ACROSS AS BACKING. SEE NOTES 2 BELOW FOR DIFFERENT BACKING MATERIAL.
4. (JOINT WIDTH ≤ 15mm) MIN. 6mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT**, FLUSH WITH BOTH SIDES OF THE WALL SURFACE.  
 (JOINT WIDTH ≤ 30mm) MIN. 15mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT**, FLUSH WITH BOTH SIDES OF THE WALL SURFACE.

### NOTES:

1. MAXIMUM JOINT WIDTH = 30mm.
2. INTEGRITY & INSULATION PERFORMANCE SUMMARIZED AS BELOW:

JOINT WIDTH	SEALANT DEPTH	BACKING MATERIAL	INTEGRITY	INSULATION
≤15mm	6mm	MINERAL WOOL	240	240
≤30mm	15mm	MINERAL WOOL	240	180
≤15mm	6mm	CF 125-50 FOAM	120	60
≤30mm	15mm	CF 125-50 FOAM	240	120
≤15mm	6mm	RE ROD	120	60
≤30mm	15mm	RE ROD	240	120

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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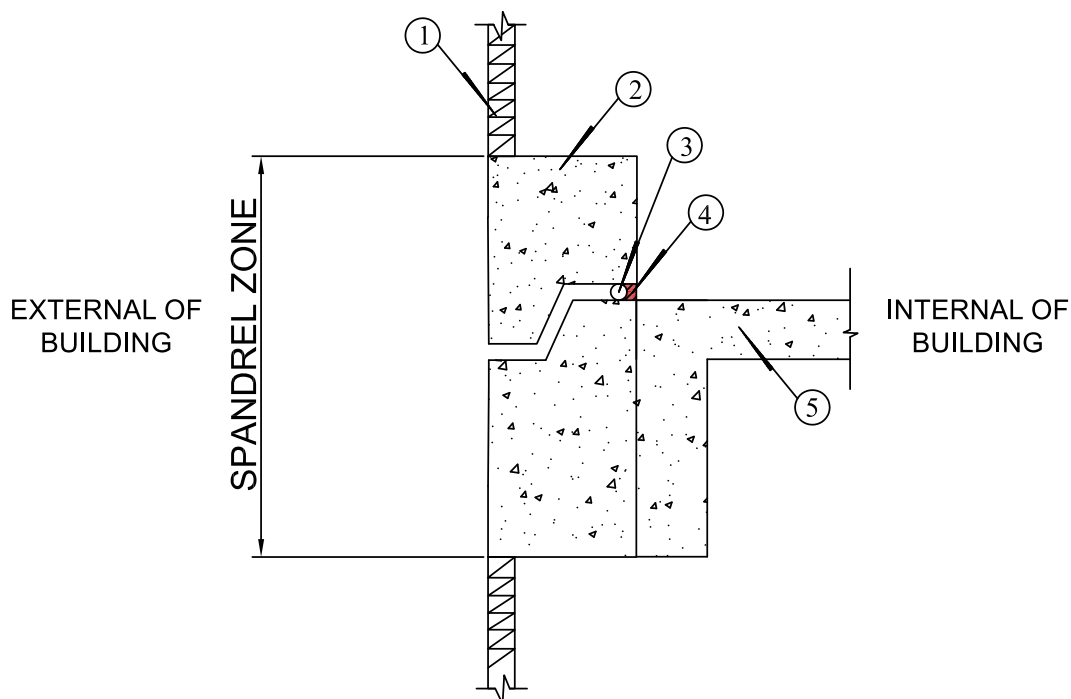
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# PRECAST CONCRETE FACADE JOINT DETAIL

FIRE RESISTANCE RATING: UP TO -/240/240  
 PRODUCT USED: CP 601S ELASTIC FIRESTOP SEALANT  
 REFERENCE: WFR No. 143653 & RED\_R15C39-1A

BS 476-20  
 EN 1366-4



1. BAY WINDOW
2. PRECAST CONCRETE FACADE (MIN. GRADE 45)
3. POLYETHYLENE (PE) BACKING ROD
4. MINIMUM 15mm DEPTH **CP601S ELASTIC FIRESTOP SEALANT**
5. SLAB

### NOTES

1. MAXIMUM JOINT WIDTH = 30mm.
2. THIS SYSTEM IS DESIGNED FOR BOTH INTERNAL AND EXTERNAL USE.
3. CAN ONLY BE APPLIED ON ONE SIDE OF THE WALL.
4. MOVEMENT CAPACITY OF 25%

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
 FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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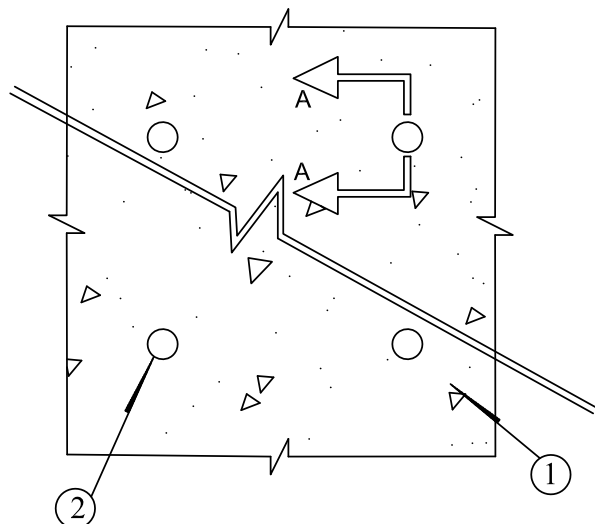
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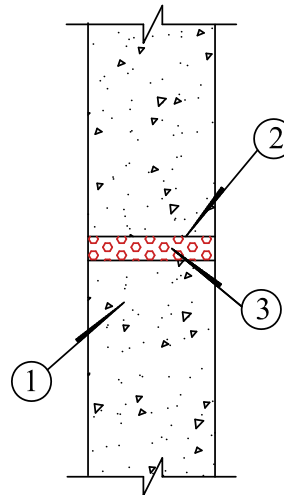
# WALL TIE HOLE APPLICATION DETAIL (1 OF 3)

FIRE RESISTANCE RATING: UP TO -/150/137  
 PRODUCT USED: CF 125-50 FOAM  
 REFERENCE: WFRS No. C125357

BS 476-20  
 EN 1366-4



ELEVATION



SECTION A-A

1. CONCRETE WALL ASSEMBLY (-/120/- F.R.R). SEE NOTES 3 BELOW.
2. WALL TIE HOLE.
3. MINIMUM 100mm DEPTH **CF 125-50 FOAM** FULLY FILLED ACROSS THE WALL TIE HOLE.

## NOTES :

1. MAXIMUM DIAMETER OF WALL TIE HOLE = 25mm.
2. PLASTIC TUBE INSIDE THE WALL TIE HOLE SHOULD BE REMOVED PRIOR TO THE APPLICATION OF FOAM.
3. FOR 120/120/120 F.R.R. MINIMUM WALL THICKNESS ACCORDING TO "CODE OF PRACTICE FOR FIRE RESISTING CONSTRUCTION 1996" (TABLE A):
  - WITH NOT LESS THAN 1% VERTICAL REINFORCEMENT: 100mm
  - WITH LESS THAN 1% VERTICAL REINFORCEMENT: 160mm

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
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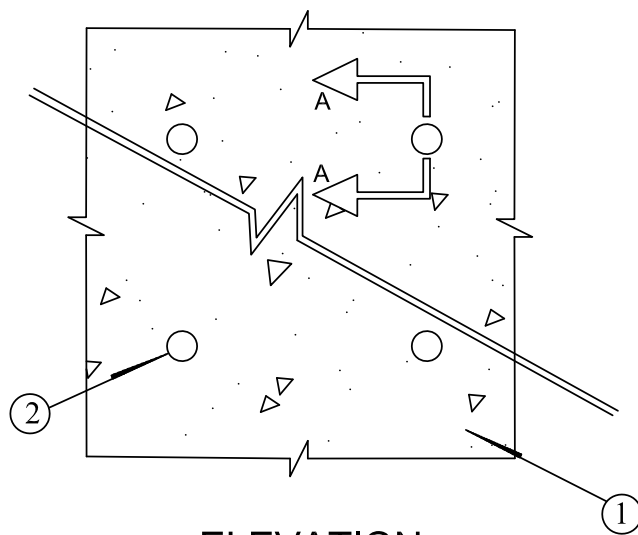
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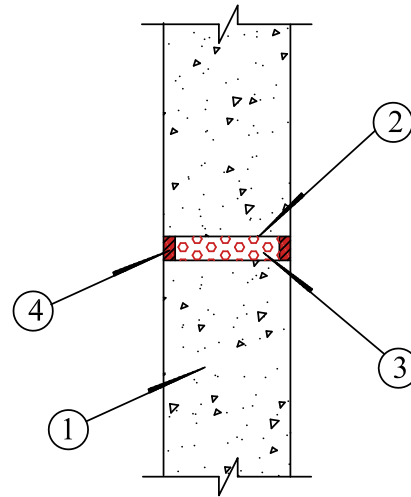
# WALL TIE HOLE APPLICATION DETAIL (2 OF 3)

FIRE RESISTANCE RATING: UP TO -/240/240  
PRODUCT USED: CP606 FIRESTOP SEALANT, CF 125-50 FOAM  
REFERENCE: WFRC No. 141323

BS 476-20  
EN 1366-4



ELEVATION



SECTION A-A

1. CONCRETE WALL ASSEMBLY (MIN. 150mm THICKNESS) (240/240/240 F.R.R). SEE NOTES 4 BELOW.
2. WALL TIE HOLE.
3. CF 125-50 FOAM FULLY FILLED ACROSS THE WALL TIE HOLE.
4. MINIMUM 15mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT**, FLUSH WITH THE CONCRETE WALL SURFACE.

## NOTES :

1. MAXIMUM DIAMETER OF WALL TIE HOLE = 30mm.
2. MINIMUM 15mm DEPTH CP606 FLEIBLE FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF THE WALL TIE HOLE.
3. PLASTIC TUBE INSIDE THE WALL TIE HOLE SHOULD BE REMOVED PRIOR TO THE APPLICATION OF FOAM.
4. FOR -/240/- F.R.R. MINIMUM WALL THICKNESS ACCORDING TO "CODE OF PRACTICE FOR FIRE RESISTING CONSTRUCTION 1996" (TABLE A):
  - WITH NOT LESS THAN 1% VERTICAL REINFORCEMENT: 180mm
  - WITH LESS THAN 1% VERTICAL REINFORCEMENT: 240mm

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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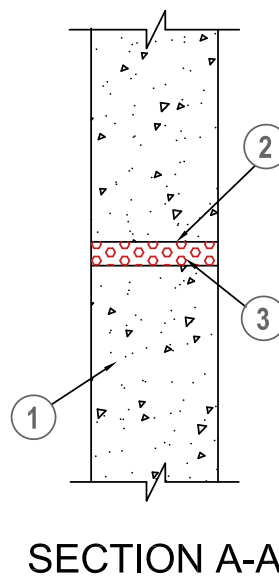
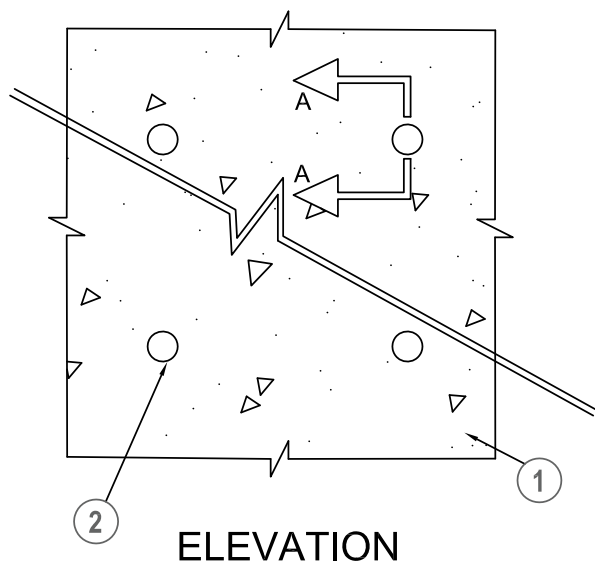
Sheet 2 OF 3  
Scale NOT TO SCALE  
Date JULY, 2018

Drawing No.  
AI-WTH02

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# WALL TIE HOLE APPLICATION DETAIL (3 OF 3)

FIRE RESISTANCE RATING : (NON FIRE-RATED)  
 PRODUCT USED : CF-F 750 FOAM



1. CONCRETE WALL ASSEMBLY (NOMINAL 100mm THICKNESS)
2. WALL TIE HOLE.
3. 100mm DEPTH **CF-F 750 FOAM** FULLY FILLED ACROSS THE WALL TIE HOLE.

## NOTES :

1. NOMINAL DIAMETER OF WALL TIE HOLE = 25 - 30mm.
2. WALL THICKNESS AND DIAMETER OF WALL TIE HOLE VARIES DEPENDS ON PROJECT.
3. THIS IS A NON FIRE-RATED DETAIL. FOR FIRE-RATED WALL TIE HOLE SEALING, PLEASE REFER TO AI-WTH01 & AI-WTH02 PLASTIC TUBE INSIDE THE WALL TIE HOLE SHOULD BE REMOVED PRIOR TO THE APPLICATION OF FOAM.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
 FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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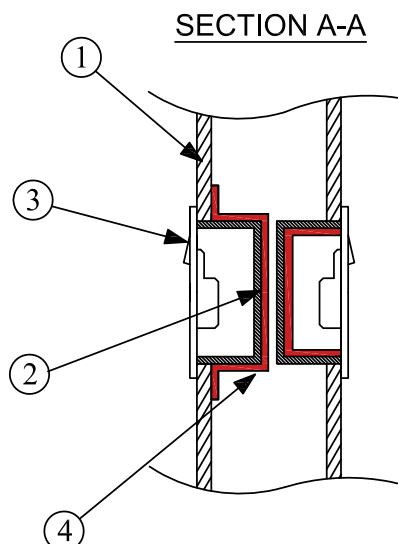
Drawing No.  
 AI-WTH03

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# ELECTRICAL SWITCH / SOCKET BOX DETAIL (1 OF 2)

FIRE RESISTANCE RATING: UP TO -/240/240  
PRODUCT USED: CP617 INTUMESCENT ACOUSTIC PUTTY PAD  
REFERENCE: WF No. 167801 (ISSUE 4), R18G14-2A

EN 1364-1



1. GYPSUM BOARD OR DRYWALL ASSEMBLY.
2. SINGLE OR MULTIPLE OF SWITCH BOX / SOCKET BOX (PLASTIC OR METALLIC).
3. SWITCH / SOCKET FRONT COVER.
4. MINIMUM 3mm **CP617 INTUMESCENT ACOUSTIC PUTTY PAD** TO BE INSTALLED TO COMPLETELY COVER THE EXTERIOR SURFACES OF THE OUTLET BOX AND OVERLAPPING SLIGHTLY TO THE INNER SURFACE OF THE DRYWALL

## NOTES :

1. MINIMUM 5mm OVERLAPPING WIDTH FOR CONNECTIONS BETWEEN TWO SEPERATE **CP617 PUTTY PADS**. (IF ANY)
2. RESHAPE **CP617 PUTTY PAD** TO APPROXIMATELY FIT AROUND CONDUIT OR CABLES.
3. CONFIGURATION OF OUTLET BOXES CAN BE: BACK-TO-BACK (ON BOTH SIDES OF THE DRYWALL), STAGGERED OR TO ONE FACE OF THE WALL ONLY.
4. THE LOCATION OF THE OUTLET BOXES CAN BE AT ANY HEIGHT BETWEEN FLOOR AND CEILING LEVEL WITHIN THE WALL CONSTRUCTION.
5. FOR INSTALLATION OF **CP617 PUTTY PAD** PRIOR TO THE FRONT PANEL, LEAVE A BUILT UP LAP ALONG THE EDGE OF OUTLET BOX THAT WILL CREATE A SEAL WHEN THE GYPSUM BOARD IS INSTALLED.
6. FIRE-RATING OF THE SYSTEM IS ONLY AS GOOD AS PERFORMANCE OF DRYWALL ASSEMBLY UNDER FIRE CONDITIONS.
7. ACOUSTIC INSULATION UP TO 64dB - TEST REPORT AVAILABLE UPON REQUEST.
8. FOR BACK TO BACK CASE, MIN. SEPARATION BETWEEN **CP617 PUTTY PAD** = 0mm

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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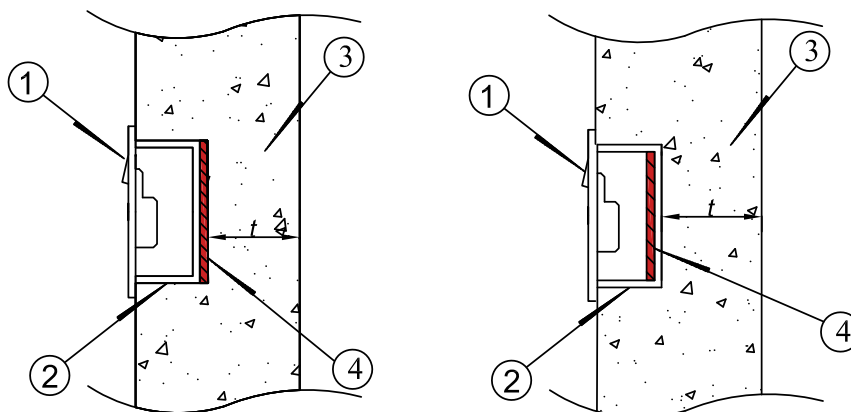
Drawing No.  
AI-SKB01

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## ELECTRICAL SWITCH / SOCKET BOX DETAIL (2 OF 2)

FIRE RATED PERIOD: UP TO -/66/66  
 PRODUCT USED: CP617 INTUMESCENT ACOUSTIC PUTTY PAD  
 REFERENCE: RED\_No. R13H16\_T

BS 476-20



1. SWITCH / SOCKET FRONT COVER
2. SINGLE OR MULTIPLE OR SWITCH BOX / SOCKET BOX
3. BLOCK WALL / CONCRETE WALL
4. **CP617 INTUMESCENT ACOUSTIC PUTTY PAD**

COP FS 2011 (TABLE E2)

CONSTRUCTION AND MATERIALS	MINIMUM THICKNESS IN MM (EXCLUDING PLASTER) FOR FRR OF		
	240 mins	120 mins	60 mins
t- REINFORCED CONCRETE: CONTAINING NOT LESS THAN 1 PERCENT OF VERTICAL REINFORCEMENT	180	100	75

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
 FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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Drawing No.  
 AI-SKB02

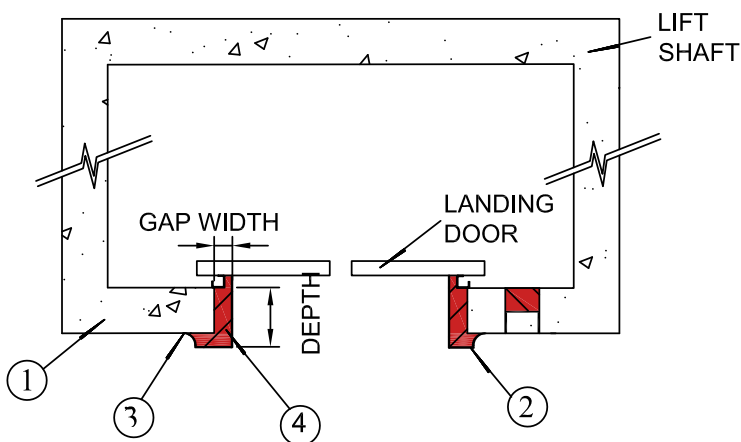
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# LIFT DOOR FRAME/SWITCH CONTROL APPLICATION DETAIL

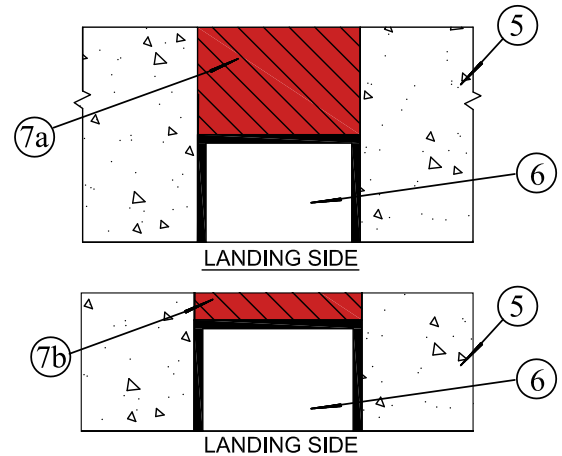
FIRE RESISTANCE RATING: UP TO -/120/120  
 PRODUCT USED: CP636 FIRESTOP MORTAR  
 CP670 FIRE SAFETY COATING  
 REFERENCE: WFRC No. 149581 & WFRC No. C128593

BS 476-20 & 22  
 EN1366-3

## LIFT DOOR FRAME



## SWITCH CONTROL BOX / DISPLAY PANEL



### LIFT DOOR FRAME

1. CONCRETE WALL ASSEMBLY (120/120/120 F.R.R.)  
 - CONCRETE WALL OR FIRE-RATED BLOCKWALL
2. LIFT DOOR STEEL ARCHITRAVE/TRIM.
3. JOINT SEALANT (SEE NOTE 2).
4. MINIMUM 40mm DEPTH **CP636 FIRESTOP MORTAR** TO BE FULLY FILLED INTO THE GAP BETWEEN THE CONCRETE WALL AND THE STEEL ARCHITRAVE/TRIM. (SEE NOTES 1)

### NOTES :

1. MAXIMUM JOINT WIDTH = 200 mm.
2. **CP606 FLEXIBLE FIRESTOP SEALANT** IS RECOMMENDED AS THE JOINT SEALANT.

### SWITCH CONTROL BOX / DISPLAY PANEL

5. CONCRETE WALL ASSEMBLY (120/120/120 F.R.R.)  
 - CONCRETE WALL OR FIRE RATED BLOCKWALL
6. SWITCH CONTROL BOX / DISPLAY PANEL INSTALLED IN THE RESERVED OPENING(S) AND LOCATED ON THE LANDING SIDE OF THE LIFT SHAFT WALL
7. (a) **CP636 FIRESTOP MORTAR**. FOR F.R.R. -/120/120, MINIMUM 100mm DEPTH TO BE FULLY FILLED AT THE BACK OF THE SWITCH CONTROL BOX / DISPLAY PANEL  
 (b) **CP617 FIRESTOP PUTTY PAD** TO BE APPLIED EITHER AT THE BACKSIDE OR FRONT SIDE OF SWITCH CONTROL BOX/ DISPLAY PANEL. FOR ANNUAL SPACE  $\leq 30$ MM, FILL THE VOID BY CP 606 FLEXIBLE FIRESTOP SEALANT. OTHERWISE, VOIDS TO BE FILLED BY FIRESTOP MORTAR

### NOTES :

1. NOMINAL OPENING SIZE = 150 mm x 250mm. (OR EQUIVALENT AREA)

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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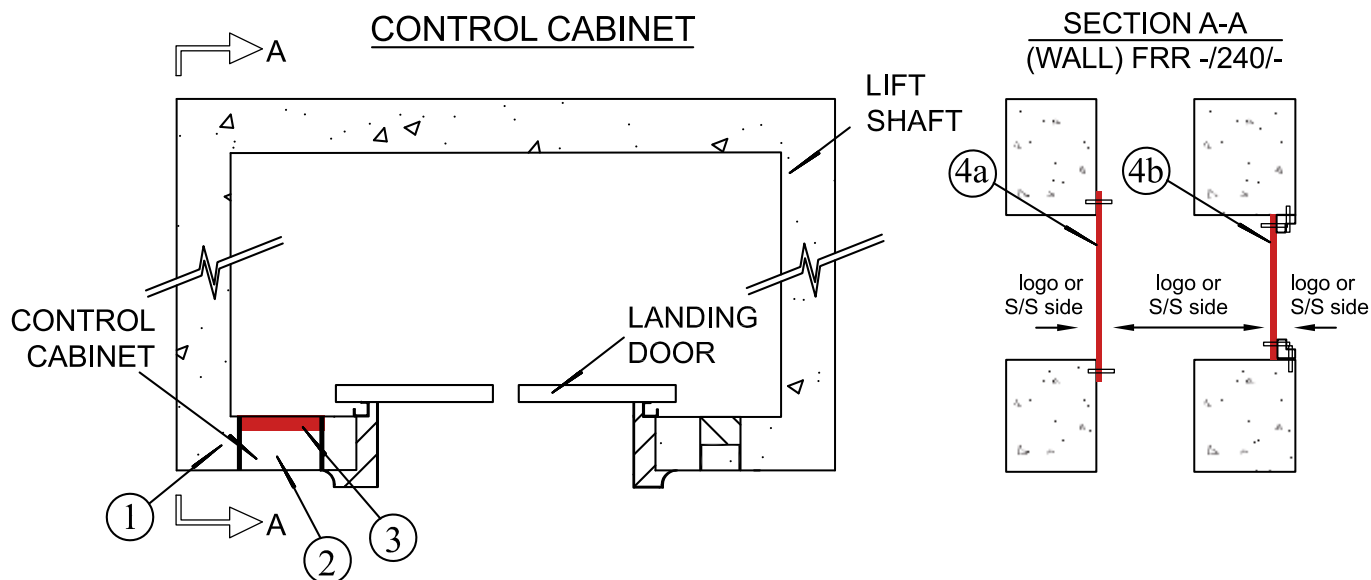
# LIFT CONTROL CABINET APPLICATION DETAIL

FIRE RESISTANCE RATING: UP TO -/240/-

PRODUCT USED: CFS-COS FIRESTOP COMPOSITE SHEET

BS 476-20

REFERENCE: R18G14-2A



## LIFT CONTROL CABINET

1. CONCRETE WALL ASSEMBLY (120/120/120 F.R.R)  
- CONCRETE WALL OR FIRE-RATED BLOCKWALL
2. LIFT CONTROL CABINET
3. **CFS-COS FIRESTOP COMPOSITE SHEET** WITH EITHER LOGO OR S/S SIDE FACING THE FIRE SIDE, TO BE INSTALLED AT THE BACK OF CONTROL (SEE APPLICATION DETAILS)
4. CABINET WITH EITHER INSTALLATION METHOD AS INDICATED IN 4a and 4b

### Application Details:

	Layer(s) of CFS-COS	FRR
Wall Case	1	-/240/-

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT. FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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Drawing No.  
AI-LDF02

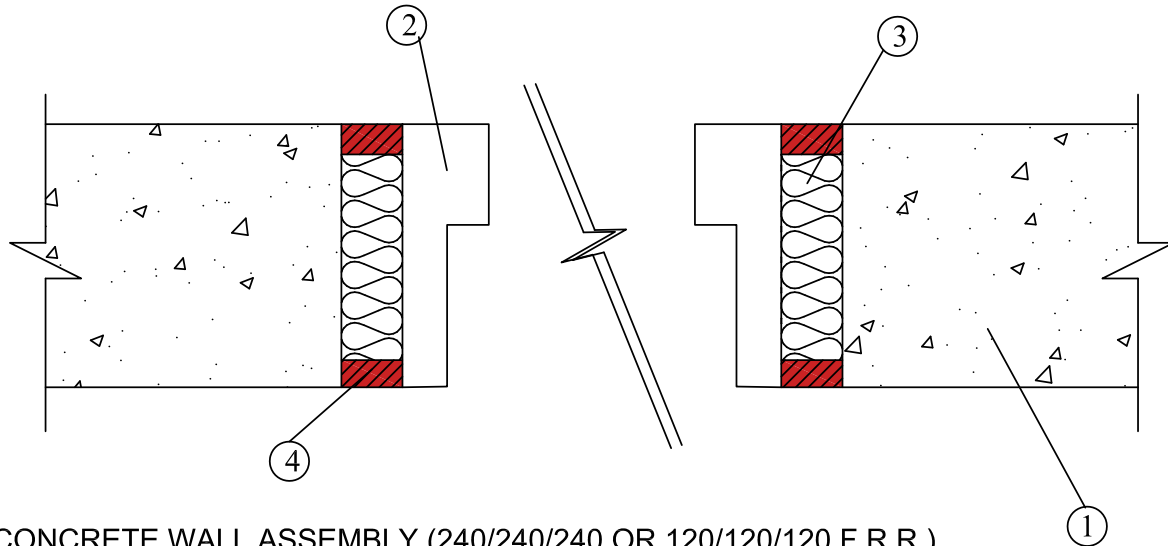
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# TIMBER / STEEL DOOR FRAME DETAIL

FIRE RESISTANCE RATING: UP TO -/240/120  
 PRODUCT USED: CP606 FLEXIBLE FIRESTOP SEALANT  
 REFERENCE: WFRC No. C114417 & WFRC No. C114599  
 WFRC No. 141323 & R16E13-1A

BS 476-22  
 EN 1634-1



1. CONCRETE WALL ASSEMBLY (240/240/240 OR 120/120/120 F.R.R.)
2. TIMBER / STEEL DOOR FRAME (SEE NOTES 2).
3. BACKING MATERIAL INSIDE THE JOINT CAN EITHER BE:
  - A) POLYETHYLENE (PE) BACKING ROD FIT THROUGH THE WIDTH OF THE JOINT
  - B) MINERAL WOOL (MIN 140kg/m<sup>3</sup> DENSITY & 65mm)
  - C) **CF-F 750 FILLING FOAM**
4. MIN. 15mm DEPTH **CP606 FLEXIBLE FIRESTOP SEALANT**, FLUSH WITH BOTH SIDES OF THE WALL SURFACE.

## NOTES:

1. MAXIMUM JOINT WIDTH = 30mm.
2. FIRE PERFORMANCE OF THE DOOR AND DOOR FRAME TO BE CONSIDERED SEPARATELY BY CONTRACTOR.

ALL CONFIGURATIONS SHOWN MUST BE SUBMITTED AND APPROVED BY THE SPECIFYING ARCHITECTS OR ENGINEERS FOR THE PROJECT.  
 FOR ANY DETAILS BEYOND THE SCOPE AS ABOVE, PLEASE CONTACT HILTI ENGINEERING SERVICE FOR ADVICES.



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# PRODUCT INFORMATION

Leading-edge Technology.  
Outstanding Service.



## Flexible firestop sealant CP 606



### APPLICATIONS

- Sealing rigid or low-movement ceiling/wall joints, widths from 6 to 30 mm
- Sealing metal pipe penetrations
- For use in various base materials such as masonry, concrete, drywall and metal

### ADVANTAGES

- Paintable
- Easy to clean up with water
- Smoke, fume and water resistant



Smoke



Water Tight



Acoustic



Siesmic



Low VOC



Mould & Mildew

### Technical data

<b>Chemical basis</b>	Water-based acrylic dispersion
<b>Base materials</b>	Concrete, Masonry, Drywall, Steel
<b>Movement<sup>1)</sup></b>	±12.5% (ISO 11600)
<b>Approx. tack-free time (ventilated at 77°F, 80% rel. humidity)</b>	20 min
<b>Approx. curing time<sup>2)</sup></b>	3 mm/3 days
<b>Average volume shrinkage</b>	22.2%
<b>Application temperature range</b>	5 - 40 °C
<b>Temperature resistance range</b>	-30 - 80 °C
<b>Storage and transportation temperature range</b>	5 - 25 °C
<b>Shelf life<sup>3)</sup></b>	24 Months

<sup>1)</sup> according to HTC 1250

<sup>2)</sup> at 75°F/24°C, 50% relative humidity

<sup>3)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



### Consumption Guide

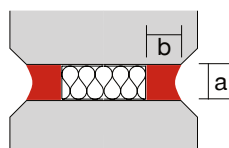
Cartridge volume = 310 ml (CP 606)

a = Joint width in mm

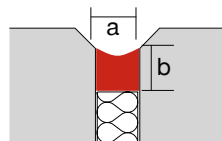
b = Sealant depth in mm

Linear metre per cartridge =  $\frac{\text{Cartridge volume in ml}}{a \times b}$

e.g. a floor 20 mm wide with product depth of 10 mm; with 310 ml cartridge:  
Therefore linear metres per cartridge =  $310 / (20 \times 10) = 1.55$  metre per cartridge for one side of the floor



Wall

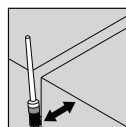


Floor

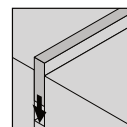
Joint width (mm)	0-15	16-20	21-30
Sealant depth (mm)	6	10	15

### Application Procedure

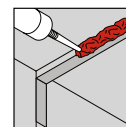
#### Joint installation



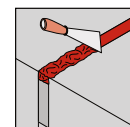
1. Clean opening



2. Insert backing material

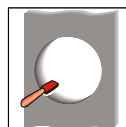


3. Apply CP 606



4. Smooth CP 606

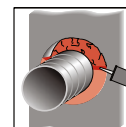
#### Pipe installation (non-combustible pipes only)



1. Clean opening



2. Insert backing material



3. Apply CP 606



4. Smooth CP 606

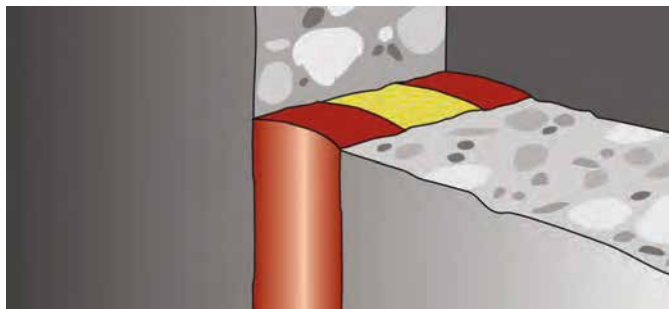
Order Now



Ordering designation	Colour	Volume per unit	Packaging	Sales pack quantity	Item number
CP 606 310ml INT grey	Grey	310 ml	Cartridge	1 pc	209630
CP 606 580ml INT grey	Grey	580 ml	Foil pack	1 pc	209633
CP 606 310ml white	White	310 ml	Cartridge	1 pc	209625
CP 606 580ml white	White	580 ml	Foil pack	1 pc	209632

Please visit Hilti website for the latest item numbers and related products

## Elastomeric silicone sealant CP 601S



### APPLICATIONS

- Expansion or stretched connection joints in fire compartment walls and floors
- Uninsulated metal pipes in penetrations through fire compartment walls and floors
- Acoustic insulation of pipes
- Suitable for outdoor use
- For use on concrete and masonry (indoors/outdoors)

### ADVANTAGES

- Weather and UV-resistant
- Excellent movement capability
- Smoke, gas and water-resistant



Technical data	
<b>Chemical basis</b>	Neutral elastic silicone
<b>Base materials</b>	Masonry, Metal, Concrete, Glass
<b>Movement<sup>1)</sup></b>	± 25% (ISO 11600)
<b>Approx. tack-free time (ventilated at 77°F, 80% rel. humidity)</b>	15 min
<b>Approx. curing time<sup>2)</sup></b>	2 mm/3 days
<b>Average volume shrinkage</b>	5 %
<b>Application temperature range</b>	5 - 40 °C
<b>Temperature resistance range</b>	-40 - 160 °C
<b>Storage and transportation temperature range</b>	5 - 25 °C
<b>Shelf life<sup>3)</sup></b>	12 Months

<sup>1)</sup> according to HTC 1250

<sup>2)</sup> at 75°F/24°C, 50% relative humidity

<sup>3)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



### Consumption Guide

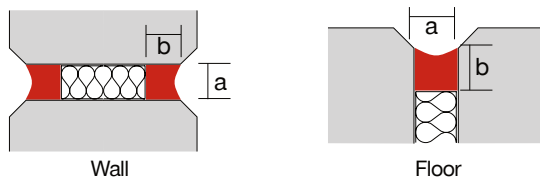
Cartridge volume = 310 ml (CP 601S)

a = Joint width in mm

b = Sealant depth in mm

Linear metre per cartridge =  $\frac{\text{Cartridge volume in ml}}{a \times b}$

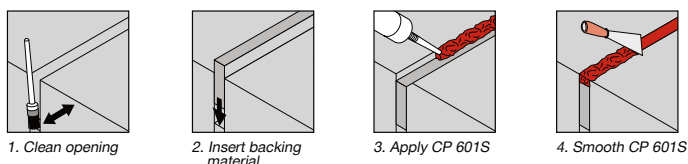
e.g. a floor 50 mm wide with product depth of 15 mm; with 310 ml cartridge:  
Therefore linear metres per cartridge =  $310 / (50 \times 15) = 0.41$  metre per cartridge  
for one side of the floor



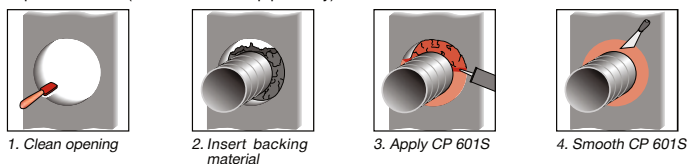
Joint width (mm)	0-15	16-100
Sealant depth (mm)	6	15

### Application Procedure

Joint installation



Pipe installation (non-combustible pipes only)



Order Now



Ordering designation	Colour	Volume per unit	Packaging	Sales pack quantity	Item number
CP 601S 310ML grey	Grey	310 ml	Cartridge	1 pc	310635
CP 601S 600ML grey	Grey	600 ml	Foil pack	1 pc	312111 <sup>1)</sup>
CP 601S 310ML white	White	310 ml	Cartridge	1 pc	310633
CP 601S 600ML white	White	600 ml	Foil pack	1 pc	310637 <sup>1)</sup>

<sup>1)</sup> This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products



## High performance intumescent firestop sealant FS-ONE MAX



### APPLICATIONS

- For effectively sealing most common through penetrations in a variety of base materials
- Copper and EMT pipes
- Insulated steel and copper pipes
- Single cables and cable bundles
- Closed or vented plastic pipes
- HVAC penetrations

### ADVANTAGES

- One product for most firestop applications
- Cost-effective solution
- Easy to work with and fast cleanup

### Technical data

<b>Chemical basis</b>	Water-based acrylic dispersion
<b>Base materials</b>	Concrete, Concrete block, Metal, Wood, Gypsum
<b>Expansion ratio (unrestricted, up to)</b>	1:5
<b>Approx. curing time<sup>1)</sup></b>	4 mm/3 days
<b>Average volume shrinkage</b>	19.4 %
<b>Application temperature range</b>	5 - 40 °C
<b>Temperature resistance range</b>	-20 - 100 °C
<b>Storage and transportation temperature range</b>	5 - 25 °C
<b>Shelf life<sup>2)</sup></b>	18 Months

<sup>1)</sup> at 75°F/24°C, 50% relative humidity

<sup>2)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



### Consumption Guide

Cartridge size = 310 ml (FS-ONE)

Sealing volume in wall application (installation on both sides)  $V_s = \frac{\pi}{4} \times (a^2 - c^2) \times 2b$

Sealing volume in floor application (installation on one side only)  $V_s = \frac{\pi}{4} \times (a^2 - c^2) \times b$

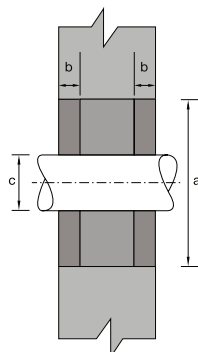
a = hole diameter in cm

b = installation depth in cm (see approvals)

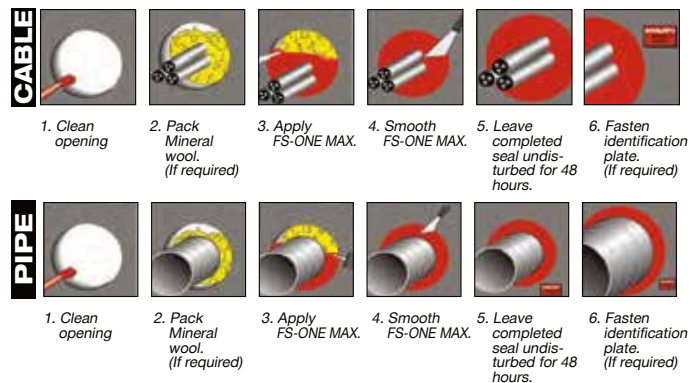
c = outside diameter of pipe or bunched cable diameter in cm

No. of cartridges needed,

$$n = \frac{V_s}{\text{cartridge volume in ml}}$$



### Application Procedure



Order Now



Ordering designation	Colour	Volume per unit	Packaging	Sales pack quantity	Item number
FS-ONE MAX 10.1OZ CART	Red	300 ml	Cartridge	1 pc	2101534

Please visit Hilti website for the latest item numbers and related products

## Firestop intumescent sealant CP 611A



### APPLICATIONS

- Single cables and cable bundles
- Plastic pipes up to 50 mm (2") diameter without additional collar
- Sealing penetrations previously sealed with firestop mortar, after installing additional cables
- Small openings

### ADVANTAGES

- Paintable
- Fast, easy application and cleaning up
- Particularly suitable for laying new cables
- Silicone-free
- Easy to clean with water



Smoke



Water Tight



Acoustic



Seismic



Low VOC



Mould & Mildew

### Technical data

<b>Chemical basis</b>	Water-based acrylic dispersion
<b>Base materials</b>	Concrete, Concrete block, Metal, Wood, Gypsum
<b>Movement<sup>1)</sup></b>	No
<b>Expansion ratio (unrestricted, up to)</b>	1:10
<b>Approx. tack-free time (ventilated at 77°F, 80% rel. humidity)</b>	15 min
<b>Approx. curing time<sup>2)</sup></b>	3 mm/3 days
<b>Application temperature range</b>	5 - 40 °C
<b>Temperature resistance range</b>	-40 - 100 °C
<b>Storage and transportation temperature range</b>	5 - 25 °C
<b>Shelf life<sup>3)</sup></b>	12 Months

<sup>1)</sup> according to HTC 1250

<sup>2)</sup> at 75°F/24°C, 50% relative humidity

<sup>3)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



### Consumption Guide

Cartridge size = 310 ml (CP 611A)

Sealing volume in wall application  
(installation on both sides)

$$V_s = \frac{\pi}{4} \times (a^2 - c^2) \times 2b$$

Sealing volume in floor application  
(installation on one side only)

$$V_s = \frac{\pi}{4} \times (a^2 - c^2) \times b$$

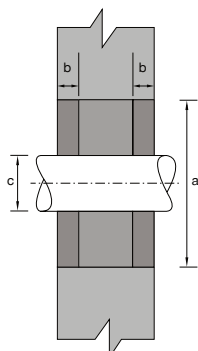
a = hole diameter in cm

b = installation depth in cm (see approvals)

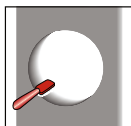
c = outside diameter of pipe or bunched cable diameter in cm

No. of cartridges needed,

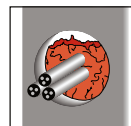
$$n = \frac{V_s}{310 \text{ (ml)}}$$



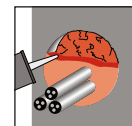
### Application Procedure



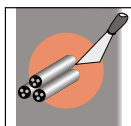
1. Clean opening



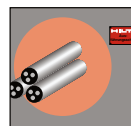
2. Depending on required integrity, pack in mineral wool or foam



3. Apply CP 611A



4. Smooth CP 611A



5. Fasten installation plate in place (if required)

Order Now



Ordering designation	Colour	Volume per unit	Packaging	Sales pack quantity	Item number
CP 611A INT	Anthracite	310 ml	Cartridge	1 pc	220351

Please visit Hilti website for the latest item numbers and related products



## Firestop joint spray CFS-SP WB



### APPLICATIONS

- Sealing openings between the top of walls and concrete or metal floors / ceilings
- Sealing building perimeter gaps between floor slabs or vertical wall and exterior curtain wall facades

### ADVANTAGES

- Water-based, low VOC, contains no halogens
- High degree of elasticity - movement capability of up to 50%
- Excellent sprayability and low slump characteristics
- Fast, efficient sealing of wide, difficult-to-access joints



Smoke



Water Tight



Acoustic



Seismic



Low VOC



Mould & Mildew

### Technical data

<b>Chemical basis</b>	Water-based acrylic dispersion
<b>Base materials</b>	Concrete, Masonry, Gypsum, Steel, Aluminium, Glass
<b>Movement<sup>1)</sup></b>	Up to 50 %
<b>Approx. tack-free time (ventilated at 77°F, 80% rel. humidity)</b>	180 min
<b>Approx. curing time<sup>2)</sup></b>	3 mm/day
<b>Average volume shrinkage</b>	0.511
<b>Application temperature range</b>	4 - 40 °C
<b>Temperature resistance range</b>	-40 - 80 °C
<b>Storage and transportation temperature range</b>	4 - 25 °C
<b>Shelf life<sup>3)</sup></b>	12 Months

<sup>1)</sup> according to HTC 1250

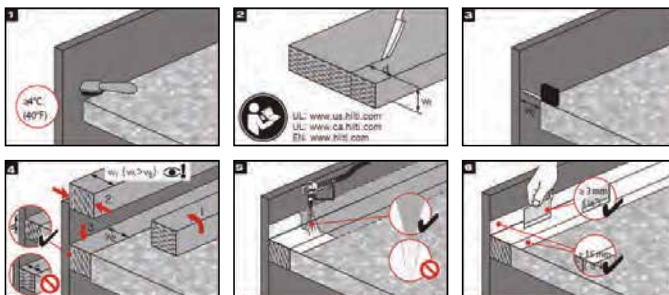
<sup>2)</sup> at 75°F/24°C, 50% relative humidity

<sup>3)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture

### Consumption Guide (based on 3mm wet thickness)

Joint width (mm)	With overlap 15 mm either side (mm)	Meters per 19 litres pail (meters)
25	55	110
50	80	75
100	130	45
150	180	35
200	230	25

### Application Procedure



Ordering designation	Colour	Volume per unit	Packaging	Sales pack quantity	Item number
CFS-SP WB red	Red	19000 ml	Bucket	1 pc	430815

Please visit Hilti website for the latest item numbers and related products



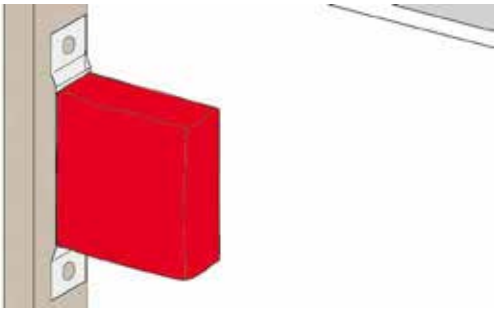
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# Firestop putty pad CP 617



## APPLICATIONS

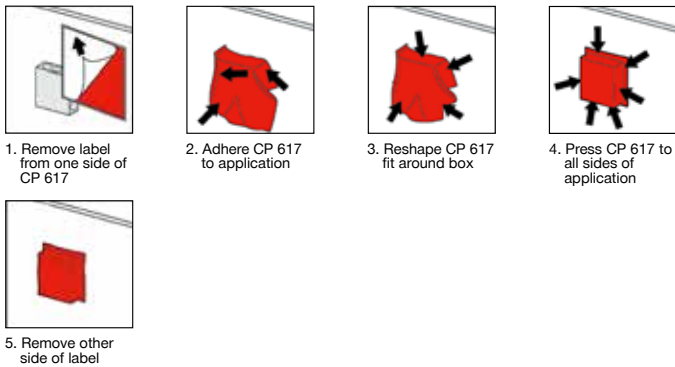
- Can be used for commercial and residential applications
- Accoustically rated drywall - sound transmission classification 59 according to ASTM E90-97 (based on specific construction)
- General gypsum wall assemblies with wood or metal studs
- Socket Box, lift call button, lift indicator panel

## ADVANTAGES

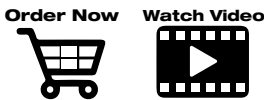
- Excellent adhesion to gypsum, metal and plastic
- No oil migration, putty remains flexible over time
- Pad can be moulded by hand without leaving residue on the hands
- Quick and simple to install
- Not electrically conductive



## Application Procedure



Technical data	
Colour	Red
Electrical resistance data	Non-conductive
Acoustic insulation	Yes
Intumescent	Yes
Application temperature range	0 - 40 °C
Temperature resistance range	-20 - 60 °C
Storage and transportation	-5 - 40 °C
Acoustic index (Tested to DIN EN20140)	64 dB



Ordering designation	Package contents	Sales pack quantity	Item number
CP 617 6"x7"	1x Firestop putty pad CP 617 6"x7"	20 pc	309760
CP 617 XL 9"x9"	1x Firestop putty pad CP XL 617 9"x9"	20 pc	373387

Please visit Hilti website for the latest item numbers and related products

## Firestop cable disc CFS-D 1" **NEW**



### APPLICATIONS

- Pre-formed firestopping solution for single cables and small cable bundles in openings up to max. 25 mm
- All cable types currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunications, emergency and optical fibre cables)
- For use on drywall, masonry and concrete
- Suitable for plastic and metal conduits
- Covers regular and irregular openings (including blank openings)

### ADVANTAGES

- Simple – sealant-free installation
- No backfilling material required
- Fast – installed in 10 seconds
- Powerful – broad application range
- Surface-mounted solution
- Minimises waste



Smoke



Mould & Mildew



Acoustic



Technical data	
Colour	Red
Base materials	Concrete, Masonry, Drywall
Application temperature range	0 - 40 °C
Acoustics performance	Test report available
Approx. density	1600 kg/m³
Mold and mildew performance	Class 0 (EN ISO 846)
Intumescent	No
Approvals	ETA-16/0050
Can be painted	No
Electrical resistance data	Non-conductive
European VOC	Available
Packaging	Box



**Order Now**



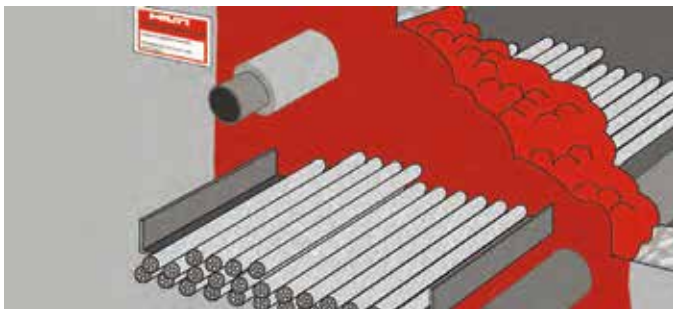
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Ordering designation	Package contents	Sales pack quantity	Item number
CFS-D 1"	1x Firestop cable disc CFS-D 1"	32 pc	2116246

Please visit Hilti website for the latest item numbers and related products

## Firestop foam CP 620



### APPLICATIONS

- Concrete, drywall and masonry
- Multiple and mixed penetrations
- Single cables, cable bundles and cable trays
- Metal pipes
- Suitable for irregular and difficult-to-reach openings

### ADVANTAGES

- Innovative firestopping solution for complex and difficult-to-reach applications
- Virtually impervious to smoke
- Excellent water and vapour resistance
- Single-sided installation possible
- Easy to use in openings where access is poor



Smoke



Water  
Tight



Acoustic



Siesmic



Low VOC



Mould &  
Mildew

### Consumption Guide

Foam installation thickness: 145  
No. of CP 620 cartridges

size of opening (mm x mm)	Cable loading (as % of opening size)			
	0%	10%	30%	60%
50 x 100	1	1	1	1
100 x 100	1	1	1	1
100 x 150	2	2	1	1
100 x 200	2	2	2	1
100 x 250	3	2	2	1
100 x 300	3	3	2	1
200 x 200	4	3	3	2
200 x 225	4	4	3	2
200 x 250	5	4	3	2
200 x 300	5	5	4	2
200 x 350	6	6	4	3
200 x 400	7	6	5	3
300 x 300	8	7	6	3
300 x 330	8	8	6	4
300 x 400	10	9	7	4
400 x 400	13	12	10	6
400 x 500	17	15	12	7

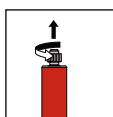
### Technical data

<b>Chemical basis</b>	Two-component polyurethane foam
<b>Colour</b>	Red
<b>Base materials</b>	Concrete, Masonry, Drywall
<b>Volume per unit</b>	300 ml
<b>Foam yield (up to)</b>	1.9 l
<b>Approx. cut time (at 23°C / 50% rel. humidity)</b>	2 min
<b>Application temperature range</b>	0 - 40 °C
<b>Temperature resistance range</b>	-30 - 100 °C
<b>Storage and transportation temperature range</b>	5 - 25 °C
<b>Shelf life<sup>1)</sup></b>	9 months

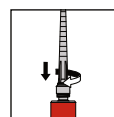
<sup>1)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



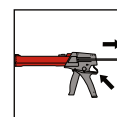
### Application Procedure



1. Hold the cartridge with the nozzle pointing upwards and unscrew the cap. Do not point towards people.



2. Fit the mixer and screw securely.



3. Release the dispenser and pull back the piston rod.



4. Insert the cartridge in the dispenser.



5. Discard the unevenly mixed initial quantity



6. Apply CP 620, building up a seal by working from the back towards the front.



7. Attach the installation plate (if required).

Order Now



Ordering designation	Volume per unit	Package contents	Sales pack quantity	Item number
CP 620	300 ml	1x Firestop foam CP 620 EN/DE/FR/IT/NL/TH	1 pc	2025083

Please visit Hilti website for the latest item numbers and related products



## Firestop foam CFS-F FX **NEW**



### APPLICATIONS

- Mechanical: Non-combustible (metal) pipes with mineral wool/non-flammable insulation, small combustible (plastic) pipes  
No smoke/gastight additional sealing and no backing material required
- Electrical: Single cables, cable bundles, cable tray and trunking

### ADVANTAGES

- 3-phase technology with optimum application characteristics (easily-shapeable foam)
- Easily applied using a Hilti cordless electric dispenser
- Neat and tidy application
- Very quick and easy to install and provides a reliable firestop seal with only one product
- Maintenance and retrofitting of cables is very easy
- Reliable sound insulation properties, due to the flexible foam structure



Smoke



Acoustic



Siesmic



Mould & Mildew

### Consumption Guide

Wall thickness: 150

Surface area of seal (m <sup>2</sup> )	Opening diameter of seal (mm)	Opening size of seal (mm x mm)	Volume (litre), no cable load
0.01	ø 120	100 x 100	1.50
0.02	ø 160	100 x 200	3.00
0.03	ø 200	100 x 300	4.50
0.04	ø 220	200 x 200	6.00
0.05	ø 250	200 x 250	7.50
0.06	ø 280	200 x 300	9.00
0.07	ø 300	200 x 350	10.50
0.08	ø 320	200 x 400	12.00
0.09	ø 340	300 x 300	13.50
0.1	ø 350	300 x 330	14.85
0.16	--	400 x 400	24.00

No. of CFS-F FX foil packs  
Wall thickness: 150

Surface area of seal (m <sup>2</sup> )	Cable loading (as % of opening size)			
	0%	10%	30%	60%
0.01	<1	<1	<1	0.5
0.02	<2	<2	1.5	<1
0.03	<3	<2.5	<2	<1.5
0.04	3.5	<3.5	2.5	1.5
0.05	<4.5	<4	3.0	<2
0.06	5.5	<5	<4	<2.5
0.07	6.0	<5.5	<4.5	<2.5
0.08	<7	<6.5	<5	<3
0.09	<8	<7	<5.5	<3.5
0.1	8.5	7.5	6.0	3.5
0.16	<13.5	<12.5	<9.5	<5.5

Ordering designation	Volume per unit	Package contents	Sales pack quantity	Item number
CFS-F FX	325 ml	1x Firestop foam CFS-F FX	1 pc	429802

Please visit Hilti website for the latest item numbers and related products

Technical data	
Chemical basis	Two-component polyurethane foam
Colour	Red
Base materials	Concrete, Masonry, Drywall
Volume per unit	325 ml
Foam yield (up to)	2.1 l
Approx. cut time (at 23°C / 50% rel. humidity)	10 min
Application temperature range	10 - 35 °C
Temperature resistance range	-30 - 60 °C
Storage and transportation temperature range	5 - 25 °C
Shelf life <sup>1)</sup>	9 Months

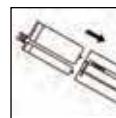
<sup>1)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



### Application Procedure



1. Clean the opening to be sealed



2. Slide the foil pack into the holder



3. Screw the mixing nozzle all the way onto the foil pack and tighten it securely



4. Insert the holder containing the foil pack into the dispenser



5. Discard the unevenly mixed initial quantity



6. Apply the firestop foam in the opening to be sealed



7. Shaped or smoothed by hand (if necessary) after 5mins (approx.) and can be cut after 10mins (approx.)

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## Firestop block CFS-BL

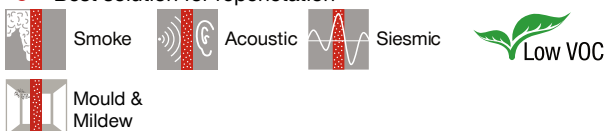


### APPLICATIONS

- Temporary or permanent sealing around cables, cable bundles and cable trays in wall and floor openings
- Cables, cable bundles and cable trays

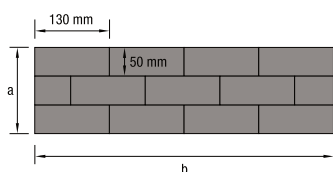
### ADVANTAGES

- Easy to install, no electric tools required
- Economical installation as the block is pre-cured and ready-to-use
- Painting of cables with firestop coating is not required
- Installation of cables with zero separation to the edge of the penetration is possible
- Best solution for repenetration



### Consumption Guide

Brick dimension 200 x 130 x 50 mm  
a = opening width in cm  
b = opening length in cm



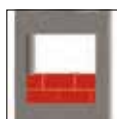
Opening with 30% cross sectional area of services multiply the results by 0.7  
Opening with 50% cross sectional area of services, multiply the results by 0.5

Header orientation e.g. 1 metre by 1 metre opening  
Blank opening =  $\frac{a \times b}{65}$  Number of bricks required =  $\frac{100 \times 100}{65} = 154$  bricks

### Application Procedure



1. Clean opening



2a. Build up blocks



2b. Cut blocks to size for penetration in place



3. Build up blocks



4. Fill gaps with FS-ONE MAX3 / CP 611A

Technical data	
Chemical basis	PU
Dimensions (LxWxH)	200 x 130 x 50 mm
Expansion temperature (approx.)	200 °C
Expansion ratio (unrestricted, up to)	1:3
Reaction to fire class (EN 13501-1)	E
Application temperature range	5 - 40 °C
Colour	Red
Storage and transportation temperature range	-5 - 40 °C



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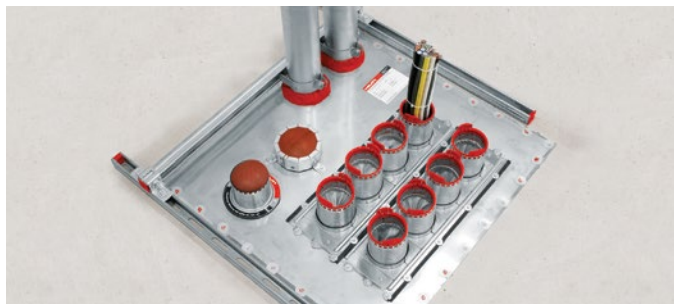


Ordering designation	Package contents	Sales pack quantity	Item number
CFS-BL	1x Firestop block CFS-BL	1 pc	2062863

Please visit Hilti website for the latest item numbers and related products



## Firestop composite sheet CFS-COS



### APPLICATIONS

- For use with large wall and floor fire-rated assemblies
- Compatible with Hilti Speed Sleeve and gangplate for floor gang applications
- Intumescent sheet with #304 stainless steel backing for firestopping large openings

### ADVANTAGES

- For use with fire-rated assemblies (up to 4 hrs)
- Compatible with Hilti sleeve devices for easy cable management
- Can be fastened using Hilti screw anchor, GX or BX tools – to increase installation efficiency and productivity
- Multi-board systems allow very large openings
- Non-magnetic #304 stainless steel construction ensures good weatherability and no inductive loss in cables
- Fast installation system requires fewer anchors

Technical data	
Application temperature range	-30 to 48°C
Temperature resistance range	-30 to 120°C
Expansion ratio (unrestricted, up to)	1:18
Storage and transportation temperature range	-30 to 48°C
Color	Silver
Dimensions (LxWxH)	910 x 910 x 3.8 mm
Intumescent	Yes

<sup>1)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



Ordering designation	Package contents	Sales pack quantity	Item number
Firestop Composite Sheet CFS-COS	1x CFS-COS Firestop Composite Sheet	4 pc	2135884

Please visit Hilti website for the latest item numbers and related products

## Firestop mortar CP 636



### APPLICATIONS

- Permanent firestopping of cables, cable trays, and non-combustible pipes in medium to large wall and floor openings
- Single, multiple and mixed penetrations
- Medium to large multiple penetrations in concrete and masonry in combination with other products
- Lift door frame

### ADVANTAGES

- Excellent application characteristics

### Technical data

<b>Base materials</b>	Concrete, Masonry
<b>Approx. mix ratio</b>	3:1 (mortar to water by weight)
<b>Working time (approx.)</b>	45 min
<b>Cured density - min.</b>	700 kg/m³
<b>Max. compressive strength after 28 days</b>	2.9 N/mm²
<b>Application temperature range</b>	5 - 80 °C
<b>Temperature resistance range</b>	-10 - 80 °C
<b>Storage and transportation temperature range</b>	5 - 30 °C
<b>Shelf life<sup>1)</sup></b>	12 Months
<b>Colour</b>	Grey

<sup>1)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



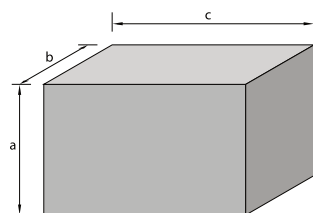
### Consumption Guide

20 kg bags yield 22.2 litres

a = opening depth in cm

b = opening length in cm

c = opening width in cm



### Blank Opening

$$\text{Number of bags required} = \frac{a \times b \times c}{22,000}$$

e.g. 100 mm thick floor with 1 metre x 1 metre opening:

$$\text{Therefore number of bags required} = \frac{10 \times 100 \times 100}{22,000} = 5 \text{ bags}$$



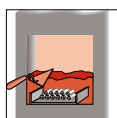
### Application Procedure



1. Clean opening, moisten surfaces



2. Mix CP 636 mortar with 3:1 ratio (by adding mortar to water)



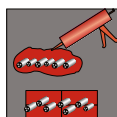
3. Put mortar into place



4. Optional: add CP 651 for future cable changes



5. Fasten installation plate in place (if required)



6. Re-installation: lay cables and close remaining opening

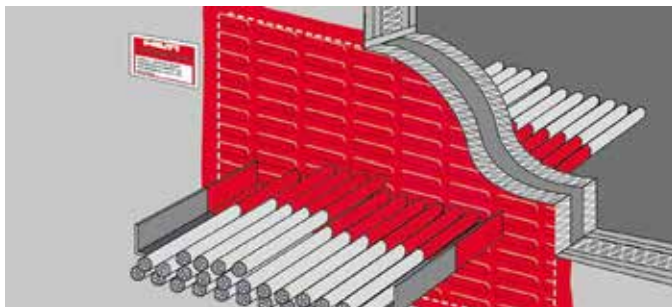
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Ordering designation	Weight	Sales pack quantity	Item number
CP 636 20KG	20 kg	1 pc	334897

Please visit Hilti website for the latest item numbers and related products

## Firestop board, coating CP 670



### APPLICATIONS

- Permanent firestopping of blank openings, cables, cable trays, non-combustible and combustible pipes in medium to large wall and floor openings
- Ideal for large openings

### ADVANTAGES

- Solvent- and silicone-free
- Fully functional immediately after installation
- Smoke tight

### Technical data

<b>Base materials</b>	Drywall, Concrete, Masonry
<b>Approx. density</b>	1470 kg/m <sup>3</sup>
<b>Application temperature range</b>	5 - 40 °C
<b>Temperature resistance range</b>	-40 - 100 °C
<b>Storage and transportation temperature range</b>	5 - 30 °C
<b>Shelf life<sup>1)</sup></b>	15 Months
<b>Colour</b>	White

<sup>1)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



Smoke



Water Tight



Acoustic



Seismic

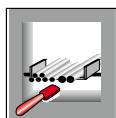


Low VOC

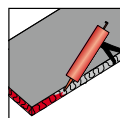


Mould & Mildew

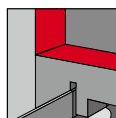
### Application Procedure



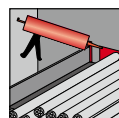
1. Clean the opening



2. Coat cut edges with CP 606



3. Fit CP 670



4. Fill gaps with CP 606



5. Fasten installation (if required)



Order Now



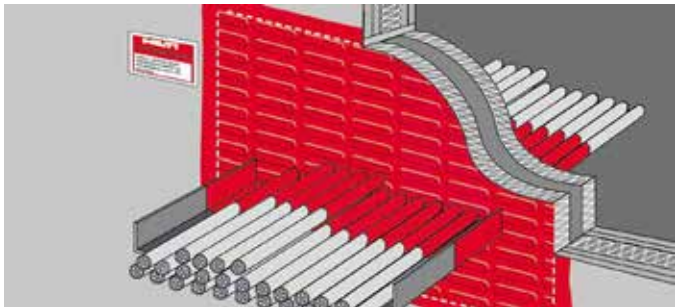
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Ordering designation	Weight	Sales pack quantity	Item number
ROCK WOOL 1.2X0.6-50/D160	-	5 pc	3435517
CP 670 6kg	6 kg	1 pc	376023

Please visit Hilti website for the latest item numbers and related products

# Firestop board CP 670



## APPLICATIONS

- Permanent firestopping of blank openings, cables, cable trays, non-combustible and combustible pipes in medium-to-large wall and floor openings
- Ideal for large openings

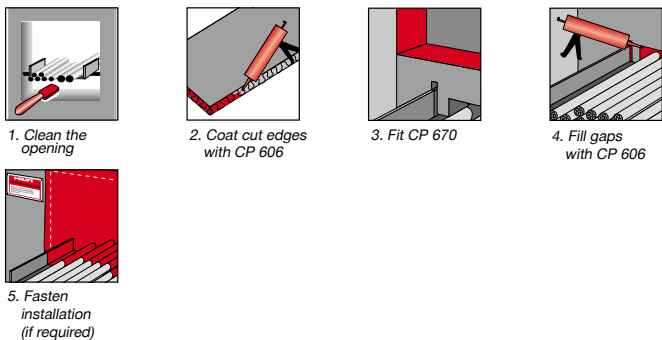
## ADVANTAGES

- Board pre-coated for immediate use
- Virtually no cracking or delamination during cutting
- Broad approval range

Technical data	
Base materials	Drywall, Concrete, Masonry
Dimensions (LxWxH)	1200 x 600 x 50 mm
Approx. board density	160 kg/m³
Application temperature range	5 - 40 °C
Temperature resistance range	-40 - 100 °C
Storage and transportation temperature range	0 - 40 °C
Colour	White



## Application Procedure



Ordering designation	Dimensions (LxWxH)	Sales pack quantity	Item number
CP 670 1200x600x50 white	1200 x 600 x 50 mm	16 pc	236673

Please visit Hilti website for the latest item numbers and related products

## Firestop cushion CP 651N



### APPLICATIONS

- Temporary sealing of openings in floors and walls through the construction phase

### ADVANTAGES

- Quick and easy installation
- No special tools required
- Very economical in use thanks to optimized cushion dimensions
- Re-usable and thus economical
- Fully functional immediately after installation
- Tear-resistant and dust-free installation

### Technical data

<b>Base materials</b>	Drywall, Concrete, Masonry
<b>Approx. density</b>	350 kg/m <sup>3</sup>
<b>Application temperature range</b>	-30 - 35 °C
<b>Temperature resistance range</b>	-40 - 120 °C
<b>Storage and transportation temperature range</b>	-30 - 40 °C
<b>Colour</b>	White

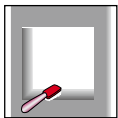


Acoustic

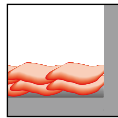


Mould & Mildew

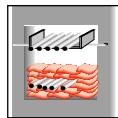
### Application Procedure



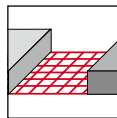
1. Clean opening



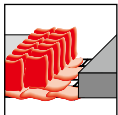
2. Cushion arrangement without cables in wall



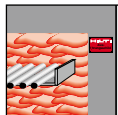
3. Cushion arrangement with cables in wall



4. Fasten wire mesh in place when closing floor openings with cushions



5. Cushion arrangement in floor



6. Fasten installation plate in place (if required)



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Ordering designation	Dimensions (LxWxH)	Sales pack quantity	Item number
CP 651N-S	300 x 40 x 30 mm	30 pc	382624 <sup>1)</sup>
CP 651N-M	300 x 80 x 30 mm	15 pc	382625 <sup>1)</sup>
CP 651N-L	300 x 170 x 30 mm	6 pc	382626 <sup>1)</sup>

<sup>1)</sup> This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products



## Firestop bandage CFS-B



### APPLICATIONS

- Firestopping around insulated (hot/cold) non-flammable pipes
- Pipe materials: copper, steel and other metals with heat conductivity lower than that of copper (e.g. cast iron, stainless steel etc.)
- Various insulation materials
- Suitable for use in openings in concrete, masonry block or drywall

### ADVANTAGES

- Highly versatile - one product for a variety of insulation materials, pipe materials and pipe diameters
- Quick and easy to install - no drilling or additional tools needed
- No need to interrupt the pipe insulation material within the wall/floor penetration
- Minimal thickness for easy installation in narrow gaps
- Good elasticity for optimum flexibility
- Very good acoustic insulation properties



Smoke



Seismic



Low VOC



Mould & Mildew

### Technical data

<b>Base materials</b>	Concrete, Masonry, Drywall
<b>Expansion temperature (approx.)</b>	210 °C
<b>Expansion ratio (unrestricted, up to)</b>	1:14
<b>Storage and transportation temperature range</b>	-5 - 50 °C
<b>Length</b>	10 m
<b>Colour</b>	Grey
<b>Thickness</b>	2 mm

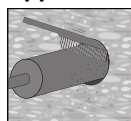


### Application table

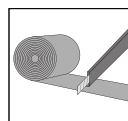
CFS-B (Firestop Bandage - 2 mm thick)

Pipe diameter (mm)	Insulation Thickness (mm)	No. Layers	Reference Wrap length (mm)	No. of penetrations with a 10m roll	Recommended drill hole X (mm)
25	40	2	720	14	121
32	40	2	770	13	128
40	40	2	820	12	136
50	40	2	880	11	146
65	50	2	1100	9	181
80	50	2	1190	8	196
100	50	2	1320	8	216
125	50	2	1480	7	241
150	50	2	1630	6	266
200	50	3	2920	3	319
250	50	3	3390	3	369
300	65	3	4150	2	449
400	65	3	5090	2	549
400	75	3	5280	1.9	569

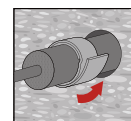
### Application Procedure



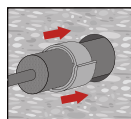
1. Clean the opening. The material around the opening must be dry, in sound condition and free from dust or grease.



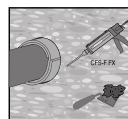
2. Cut Hilti Firestop Bandage CFS-B to fit the outside diameter of the insulation. Ensure 2 layers and an overlap.



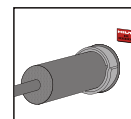
3. Wrap Hilti Firestop Bandage CFS-B around the insulation. Secure the bandage with steel bands or wire (≥ 0.7 mm).



4. Install Hilti Firestop Bandage CFS-B on both sides of the opening to a depth of 62.5 mm (see marking on bandage).



5. Close the remaining gap with the recommend gap filler. Refer to each base material for the correct filler.



6. If it is necessary, an additional insulation over the bandage has to be installed. Mount the installation identification plate beside the correctly sealed opening, if required.

Order Now



Watch Video



Ordering designation

CFS-B

Sales pack quantity

1 pc

Item number

429557

Please visit Hilti website for the latest item numbers and related products



## Firestop collar CP 643 N



### APPLICATIONS

- Plastic pipes with diameters from 20 - 160 mm
- Suitable for PVC, PE and HDPE pipes
- For use in walls and floors
- Waste water pipes, fresh water pipes, drinking water pipes

### ADVANTAGES

- Latch mechanism for quick and easy closure
- Allows correct installation where space is tight
- Flexible tab positioning for convenient fastening
- Ready-to-use product



Siesmic

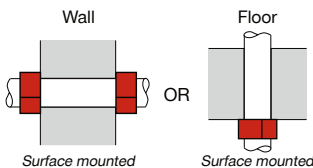


Low VOC



Mould & Mildew

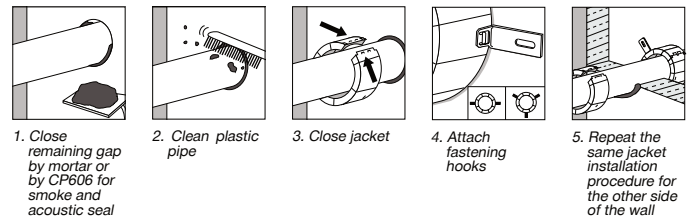
### Fixing Method



### Technical data

<b>Base materials</b>	Concrete, Masonry, Drywall
<b>Expansion temperature (approx.)</b>	250 °C
<b>Expansion ratio (unrestricted, up to)</b>	1:17
<b>Storage and transportation temperature range</b>	-5 - 50 °C

### Application Procedure



Order Now



Ordering designation	Pipe diameter - range	Collar outside diameter	Package contents	Sales pack quantity	Item number
CP643 1.5"/50 N (A2 SS) + HSA-R M6 5/-/-	20 - 51 mm	67 mm	2x Std stud anchor HSA-R M6x50 5/-/-, 1x Firestop Jacket CP 643-50/1.5" N (A2 S.S)	1 pc	3503533
CP643 2"/63 N (A2 SS) + HSA-R M6 5/-/-	52 - 64 mm	82 mm	2x Std stud anchor HSA-R M6x50 5/-/-, 1x Firestop jacket CP 643-63/2" N (A2 S.S)	1 pc	3503534
CP643 2.5"/75 N (A2 SS) + HSA-R M6 5/-/-	65 - 78 mm	102 mm	3x Std stud anchor HSA-R M6x50 5/-/-, 1x Firestop jacket CP 643-72/2.5" N (A2 S.S)	1 pc	3503535
CP643 3"/90 N (A2 SS) + HSA-R M6 5/-/-	79 - 91 mm	117 mm	3x Std stud anchor HSA-R M6x50 5/-/-, 1x Firestop jacket CP 643-90/3" N (A2 S.S)	1 pc	3503536
CP643 4"/110 N (A2 SS) + HSA-R M6 5/-/-	92 - 115 mm	146 mm	3x Std stud anchor HSA-R M6x50 5/-/-, 1x Firestop jacket CP 643-110/4" N (A2 S.S)	1 pc	3503538
CP643 5"/125 N (A2 SS) + HSA-R M6 5/-/-	116 - 125 mm	166 mm	4x Std stud anchor HSA-R M6x50 5/-/-, 1x Firestop jacket CP 643-125/5" N (A2 S.S)	1 pc	3503539
CP643 6"/160 N (A2 SS) + HSA-R M6 5/-/-	126 - 170 mm	236 mm	4x Std stud anchor HSA-R M6x50 5/-/-, 1x Firestop jacket CP 643-160/6" N (A2 S.S)	1 pc	3503540

Ordering designation	Pipe diameter - range	Collar outside diameter	Sales pack quantity	Item number
Firestop Jacket CP 643-50/1.5" N (A2 S.S)	20 - 51 mm	67 mm	1 pc	3447172
Firestop jacket CP 643-63/2" N (A2 S.S)	52 - 64 mm	82 mm	1 pc	3447193
Firestop jacket CP 643-72/2.5" N (A2 S.S)	65 - 78 mm	102 mm	1 pc	3447194
Firestop jacket CP 643-90/3" N (A2 S.S)	79 - 91 mm	117 mm	1 pc	3447195
Firestop jacket CP 643-110/4" N (A2 S.S)	92 - 115 mm	146 mm	1 pc	3447196
Firestop jacket CP 643-125/5" N (A2 S.S)	116 - 125 mm	166 mm	1 pc	3447197
Firestop jacket CP 643-160/6" N (A2 S.S)	126 - 170 mm	236 mm	1 pc	3447198
CP 643-50/1.5" N	32 - 51 mm	67 mm	1 pc	304325
CP 643-63/2" N	52 - 64 mm	82 mm	1 pc	304326
CP 643-75/2.5" N	65 - 78 mm	102 mm	1 pc	304327
CP 643-90/3" N	79 - 91 mm	117 mm	1 pc	304328
CP 643-110/4" N	92 - 115 mm	146 mm	1 pc	304329
CP 643-125/5" N	116 - 125 mm	166 mm	1 pc	304330
CP 643-160/6" N	126 - 170 mm	236 mm	1 pc	304331

Please visit Hilti website for the latest item numbers and related products

# Firestop collar CP 644



## APPLICATIONS

- Sealing flammable pipes from 180 mm to 250 mm in diameter in penetrations through fire compartment walls and floors

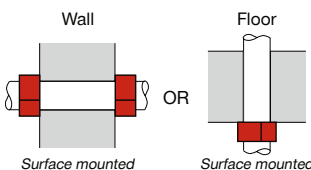
## ADVANTAGES

- Ready-to-use firestop collar with a galvanized steel housing
- Latch mechanism for quick and easy closure
- Flexible hook positioning for convenient fastening

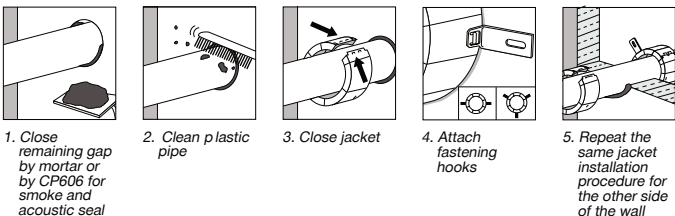
Technical data	
Base materials	Concrete, Masonry, Drywall
Expansion temperature (approx.)	210 °C
Expansion ratio (unrestricted, up to)	1:17
Storage and transportation temperature range	-5 - 50 °C
Colour	Metallic grey



## Fixing Method



## Application Procedure



Order Now



Ordering designation	Collar outer diameter	Sales pack quantity	Item number
CP 644-180/7"	228 mm	1 pc	304339 <sup>1)</sup>
CP 644-200/8"	257 mm	1 pc	304340 <sup>1)</sup>
CP 644-225/9"	289 mm	1 pc	304342 <sup>1)</sup>
CP 644-250/10"	319 mm	1 pc	304343 <sup>1)</sup>
CP 644-250/10" US	319 mm	1 pc	304344 <sup>1)</sup>

<sup>1)</sup> This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products

## Firestop collar endless CFS-C EL **NEW**



### APPLICATIONS

- Suitable for use on shaft walls, coated board, drywall, aerated concrete, masonry and concrete
- Zero distance required to CFS-B firestop bandage, CFS-C EL firestop endless collar and Conlit
- Approved for use with PVC, PP, PE and a wide array of standard acoustic pipes.
- Configurations tested include pipe elbows, inclined pipes and pipes with limited clearance to the wall
- Acoustic pipes tested with insulation and sound decoupling

### ADVANTAGES

- Flexible solution for waste water, roof drainage and pneumatic pipes
- Problem solver for non-standard applications
- Endless solution: one product for all applications
- Well-suited to complex pipe configurations
- Easy installation



Acoustic



Mould & Mildew

### Technical data

<b>Base materials</b>	Drywall, Aerated concrete, Concrete, Masonry
<b>Expansion temperature (approx.)</b>	210 °C
<b>Expansion ratio (unrestricted, up to)</b>	1:19
<b>Storage and transportation temperature range</b>	-30 - 50 °C
<b>Length</b>	3 m



**Order Now**



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Ordering designation	Pipe diameter - range	Package contents	Sales pack quantity	Item number
CFS-C EL	16 -160 mm	1x Firestop bandage CFS-C EL, 18x Closure plate CFS-C EL, 22x Hook CFS-C EL short	1 pc	2075120

Please visit Hilti website for the latest item numbers and related products

## Firestop wrap strip CP 648-E



### APPLICATIONS

- Combustible pipe penetrations

### ADVANTAGES

- Quick and easy closure without tools
- Easy to cut
- Fast installation
- Highest flexibility



Acoustic



Seismic



Low VOC



Mould & Mildew

### Technical data

<b>Base materials</b>	Concrete, Masonry, Drywall
<b>Expansion temperature (approx.)</b>	210 °C
<b>Expansion ratio (unrestricted, up to)</b>	1:19
<b>Storage and transportation temperature range</b>	-5 - 50 °C
<b>Length</b>	10 m
<b>Colour</b>	Grey, printed foil
<b>Dimensions (LxWxH)</b>	10000 x 45 x 5 mm
<b>Height</b>	5 mm

### Application table

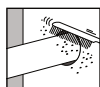
CP 648-E (Firestop Endless Wrap - 4.5 mm thick)

Pipe dimension (mm)	No. layers	Reference wrap length (cm) <sup>^^</sup>	No. of penetrations with a 10 m roll	Recommended drill hole X (mm)
20	1	7	142	37 <sup>^</sup>
50	1	17	58	67 <sup>^</sup>
63	1	21	47	77 <sup>^</sup>
75	1	25	40	92 <sup>^</sup>
90	2	64	15	112 <sup>^</sup>
110	2	75.5	13	132 <sup>^</sup>
125	2	85.5	11	152 <sup>^</sup>
160	3	166	6	202 <sup>^</sup>

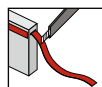
<sup>^</sup> or bigger <sup>^^</sup> The wrap length should



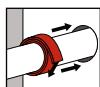
### Application Procedure



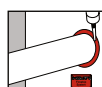
1. Clean the plastic pipe.



2. Cut CP 648-E to the correct length (see measurement table on product packaging for help).

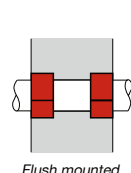


3. Wrap the CP 648-E around the pipe, fasten it with a adhesive tape and push it into the annular space



4. Close remaining gap to ensure smoke and gas tight seal. Fasten installation plate if required.

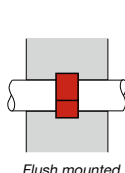
### Fixing Method



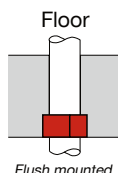
Flush mounted

Wall

OR



Flush mounted



Flush mounted

Floor

Order Now



Ordering designation	Sales pack quantity	Item number
CP 648-E-W45/1.8"	1 pc	304310

Please visit Hilti website for the latest item numbers and related products

## Firestop sleeve CFS-SL **NEW**



### APPLICATIONS

- Sealing penetrations with single cables and cable bundles
- Suitable for small to medium-sized circular openings in walls, ceilings and floors
- For use on concrete, masonry and drywall

### ADVANTAGES

- Quick and easy to install and inspect
- Fully functional immediately after installation
- Robust
- Optimum smoke-restriction performance
- Easy maintenance and retro-fitting of cables

### Technical data

<b>Base materials</b>	Concrete, Masonry, Drywall
<b>Expansion temperature (approx.)</b>	160 °C
<b>Intumescent</b>	Yes
<b>Storage and transportation temperature range</b>	-5 - 50 °C
<b>Application temperature range</b>	-5 - 50 °C
<b>Temperature resistance range</b>	-30 - 100 °C
<b>Approvals</b>	FM, UL, BS, EN
<b>Reusable (and removable)</b>	Possible
<b>Acoustics performance</b>	Test report available



Acoustic



Seismic

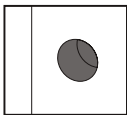


Low VOC

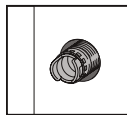


Mould & Mildew

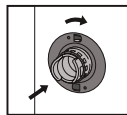
### Application Procedure



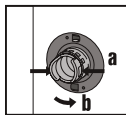
1a. For a 2" sleeve: use a 2.5" hole saw to create a hole.



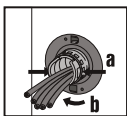
2. Insert the sleeve.



3. Insert and spin the flange clockwise onto the device until you reach the wall. Repeat on other side of the wall.



4. To open the device: (a) On one side of the wall, press the clip closure inward. (b) Twist the device counterclockwise.



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



Order Now



Watch Video



Ordering designation	Sales pack quantity	Item number
<b>CFS-SL M</b>	1 pc	<b>2019718<sup>1)</sup></b>
<b>CFS-SL L</b>	1 pc	<b>2075168<sup>1)</sup></b>

<sup>1)</sup> This is a non-stock item. For detailed lead time information please contact your Hilti representative.

Please visit Hilti website for the latest item numbers and related products



## Firestop cable coating CP 678



### APPLICATIONS

- Protection of cables and bunched cables on cable trays in indoor installations
- Meets IEC 60332-3-22 Category A standard for reduced spread of flame
- Factory Mutual Approved (fire retardant coating of electrical cables)
- For use in power plants, telecommunications complexes, industrial plants, petrochemical plants, paper mills, factories and production facilities
- Easy to apply using a paint brush or airless spray gun

### ADVANTAGES

- Intumescent
- Water soluble, odourless and solvent free
- Free of fibres and asbestos
- No derating effects on cables
- Rapid drying, remains flexible when dry
- Compatible with the sheathing of electrical cables



Seismic



Low VOC



Mould & Mildew

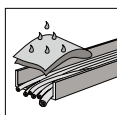
### Consumption Guide

Test Standard	Dry film thickness	Wet film thickness	Approx. Requirement
IEC 60332-3	1.0 mm coating	1.4 mm coating	1.8 kg/m <sup>2</sup> (1.4 liters/m <sup>2</sup> )
Factory Mutual Approval	1.6 mm coating	2.2 mm coating	2.86 kg/m <sup>2</sup> (2.2 liters/m <sup>2</sup> )

Note (a): Each 20 kilogram container of CP 678 contains approximately 15.4 liters.

Note (b): For cable trays or cable bundles with large cables, allow approx. 10% wastage for application by brush or roller.  
For cable trays or cable bundles with small cables, allow approx. 20% wastage for application by brush or roller.

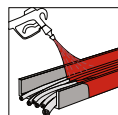
### Application Procedure



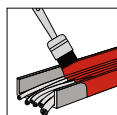
Clean cables



Mix coating



Apply coating



Technical data	
Chemical basis	Acrylate
Weight	20 kg
Application temperature range	5 - 40 °C
Temperature resistance range	-30 - 80 °C
Storage and transportation temperature range	5 - 30 °C
Shelf life <sup>1)</sup>	18 Months
Colour	White

<sup>1)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



Order Now

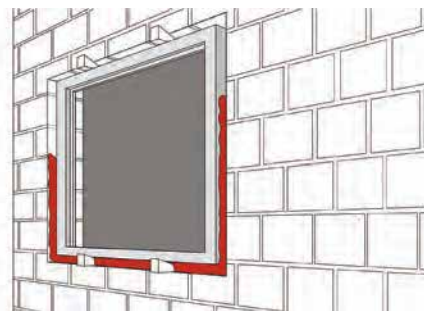
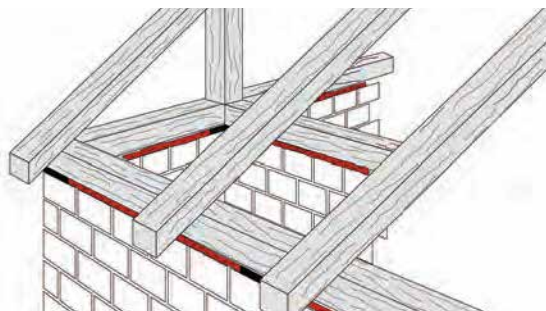


Ordering designation	Weight	Package contents	Sales pack quantity	Item number
CP 678 20KG	20 kg	1x Firestop cable coating CP 678	1 pc	334892

Please visit Hilti website for the latest item numbers and related products



## Dispenser foam CF125-50



### APPLICATIONS

- Insulating gaps around window frames, cooling equipment and pipes, heating pipes, baths, wood floors, air-conditioning equipment, air ducts

### ADVANTAGES

- High yield
- Stop-and-go controlled dispensing
- Economical in use

### Technical data

<b>Chemical basis</b>	Polyurethane
<b>Content per can/cartridge</b>	750 ml
<b>Foam yield (up to)</b>	50 l
<b>Approx. tack-free time (at 23°C / 50% rel. humidity)</b>	10 min
<b>Approx. cut time (at 23°C / 50% rel. humidity)</b>	20 min
<b>Min. time before loadbearing</b>	Approx. 3-5 h
<b>Temperature resistance range</b>	-30 - 80 °C
<b>Storage and transportation temperature range</b>	5 - 25 °C
<b>Thermal conductivity (λ approx. value)</b>	0.04 W/mK
<b>Shelf life<sup>1)</sup></b>	12 Months

<sup>1)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



**Order Now**



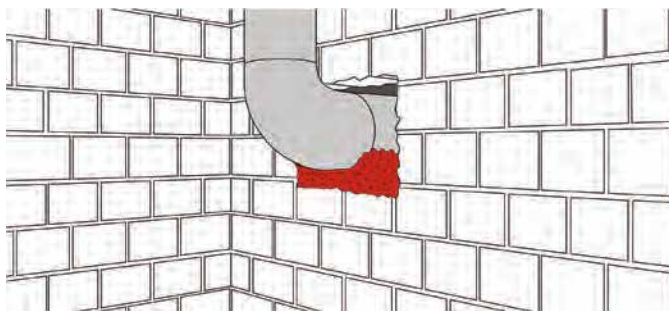
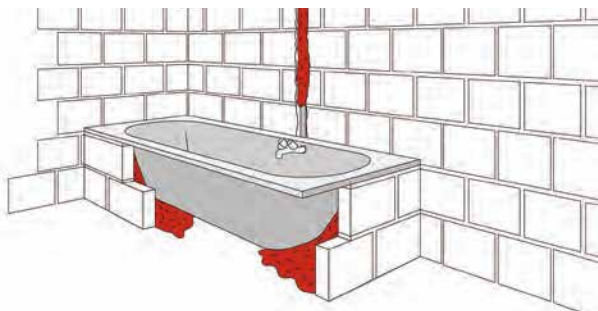
Ordering designation	Sales pack quantity	Item number
CF 125-50 750ML	1 pc	259628

Please visit Hilti website for the latest item numbers and related products

### Related products on page

Consumables 362-363

## Filling foam CF-F 750



### APPLICATIONS

- Gaps and cracks
- Drywall voids
- Electrical voids
- Backfilling for sealants
- Holes left by concrete forms
- Mechanical gaps

### ADVANTAGES

- Easy to use - finger dispensing
- High adhesive strength
- Restricts air infiltration
- High yield

Technical data	
Chemical basis	Polyurethane
Content per can/cartridge	750 ml
Foam yield (up to)	34 l
Approx. cut time (at 23°C / 50% rel. humidity)	30 min
Min. time before loadbearing	Approx. 3-5 h
Temperature resistance range	-40 - 80 °C
Storage and transportation temperature range	5 - 25 °C
Thermal conductivity (λ approx. value)	0.04 W/mK
Shelf life <sup>1)</sup>	12 Months

<sup>1)</sup> at 77°F/25°C and 50% relative humidity; from date of manufacture



Order Now



Ordering designation	Sales pack quantity	Item number
CF-F 750	1 pc	369811

Please visit Hilti website for the latest item numbers and related products

### Related products on page

Consumables 362

## Cleaner CFR 1



### APPLICATIONS

- Dissolves uncured polyurethane foam
- Cleans CF-DS1 dispenser surfaces
- May be used with the CF-DS1 to improve throughput, if required

### ADVANTAGES

- Easily removes fresh uncured foam
- Cleans fresh spillage of uncured foam from most common jobsite surfaces
- Includes a nozzle tip for cleaning dispenser surfaces as well as the can dispenser adapter

### Technical data

Application temperature - max.	30 °C
Application temperature - min.	5 °C
Application temperature range	5 - 30 °C

**Order Now**



Ordering designation	Sales pack quantity	Item number
Cleaner CFR1 500ML	1 pc	20162

Please visit Hilti website for the latest item numbers and related products

### Related products on page

Consumables 360-361

## CP PRODUCTS TESTED FOR

At least 13 other types of test have been carried out covering properties such as water tightness, chemical compatability, explosion resistance, radiation resistance, mould resistance, electrical resistance, etc.

<b>CP 606</b>	Low VOC	Fire	Smoke /Gas Tightness	Water Tightness	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 601S</b>	Low VOC	Fire	Smoke /Gas Tightness	Water Tightness	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>FS-One Max</b>	Low VOC	Fire	Smoke /Gas Tightness	Water Tightness	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 611A</b>	Low VOC	Fire	Smoke /Gas Tightness	Water Tightness	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CFS-SP WB</b>	Low VOC	Fire	Smoke /Gas Tightness	Water Tightness	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 617</b>	Low VOC	Fire			Acoustic Insulation			PLANNED
<b>CFS-D</b>	Low VOC	Fire						PLANNED
<b>CP 620</b>	Low VOC	Fire	Smoke /Gas Tightness	Water Tightness	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CFS-F FX</b>	Low VOC	Fire	Smoke /Gas Tightness		Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CFS-BL</b>	Low VOC	Fire	Smoke /Gas Tightness		Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 636</b>	Low VOC	Fire			Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 670</b>	Low VOC	Fire	Smoke /Gas Tightness	Water Tightness	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 651 N</b>		Fire	WITH SEALANT		Acoustic Insulation		30 ans	Resistance to Aging*
<b>CFS-B</b>	Low VOC	Fire	WITH SEALANT	WITH SEALANT	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 643 N</b>	Low VOC	Fire	WITH SEALANT	WITH SEALANT	NOT APPLICABLE	Siesmic	30 ans	Resistance to Aging*
<b>CFS-C EL</b>	Low VOC	Fire	WITH SEALANT	WITH SEALANT	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 648-E</b>	Low VOC	Fire	WITH SEALANT	WITH SEALANT	Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CFS-SL</b>	Low VOC	Fire			Acoustic Insulation	Siesmic	30 ans	Resistance to Aging*
<b>CP 678</b>	Low VOC	Fire				Siesmic		PLANNED

\*Fire resistance test reports / approvals / certificates normally do not contain any information on the service life of a firestop product / assembly. By carrying out own additional ageing tests which simulate extreme temperature / humidity conditions, Hilti provides its customers with a very high level information on product reliability and service life expectancy of the Hilti firestop systems. On the basis of the ageing cycles obtained in these test procedures as well as of experience gained in the field of concrete construction, it can be assumed that Hilti firestop systems have a service life (ageing resistance) of approximately 30 years from manufacturing date.

Please note that this expected long-term ageing resistance of Hilti firestop systems, which is given on the basis of the above-mentioned tests, depends on a number of factors on which Hilti basically has no influence ( e.g. environmental factors such as extreme environmental conditions, e.g. chemicals, etc. ) and, therefore, are subject to the following conditions which must be strictly observed by the user with regard to the respective Hilti firestop system:

- Strict adherence to the Hilti's operating, setting, installing and other technical instructions;
- Rigorous compliance with all other conditions set in the respective specifications during the lifetime of the Hilti firestop systems, in particular with regard to regular control and maintenance as well as to foreseeable use under normal climatic condition in the respective field of application.

## PRODUCTS APPROVALS AND TESTING

					Page
CP 606	British Standard BS 476-20	BS EN 1366-3			53
CP 601S	British Standard BS 476-20	BS EN 1366-3			54
FS-One Max	British Standard BS 476-20				55
CP 611A	British Standard BS 476-20	BS EN 1366-3			56
CFS-SP WB		BS EN 1364-4 BS EN 1364-3			57
CP 617	British Standard BS 476-20	BS EN 1364-1			58
CFS-D	British Standard BS 476-6&7	BS EN 1366-3			59
CP 620	British Standard BS 476-20				60
CFS-F FX	British Standard BS 476-20	BS EN 1366-3			61
CFS-BL	British Standard BS 476-20	BS EN 1366-3			62
CP 636	British Standard BS 476-20	BS EN 1366-3			64
CP 670	British Standard BS 476-20	BS EN 1366-3			65-66
CP 651N	British Standard BS 476-20	BS EN 1366-3			67
CFS-B	British Standard BS 476-20	BS EN 1366-3			68
CP 643 N	British Standard BS 476-20	BS EN 1366-3			69
CFS-C EL	British Standard BS 476-20	BS EN 1366-3			71
CP 648-E	British Standard BS 476-20	BS EN 1366-3			72
CFS-SL	British Standard BS 476-20	BS EN 1366-3			73
CP 678	British Standard BS 476-6&7				74

# FOR PEACE OF MIND

## Firestop Engineering Services

Prevention of spread of smoke and fire often presents challenges for planners and installers and demand considerable administrative work. We provide comprehensive firestop engineering service to allow planners, building owners, designers and supervisory team to simply and efficiency carry out firestop design and inspection work.

# FIRESTOP ENGINEERING

## FIRESTOP SYSTEM DESIGN PROPOSAL

Objective: To protect assets and fulfill required building performance

Seminar & site walk to go through site condition for firestopping system

Made to fit firestop proposal to suit different application systems on site







# ENGINEERING SERVICES

## FIRESTOP SYSTEM POST-INSTALLATION CHECKING TRAINING

Objective: To safeguard proper installation of firestop system to minimize any unexpected rework

Professional training to go through inspection checklist

Documentation report to record installation against inspection checklist





### Important notice

1. Construction materials and conditions vary on different sites. If it is suspected that the base material has insufficient strength to achieve a suitable fastening, contact the Firestop Technical Team.

2. The information and recommendations given herein are believed to be correct at the time of writing. The data has been obtained from tests under laboratory or other controlled conditions and it is the users responsibility to use the data given in the light of conditions on site and taking into account the intended use of the products concerned.

Whilst Hilti can give general guidance and advice, the nature of Hilti products means that the ultimate responsibility for selecting the right product for particular applications must lie with the customer.

3. All products must be used, handled and applied in accordance with all current instructions for use published by Hilti.

4. All products are supplied, and advice given, subject to Hilti's terms of business.

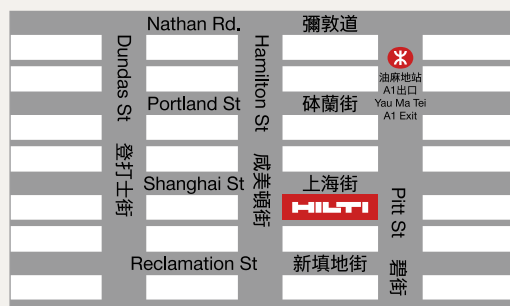
5. Hilti's policy is one of continuous development. We therefore reserve the right to alter specifications etc. without notice.

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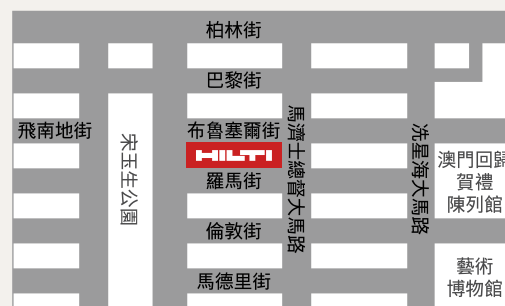
## Mongkok Hilti Centre



G/F 403 Shanghai Street, Yau Ma Tei,  
Kowloon, Hong Kong

(Drop-off services of Repair tools available)

## Macau Hilti Centre



Rua De Bruxelas, S/N Edificio,  
Kin Heng Long, Loja, W-R/C, Macau



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