

UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 1/33
Date of Issue 2023-11-01

Certificate Holder Hilti (Aust.) Pty. Ltd
1G Homebush Bay Drive
PO Box 3217
Rhodes NSW 2138, Australia

Manufacturer Hilti AG,
Feldkircherstrasse 100
FL-9494 Schaan
Liechtenstein
Internet: www.hilti.com

Production Sites (Factory) Hilti Plant 4a

Certified Product Description Firestopping Block
Model(s) Hilti Firestop Block CFS-BL

Trade Name or Trademark Hilti Firestop Putty Bandage CFS-P BA

Hilti Firestop Block CFS-BL

Hilti Firestop Putty Bandage CFS-P BA

Rating Information Refer to Appendix A

Standard tested to AS 1530.4:2014 and AS 4072.1:2005

Test Report References See page 32 and 33

Listing Category and File Ref AUEF.RS5419

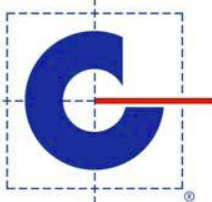
Additional Information and Conditions See page 2

Expiry date 2033-11-01



Stuart Foster
Certification Officer

JAS-ANZ



Certification Body

www.jas-anz.org/register

This is to certify that representative samples of the Product described herein ("Certified Product") have been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the UL-AU Mark Scheme requirements and JAS-ANZ accreditation requirements. The designated Certificate Holder is entitled to use the UL-AU Mark for the Certified Product manufactured at the production site(s) identified above, in accordance with the UL-AU Mark Scheme Service Agreement. Only those Products bearing the UL-AU Mark for Australia should be considered as being covered by UL's UL-AU Mark Service. This certificate shall remain valid through to the expiration date, unless terminated earlier in accordance with the Service Agreement including without limitation if the Standard identified on this Certificate is amended or withdrawn prior to the expiration date.

This Certificate remains the property of UL International New Zealand Ltd.

If the client provides copies of the certification documents to others, the documents shall be reproduced in their entirety.

All dates are in Year-Month-Day format (YYYY-MM-DD).

UL International New Zealand Ltd,
54 Tarndale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 2/33
Date of Issue 2023-11-01

Additional Information:

This certificate is evidence that prototypes of the nominated products and their configurations as detailed in Appendix A conform to the following parameters:

1. Have been tested to AS 1530.4:2014 and AS 4072.1:2005 or an equivalent or more severe test and the Fire Resistance Level (FRL) nominated in Appendix A was achieved by the prototype for each nominated assembly of service penetration, building element and protection method configuration, without the assistance of an active fire suppression system.
2. Test results are detailed in a confidential test report that may be available from the certificate holder upon request. The information regarding the test parameters is included in the confidential technical file.
 - (i) the method and conditions of the test;
 - (ii) form of construction of the tested prototype; and
 - (iii) that restraint complied with AS 1530.4.
3. Testing was conducted at multiple locations by suitably accredited laboratories that are accredited by a signatory to the International Accreditation Cooperation Mutual Recognition Arrangement (ILAC-MRA) as recognised by NATA who is also a signatory body to this Agreement. The data has been reviewed by UL against the relevant to accreditation schedules.

Certification Body

UL International New Zealand Ltd,
54 Tarnsdale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 3/33
Date of Issue 2023-11-01

The UL Enhanced Mark shall appear on certified products only and shall be used only in accordance with the UL-AU Mark Scheme Service Terms Minimum size is not specified, as long as the Mark is legible. The following are examples of the format.



The file number that replaces E123456 and NC12345 in the above examples is; **RS5419**

The following Supplementary Information shall be placed adjacent to the Certification Mark;
**Firestopping - Non-Intumescent Seals and Mortars
AS 1530.4**

The UL Enhanced Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number are also required on that same label or nameplate. If cast, stamped or molded, the Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

All content shall be in accordance with the details provided on this Certificate.

PROCUREMENT

The Production site may reproduce the Mark or obtain it from a UL authorized supplier. The list of UL authorized suppliers can be found on UL's online directory at www.ul.com.

Certification Body

UL International New Zealand Ltd,
54 Tarndale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 4/33
 Date of Issue 2023-11-01

Appendix A

Conforming product configurations to achieve nominated FRL's

A.1 Specific Parts for Hilti Firestop CFS-BL:

Technical description of product:

"Hilti Firestop Block CFS-BL" is used as a mixed penetration seal together with "Hilti Firestop Filler CFS-FIL" and in some cases with "Hilti Firestop Putty Bandage CFS-P BA" or with "Hilti Firestop Bandage CFS-B".

Components	Characteristics
Hilti Firestop Block CFS-BL	Brick-shaped block based on a pre-cured, pre-formed PU-based firestop material according to Annex B.1 of the certificate.
Hilti Firestop Filler CFS-FIL	Acrylic based firestop filler mastic according to Annex B.2 of the certificate.
Hilti Firestop Intumescent sealant CP 611A or CFS IS	firestop Intumescent mastic according to Annex B
Hilti Firestop Putty Bandage CFS-P BA	Graphite based pipe wrap according to Annex B.3 of the certificate.
Hilti Firestop Bandage CFS-B	Graphite based pipe wrap according to Annex B.4 of the certificate.

Additional Components	Characteristics
Hilti Firestop Coating CFS-CT	Additional protection for penetration seals for waveguides according to Annex B.5 of the certificate

Intended use:

"Hilti Firestop Block CFS-BL" is intended to be used as a mixed penetration seal to temporarily or permanently reinstate the fire resistance performance of flexible wall constructions, rigid wall constructions and rigid floor constructions where they have been provided with apertures which are penetrated by various cables, conduits, metal pipes, plastic pipes and multi-layer composite pipes.

The maximum opening size of the penetration seal in wall constructions is 1000 x 1000 mm, in floor constructions 1000 x 700 mm. For more details see Annex C of the certificate.

"Hilti Firestop Block CFS-BL" was also tested in a sandwich panel construction.

"Hilti Firestop Block CFS-BL" was also tested in proprietary wall systems such as Dintel and AFS logic wall.

"Hilti Firestop Block CFS-BL" can only be used as penetration seal for cables, metal pipes, plastic pipes or for mixed penetration (combination). Further details are given in Annex C of the certificate. Other parts or service support constructions shall not penetrate the penetration seal.

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 5/33
Date of Issue 2023-11-01

“Hilti Firestop Block CFS-BL” can be installed only in types of separating elements as specified in following table. For further details see Annex C of the certificate.

Separating element	Construction	Maximum opening size of the penetration seal (width x height)
Flexible walls	<ul style="list-style-type: none"> > Steel studs or timber studs lined on both faces with minimum 2 layers of gypsum boards (minimum thickness 12.5 mm) > For steel stud walls the space between lining must not be completely filled with insulation material, especially in the adjacent area of the penetration seal > For timber studs walls there must be a minimum distance of 100 mm of the penetration seal to any timber stud. The cavity between the penetration seal and stud has to be closed with minimum of 100 mm of insulation > Minimum thickness 100 mm 	1000 x 1000 mm For details see Annex C of the certificate
Sandwich panel wall	<ul style="list-style-type: none"> > Paroc® line 200 AST® F+ > Internal sheet made of polyethylene (PE) coated zincified steel with sheet thickness of 0.5 mm and coating thickness of 25 µm > Stone wool core with a thickness of 99 mm and a density of 115 kg/m³ > External sheet made of polyethylene (PE) coated zincified steel with sheet thickness of 0.5 mm and coating thickness of 25 µm > Minimum thickness 100 mm 	1000 x 1000 mm For details see Annex C of the certificate
Proprietary wall	<ul style="list-style-type: none"> > AFS logic wall, minimum thickness 100 mm > Dincel wall, minimum thickness 120 mm > Speedpanel, minimum thickness 78 mm, provided that the wall has been tested or assessed to achieve -/120/120 according to AS 1530.4 	1000 x 1000 mm For details see Annex C of the certificate
Rigid walls	<ul style="list-style-type: none"> > Aerated concrete, concrete, masonry > Minimum density 450 kg/m³ > Minimum thickness 100 mm > The rigid wall shall be classified for the required fire resistance period 	1000 x 1000 mm For details see Annex C of the certificate
Rigid floors	<ul style="list-style-type: none"> > Aerated concrete, concrete > Minimum density 450 kg/m³ > Minimum thickness 150 mm > The rigid floor shall be classified for the required fire resistance period 	1000 x 1000 mm For details see Annex C of the certificate

Certification Body

UL International New Zealand Ltd,
54 Tarndale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 6/33
Date of Issue 2023-11-01

A.1.1 Abbreviations used in drawings

Abbreviation	Description
A, A ₁ , A ₂ ,...	Firestop products
C, C ₁ , C ₂ ,...	Penetrating services
E, E ₁ , E ₂ ,...	Building elements (wall, floor)
h	Height/length of penetration seal
S ₁ , S ₂ , S _n	Distances
t _A	Thickness of penetration seal
t _E	Thickness of the building element
W	Max size of wall penetration
W ₁	Max size of floor penetration without support
W ₂	Max size of floor penetration with support

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 7/33
Date of Issue 2023-11-01

Appendix B

Description of Product(s) & Product Literature

- B.1 Hilti Firestop Block CFS-BL**
Brick-like shaped blocks with dimensions of 200 x 130 x 50 mm (l x w x t).
- B.2 Hilti Firestop Filler CFS-FIL**
“Hilti Firestop Filler CFS-FIL” is available as a cartridge of 310 ml or as a foil pack of 580 ml.
Suitable dispensers:
“Hilti CFS-DISP / CS 201-P1” (for 310 ml cartridge)
“Hilti CS 270-P1” (for 580 ml foil pack)
Hilti Firestop Intumescent sealant CP 611A
“Hilti Firestop Intumescent sealant CP 611A” is available as a cartridge of 310 ml
“Hilti Firestop Intumescent sealant CP 611A” is equivalent to “Hilti Firestop Intumescent sealant CFS-IS”
- B.3 Hilti Firestop Putty Bandage CFS-P BA**
“Hilti Firestop Putty Bandage CFS-P BA” is delivered 100 mm in width, 3 mm in height and 5 m in length on a roll.
- B.4 Hilti Firestop Bandage CFS-B**
“Hilti Firestop Bandage CFS-B” is supplied in roll form, with binding wire used to wrap around pipes and pipe insulation to form a penetration seal. The bandage is cut to a length which suits the overall diameter of pipe or pipe and insulation and wrapped around the penetration twice.
“Hilti Firestop Bandage CFS-B” is supplied in 125 mm width, 2 mm thick and 10 m length.
- B.5 Hilti Firestop Coating CFS-CT**
“Hilti Firestop Coating CFS-CT” is used as additional protection for penetration seals for waveguides. For details of the application, see Annex C.2.2.d and C.5.2.c of the certificate.
- B.6 Technical product literature**
Technical data sheet “Hilti Firestop Block CFS-BL” (including all ancillary products).

Certification Body

UL International New Zealand Ltd,
54 Tarndale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 8/33
 Date of Issue 2023-11-01

Appendix C

RESISTANCE TO FIRE CLASSIFICATION OF PENETRATION SEALS MADE OF HILTI FIRESTOP BLOCK CFS-BL

C.1 General Information

C.1.1 Wall/floor constructions

- a) Flexible wall:
 The wall must have a minimum thickness of 100 mm and comprise timber or steel studs lined on both faces with minimum 2 layers of 12.5 mm thick gypsum plaster boards.
 For timber stud wall constructions there must be a minimum distance of 100 mm of the penetration seal to any stud. The cavity between stud and penetration seal must be closed with minimum of 100 mm of insulation.
- b) Rigid wall:
 The wall must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 450 kg/m³.
 AFS logic wall, minimum thickness 100 mm
 Dintel wall, minimum thickness 120 mm
- c) Speedpanel, minimum thickness 78 mm, provided that the wall has been tested or assessed to achieve -/120/120 according to AS 1530.4 Rigid floor:
 The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 450 kg/m³.
 The walls / floors must be classified for the required fire resistance period.
- d) Sandwich panel wall:
 The partition is constructed of PAROC® line 200 AST panels with a thickness of 100 mm, a width of 1200 mm and a mineral (stone) wool core with a density of 115 kg/m³.
 The sandwich panel construction must be classified for the required fire resistance period and has to be set up according to the conditions related to the required fire resistance period.

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 9/33
 Date of Issue 2023-11-01

C.1.2 Aperture framing / beading

The penetration seal depth is always 200 mm irrespective of the thickness of the wall or floor. For flexible walls, an aperture framing or a beading must be used such that $t_E \geq 200$ mm. For rigid walls with a thickness of less than 150 mm, an aperture framing, or beading must be used such that $t_E \geq 150$ mm.

Aperture framing: Box frame 200 mm deep, perpendicular to the wall/floor surface, made of fire rated gypsum or calcium silicate board at least 12.5 mm thick, centred in the wall (figure a, d).

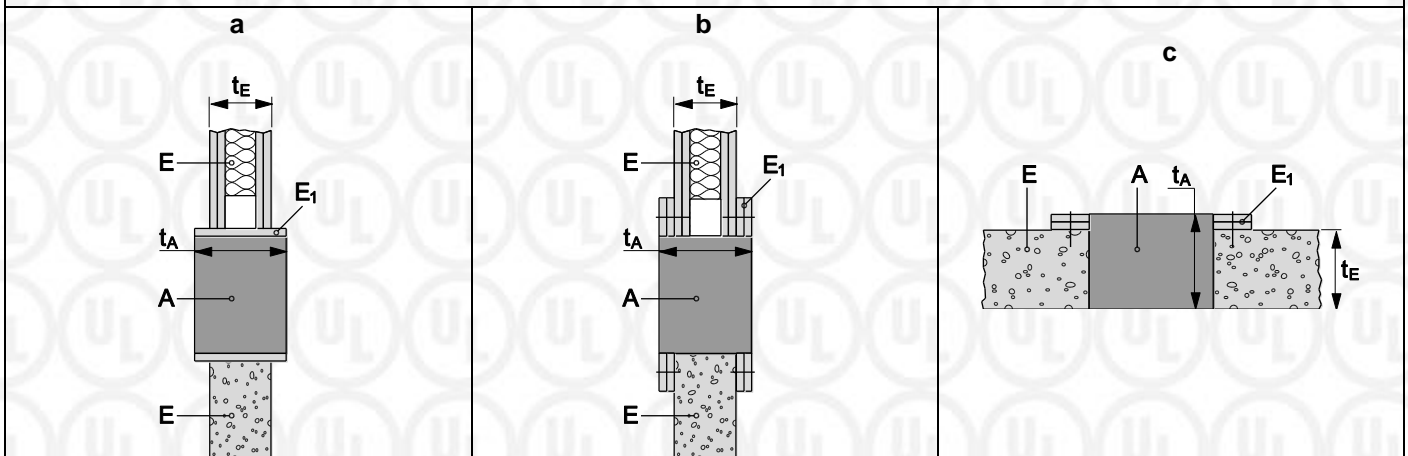
Beading: Fire rated gypsum or calcium silicate board strips at least 100 mm wide (W_A , Figure e) are installed around the opening with the necessary number of layers to form a frame on the top side of a floor, or two frames of the same height on both sides of a wall (Figures b, c, e).

Walls: The penetration seal is installed centred (Figures a, b).
 Floors: Flush to the soffit of the floor (Figure c).

Beading: gypsum or calcium silicate board strips with a width of at least 100 mm (w_A , figure 1e) are installed around the opening with the necessary number of layers to form a frame on the top side of a floor or two frames of the same height on both sides of a wall (figure 1b, c, e).

In walls penetration seal is installed centred (figure 1a, b), in floors flush to the soffit of the floor (figure 1c).

The penetration seals in the sandwich panel constructions do not require an aperture frame as described above. Instead, the opening perimeter is finished with 30 x 30 x 2 mm steel profiles fixed onto the panel with $\varnothing 3.5$ x 30 mm self-drilling screws.



Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 10/33
 Date of Issue 2023-11-01

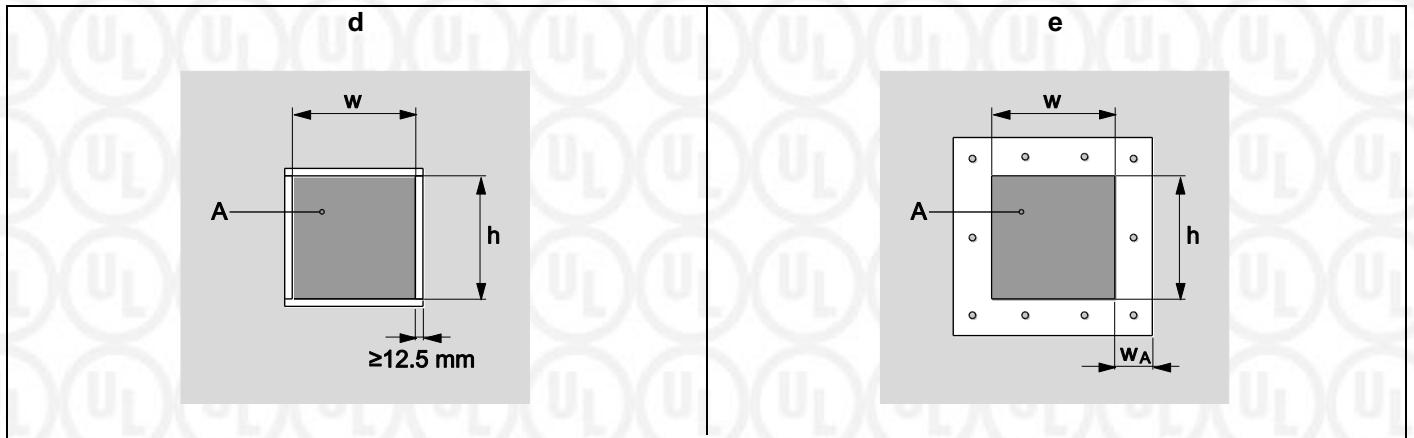


Figure 1: position of the penetration seal in walls / floors aperture framing / beading

A	Hilti Firestop Block CFS-BL	t_E	Thickness of the separating element
E	Separating element (rigid or flexible wall construction, floor)	w	Width of the penetration seal
E1	Aperture frame	h	Height of the penetration seal
t_A	Thickness of the penetration seal	w_A	Width of the beading

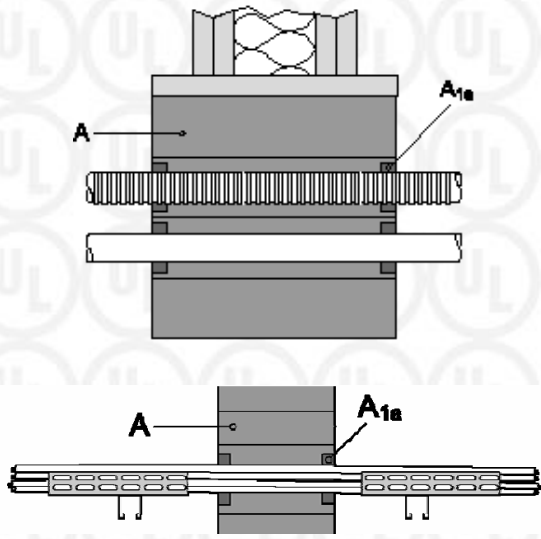
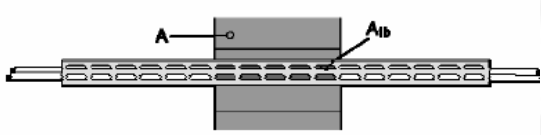
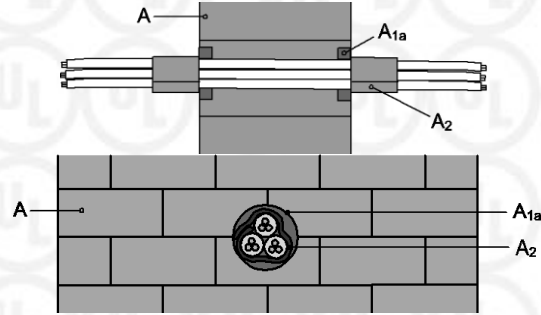
Certification Body

UL International New Zealand Ltd,
 54 Tarnedale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 11/33
 Date of Issue 2023-11-01

C.1.3 Penetration seal types	
C.1.3.1 Penetration seal type 1 (A ₁) - blocks and filler	
<p>a) <u>Services without cable supports (baskets, ladders, trays) in the area of the penetration seal</u></p> <ul style="list-style-type: none"> Gaps between services and Hilti Firestop Blocks CFS-BL (A) are filled with Hilti Firestop Filler CFS-FIL or CP 611A or CFS-IS (A_{1a}), depth 20 mm. 	 <p>Figure 1: penetration seal type A_{1a}</p>
<p>b) <u>Services on cable supports (baskets, ladders, trays) running through the penetration</u></p> <ul style="list-style-type: none"> Gaps between services and Hilti Firestop Blocks CFS-BL (A) are filled with Hilti Firestop Filler CFS-FIL or CP 611A or CFS-IS (A_{1b}) over the entire depth of the seal (200 mm). 	 <p>Figure 3: penetration seal type A_{1b}</p>
C.1.3.2 Penetration seal type putty 1 (A _{2a}) - blocks, filler and 1 layer putty bandage	
<p>a) <u>Services without cable supports (baskets, ladders, trays) in the area of the penetration seal</u></p> <ul style="list-style-type: none"> Gaps between services and Hilti Firestop Blocks CFS-BL (A) are filled with Hilti Firestop Filler CFS-FIL or CP 611A or CFS-IS (A_{1a}), depth 20 mm. One layer of Hilti Firestop Putty Bandage CFS-PBA (A₂) or Hilti Firestop Bandage CFS-B is wrapped around the services or group of services. 	 <p>Figure 4: filler (A_{1a}) with 1 layer putty</p>

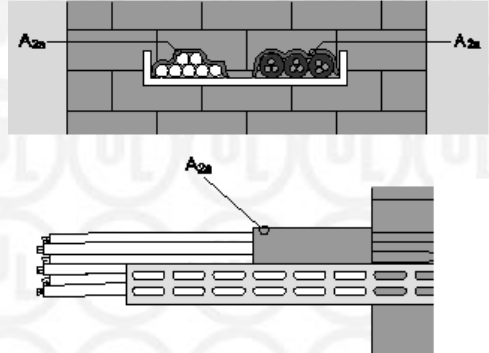
Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



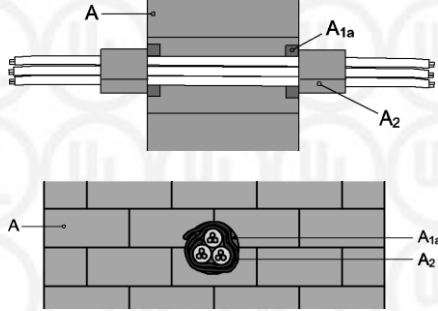
APPENDIX - UL-AU CERTIFICATE

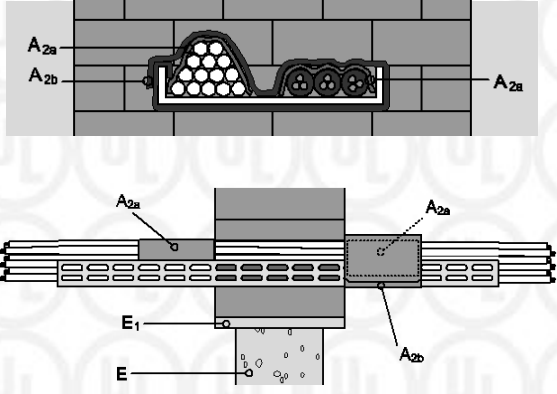
Certificate No. UL-AU-230001
 Page 12/33
 Date of Issue 2023-11-01

<p>c) <u>Services on cable supports (baskets, ladders, trays) running through the penetration</u></p> <ul style="list-style-type: none"> Gaps between services and Hilti Firestop Blocks CFS-BL (A) are filled with Hilti Firestop Filler CFS-FIL or CP 611A or CFS-IS (A1b) over the entire depth of the seal (200 mm). Services are additionally covered by a layer of Hilti Firestop Putty Bandage CFS-P BA (A2a). 	 <p>Figure 5: filler (A1b) with 1 layer putty (A2a), support tray</p>
---	---

Hilti Firestop Putty Bandage CFS-P BA must be installed with the mesh outside/upside.
 For floor applications, Hilti Firestop Putty Bandage CFS-P BA is required on the top side, only.

C.1.3.3 Penetration seal type putty 2 (A2b) – blocks, filler and 2 layers putty bandage

<p>a) <u>Services without cable supports (baskets, ladders, trays) in the area of the penetration seal</u></p> <ul style="list-style-type: none"> Gaps between services and Hilti Firestop Blocks CFS-BL (A) are filled with Hilti Firestop Filler CFS-FIL or CP 611A or CFS-IS (A1a), depth 20 mm. Two layers of Hilti Firestop Putty Bandage CFS-P BA (A2) are wrapped around the services or group of services. 	 <p>Figure 6: filler (A1a) with 2 layers of putty</p>
--	--

<p>b) <u>Services on cable supports (baskets, ladders, trays) running through the penetration</u></p> <ul style="list-style-type: none"> Gaps between services and Hilti Firestop Blocks CFS-BL (A) are filled with Hilti Firestop Filler CFS-FIL (A1b) over the entire depth of the seal (200 mm). Services are additionally covered by a layer of Hilti Firestop Putty Bandage CFS-P BA (A2a) on top of the services in the cable supports. A second layer of Hilti Firestop Putty Bandage CFS-P BA (A2b) is laid on top of the first and then wrapped around the services including the cable supports (A2b). The overlap of the putty wrapping must be at least 20 mm. 	 <p>Figure 7: filler (A1b) plus 2 layers of putty, support tray</p>
--	---

Hilti Firestop Putty Bandage CFS-P BA must be installed with the mesh outside/upside.
 For floor applications, Hilti Firestop Putty Bandage CFS-P BA is required on the top side, only.

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 13/33
Date of Issue 2023-11-01

C.1.4 Distance Requirements

Distances valid for installations of services in wall and floor penetrations.

Minimum distances in mm (see Figure 8):

- $s_1 = 0$ (distance between cables/cable supports and vertical seal edge)
- $s_2 = 0$ (distance between cable supports)
- $s_3 = 0$ (distance between cables and upper seal edge)
- $s_4 = 0$ (distance between cable supports and bottom seal edge)
- $s_5 = 50$ (distance between cables and cable support above)
- $s_{20} - s_{23} = 0$ for $\varnothing < 16$ mm
 $= 50$ for $\varnothing > 16$ mm
 (distance between conduits/waveguides to each other or to other services or seal edges)

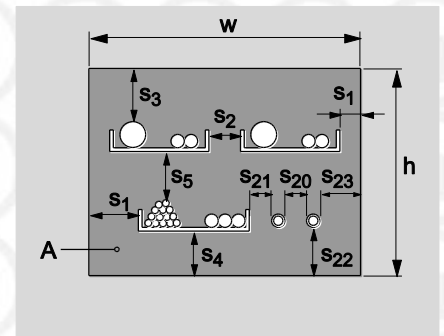


Figure 8: distances

Certification Body

UL International New Zealand Ltd,
 54 Tardale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 14/33
 Date of Issue 2023-11-01

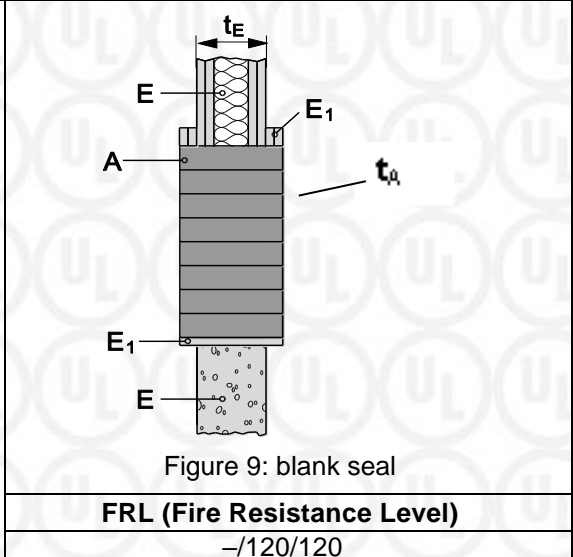
C.2 Flexible or rigid walls according to Annex C.1.1 of the certificate- minimum wall thickness 100 mm

C.2.1 Blank seal (no services) *

Maximum seal size: 1000 x 1000 mm or an area of 10 000 cm²

Construction details (for symbols and abbreviations see Annex A.3 of the certificate):

Hilti Firestop Block CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E1) according to Annex C.1.2 of the certificate.

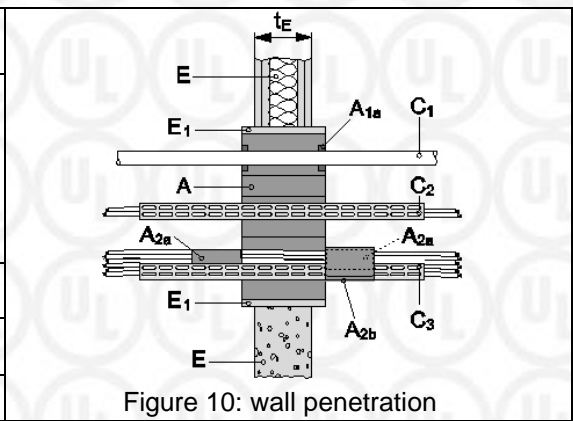


* If services are added later on in a blank seal, only the services that fulfill the required classification, listed in the tables below, may be added.

C.2.2 Penetrating services in walls – 100 mm wall thickness

Maximum seal size: 1000 x 1000 mm
 Services shall be supported at maximum distance of 250 mm from both sides of wall

Abbreviation	Description
A, A1, A2, ...	Firestop products: A Hilti Firestop Block CFS-BL A1 Hilti Firestop Filler CFS-FIL or CP 611A or CFS-IS A2 Hilti Firestop Putty Bandage CFS-P BA
C1, C2, C3	Penetrating services
E, E1, E2, ...	Separating elements
t _E	Thickness of the separating element



Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 15/33
Date of Issue 2023-11-01

Construction details (for symbols and abbreviations see Annex C.2.2 of the certificate):

Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate.

Penetrating services (C₁) with or without support tray within the seal, see Figure 10 of the certificate.

Penetrating cables (C₂, C₃) with or without support tray within the seal, see Figure 10 of the certificate.

For penetrations without support trays the following seal types apply:

- Penetration seal type 1 – blocks and filler (A_{1a}) according to Annex C.1.3.1a of the certificate
- Penetration seal type putty 1 – blocks, filler and 1 layer putty bandage, according to Annex C.1.3.2a of the certificate
- Penetration seal type putty 2 – blocks, filler and 2 layers putty bandage, according to Annex C.1.3.3a of the certificate

For penetrations with support trays the following seal types apply:

- Penetration seal type 1 – blocks and filler (A_{1b}) according to Annex C.1.3.1b of the certificate
- Penetration seal type putty 1 – blocks, filler and 1 layer putty bandage, according to Annex C.1.3.2b of the certificate
- Penetration seal type putty 2 – blocks, filler and 2 layers putty bandage, according to Annex C.1.3.1b of the certificate

C.2.2.a) Cables

– All types of cables currently and commonly used in building practice (e.g. power, control, signal, telecommunication, data, optical fibre cables, with or without cable supports)

Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
All sheathed cables:	FRL (Fire Resistance Level)		
Ø ≤ 25 mm	-/120/90	-/120/90	-/120/120
25 ≤ Ø ≤ 50 mm			
50 ≤ Ø ≤ 80 mm			
Tied cable bundle ≤ Ø 100 mm; Ø single cable ≤ 21 mm	-/120/120	-/120/120	
PVC or XLPE insulated D1 Power Cable included but not limited to Subman, TPS, SDI, Fire rated cable, security cable and earth cable with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4: 2014 Appendix D)	-/120/90	-	
PVC or XLPE insulated D2 Communication Cable included but not limited to Data cable, CAT 6, Optic fibre, with or without cable tray (Standard D2 cable set, in accordance with AS 1530.4: 2014 Appendix D)	-/120/90	-	
Non-sheathed cables (wires) Ø ≤ 24 mm	-/120/60	-/120/90	

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 16/33
 Date of Issue 2023-11-01

C.2.2.b) Small conduits and tubes			
– $\varnothing \leq 16$ mm, wall thickness ≥ 1 mm, arranged linear, with or without cables, with or without cable supports, minimum distance to each other = 0 mm			
Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
	FRL (Fire Resistance Level)		
Plastic conduits and tubes $\varnothing \leq 16$ mm	–/120/120		
Steel conduits and tubes $\varnothing \leq 16$ mm	–/120/120		

C.2.2.c) Conduits			
– Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E ₁) according to Annex C.1.2 of the certificate.			
– Conduits / tubes (C ₁) without support tray within the seal, see Figure 10 of the certificate.			
– Wall thickness of polyolefin conduits: 1.55 to 2.30 mm			
– Wall thickness of PVC conduits: 1.90 to 2.80 mm			
Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
	FRL (Fire Resistance Level)		
Plastic conduits:			
Hegler HP-EPKS $16 \leq \varnothing \leq 40$ mm Hegler HP-EPKMH $20 \leq \varnothing \leq 40$ mm Hegler HP-EL $16 \leq \varnothing \leq 20$ mm HFXP and HFX $25 \leq \varnothing \leq 32$ mm * HFIRM $32 \leq \varnothing \leq 40$ mm * FXPM $\varnothing = 20$ mm FXPYF $\varnothing = 32$ mm	–/120/120	---	---
Single plastic conduits and tubes: Rigid and flexible: PE, PP, PPE, PPO; Rigid: PVC, up to 40 mm dia filled with cables or optic fibres or empty			
Bundle $\varnothing \leq 100$ mm of rigid or flexible conduits - \varnothing of single conduits ≤ 20 mm			
* In case of conduits HFIRM ($\varnothing 40$ mm) without cables inside there is no FRL (Fire Resistance Level) available, and for conduits HFX ($\varnothing 25$ mm) FRL (Fire Resistance Level) is –/30/30			

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 17/33
Date of Issue 2023-11-01

C.2.2.d) Waveguides (coaxial)			
<ul style="list-style-type: none"> – Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E1) according to Annex C.1.2 of the certificate. – Waveguides $27.8 \text{ mm} \leq \varnothing \leq 59.9 \text{ mm}$ (C1) without support tray within the seal, see Figure 10 of the certificate. – Additional protection: 0.7 mm thick “Hilti Firestop Coating CFS-CT” over a length of 150 mm from the surface of the penetration seal on each side of the wall. 			
Penetration seal type:	Type 1 (Blocks + Filler) + Coating	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
Waveguides (coaxial):	FRL (Fire Resistance Level)		
RFS Cellflex LCF 78-50 JA \varnothing 27.8 mm RFS Cellflex LCF 214-50 J \varnothing 59.9 mm RFS Heliflex HCA 78-50 JFNA \varnothing 28.0 mm RFS Heliflex HCA 158J \varnothing 59.9 mm RFS Radialflex RLKW 78-50 \varnothing 28.5 mm RFS Radialflex RLKU 158-50 JFLA \varnothing 48.2 mm		---	-/120/120

C.2.2.e) Bus bar			
<ul style="list-style-type: none"> – Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E1) according to Annex C.1.2 of the certificate. – Bus bars (C1) with or without support tray within the seal, see Figure 10 of the certificate. 			
Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
	FRL (Fire Resistance Level)		
EAE ELEKTRIK – Type: E-Line KXC 40505-B; up to 4000A – Maximum outer dimension of the section: 372 mm x 150 mm – Conductor material: Copper – Maximum number of conductors: 10 – Maximum section of the conductors: 140 mm x 6 mm	---	---	-/120/120

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 18/33
Date of Issue 2023-11-01

C.2.2.f) Metal pipes (with insulation)			
<ul style="list-style-type: none"> – Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate. – Metal pipes (C₁), see Figure 10 of the certificate. – Metal pipes with mineral wool insulation, minimum density 85 kg/m³, minimum thickness 20 mm (up to Ø 54 mm) or 30 mm (Ø > 54 mm) – Additional insulation, mineral wool mat wrapped around the service, minimum density 85 kg/m³, minimum thickness 20 mm (up to Ø 54 mm) or 40 mm (Ø > 54 mm) over a length of 300 mm (up to Ø 54 mm) or 500 mm (Ø > 54 mm) 			
Penetration seal type:	Type 1 (Blocks + Filler) + Mineral wool	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
Mineral wool insulated metal pipes:	FRL (Fire Resistance Level)		
Copper pipes, up to Ø 54 mm, wall thickness 1.0/1.5 mm ³ – 14.2 mm ⁴ , insulation LS mineral wool, minimum length 1200 mm or CS	-/120/120	---	---
Steel pipes, up to Ø 114 mm, wall thickness 1.0/2.0 ⁵ mm – 14.2 ⁴ mm, insulation LS mineral wool, minimum length 1200 mm (up to Ø 54 mm) or 1800 mm (Ø > 54 mm), or CS	-/120/120	---	---
Steel pipes, up to Ø 159 mm, wall thickness 2.0 mm – 14.2 mm ⁴ , insulation LS mineral wool, with minimum length 1800 mm	-/120/60	---	---

³ Interpolation of minimum pipe wall thickness between 1.0 mm for diameter 28 mm and 1.5 mm for 54 mm for pipe diameters in between. The results are also valid for pipe diameters < 28 mm

⁴ 14.2 mm is the maximum value covered. This value may be limited by the particular pipe dimensions available in practice.

⁵ Interpolation of minimum pipe wall thickness between 1.0 mm for diameter 28 mm (Cu pipe) and 2.0 mm for 114 mm for pipe diameters in between. The results are also valid for pipe diameters < 28 mm

Certification Body

UL International New Zealand Ltd,
54 Tarndale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 19/33
Date of Issue 2023-11-01

<ul style="list-style-type: none"> – Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate. – Metal pipes (C₁), see Figure 10 of the certificate. – Metal pipes with flexible elastomeric foam insulation, thickness 8.5 to 43 mm. – Additional insulation, Armaflex mat wrapped around the service, thickness 19 mm, over a length of 300 mm or 500 mm 			
Penetration seal type:	Type 1 (Blocks + Filler) + Armaflex	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
Elastomeric foam insulated metal pipes:	FRL (Fire Resistance Level)		
Copper pipes, up to Ø 54 mm, wall thickness 1.0/1.5 mm ³ – 14.2 mm ⁴ , Armaflex insulation CS, thickness 8.5 – 43 mm ⁶	–/120/120	---	---
Steel pipes, up to Ø 114 mm, wall thickness 1.0/2.0 mm – 14.2 mm, Armaflex insulation CS, thickness 8.5 – 43 mm ⁷	–/120/90	---	---
<ul style="list-style-type: none"> – Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate. – Metal pipes (C₁), see Figure 10 of the certificate. – Metal pipes with flexible elastomeric foam insulation, thickness 8.5 to 43 mm. – Additional insulation, mineral wool mat wrapped around the service, minimum density 85 kg/m³, minimum thickness 40 mm over a length of 500 mm. 			
Penetration seal type:	Type 1 (Blocks + Filler) + Mineral wool	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
Elastomeric foam insulated metal pipes:	FRL (Fire Resistance Level)		
Steel pipes, Ø 159 mm, wall thickness 2.0 mm – 14.2 mm ⁴ , insulation CS Armaflex, thickness 19 mm	–/120/90	---	---
<p>The field of application given above for copper pipes is also valid for other metal pipes with lower heat conductivity than copper and a melting point of minimum 1100°C, e.g. unalloyed steel, low alloyed steel, cast iron, stainless steels, Ni alloys (NiCu, NiCr and NiMo alloys) and Ni.</p> <p>The field of application given above for steel pipes is also valid for other metal pipes with lower heat conductivity than unalloyed steel and a melting point of minimum 1100°C, e.g. low alloyed steel, cast iron, stainless steels, Ni alloys (NiCu, NiCr and NiMo alloys)</p>			

⁶ Interpolation of insulation thickness 8.5/9 mm and 38 mm for pipe diameter 28 mm and 54 mm for insulation thicknesses and pipe diameters in between.

⁷ Interpolation of insulation thickness 8.5/15 mm and 38/43 mm for pipe diameter 28 mm (Cu pipe) and 114 mm for insulation thicknesses and pipe diameters in between.

Certification Body

UL International New Zealand Ltd,
54 Tarndale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 20/33
 Date of Issue 2023-11-01

C.3 Flexible, rigid or proprietary walls according to Annex C.1.1 of the certificate- minimum wall thickness 150 mm

C.3.1 Penetrating services (single, multiple)

Construction details (for symbols and abbreviations see Annex C.2.2 of the certificate):

Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E_1) is not required for rigid and proprietary walls. For flexible wall, aperture framing or beading (E_1) according to Annex C.1.2 of the certificate.

Penetrating services (C_1) with or without support tray within the seal, see Figure 10 of the certificate.
 Penetrating cables (C_2, C_3) with or without support tray within the seal, see Figure 10 of the certificate.

For penetrations without support trays the following seal types apply:

- Penetration seal type 1 – blocks and filler (A_{1a}) according to Annex C.1.3.1a of the certificate
- Penetration seal type putty 1 – blocks, filler and 1 layer putty bandage, according to Annex C.1.3.2a of the certificate
- Penetration seal type putty 2 – blocks, filler and 2 layer putty bandage, according to Annex C.1.3.3a of the certificate

For penetrations with support trays the following seal types apply:

- Penetration seal type 1 – blocks and filler (A_{1b}) according to Annex C.1.3.1b of the certificate
- Penetration seal type putty 1 – blocks, filler and 1 layer putty bandage, according to Annex C.1.3.2b of the certificate
- Penetration seal type putty 2 – blocks, filler and 2 layers putty bandage, according to Annex C.1.3.1b of the certificate

Services shall be supported at maximum 250 mm away from both faces of wall constructions.
 Maximum seal size: 1000 x 1000 mm

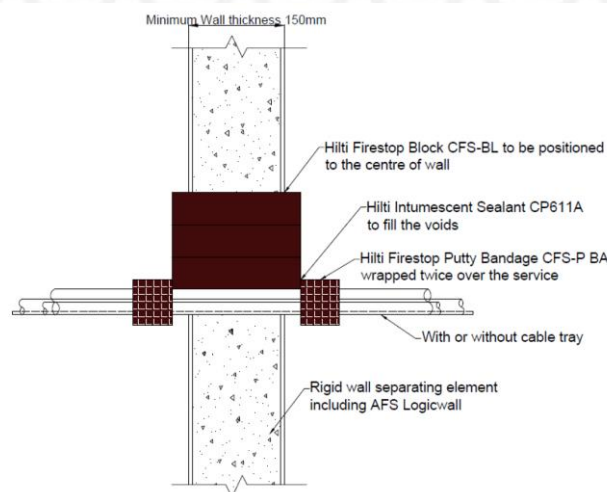


Figure 11: Service penetrations in AFS walls

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 21/33
 Date of Issue 2023-11-01

C.3.1.1 Cables			
– All types of cables currently and commonly used in building practice (e.g. power, control, signal, telecommunication, data, optical fibre cables, with or without cable supports)			
Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
All sheathed cables:	FRL (Fire Resistance Level)		
Ø ≤ 25 mm	–/120/90	–/120/120	–/120/120
25 ≤ Ø ≤ 50 mm			
50 ≤ Ø ≤ 80 mm			
Tied cable bundle ≤ Ø 100 mm; Ø single cable ≤ 21 mm	–/120/120	–/120/120	
PVC or XLPE insulated D1 Power Cable included but not limited to Submian, TPS, SDI, Fire rated cable, security cable and earth cable with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4: 2014 Appendix D	–/120/90	-	
PVC or XLPE insulated D2 Communication Cable included but not limited to Data cable, CAT 6, Optic fibre, with or without cable tray (Standard D2 cable set, in accordance with AS 1530.4: 2014 Appendix D	–/120/90	-	
Non-sheathed cables (wires) Ø ≤ 24 mm	–/120/60	–/120/90	

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 22/33
 Date of Issue 2023-11-01

C.3.1.2 Plastic pipe penetration, flexible and rigid walls at least 100 mm thick with build up to 150 mm rigid walls and 200 m for flexible walls

Sealing System	System Description	Pipe Details	FRL (Fire Resistance Level)
<ul style="list-style-type: none"> Block seal – material: Brick-shaped block based on a pre-cured, pre-formed polyurethane (PU) based firestop material - type: Hilti Firestop Blocks CFS-BL density: 270 kg/m³ (NV) – thickness: 130 mm, width: 200 mm, height: 50 mm Annular sealant – Hilti Firestop sealant CP 611A – material: graphite-based acrylic dispersion – gap width: 0.5 mm – layer thickness: 20 mm Elastomeric rubber foam insulation – brand and type: Armaflex Tube AF Microban – material: flexible elastomeric rubberlike foam PE-foam insulation - Thermaflex® ThermaCompact TF – material: polyethylene (PE) foam with low density polyethylene (LDPE) jacket – thickness: 4 mm PE-foam insulation - Thermaflex® ThermaEco FRZ – material: polyethylene (PE) foam, thickness: 13 mm Maximum seal size: 1000 x 1000 mm or an area of 10,000 cm² 	Blank seal	No services	-/120/120
	PE-100 or HDPE	Outer Ø: 50 mm Wall thickness: 3 mm Insulation: none	-/120/120
	PVC-U	Outer Ø: 50 mm Wall thickness: 1.5 mm – 2.4 mm Insulation: none	-/120/120
	PP-C	Outer Ø: 58 mm Wall thickness: 4 mm Insulation: none	-/120/120
	PE-S2	Outer Ø: 56 mm Wall thickness: 3.2 mm Insulation: none	-/120/120
	PE-RT II/AI/PE-RT II	Outer Ø: 16 mm – 40 mm Wall thickness: 2.25 mm – 3.5 mm Insulation: Armaflex Tube AF, thickness 8 mm – 20.5 mm	-/120/120
	PE-Xa	Outer Ø: 16 mm – 32 mm Wall thickness: 2.2 mm – 4.5 mm Insulation: Armaflex Tube AF, thickness 17 mm – 19.5 mm	-/120/120
	PP-MD	Outer Ø: 50 mm Wall thickness: 1.8 mm Insulation: none	-/120/120
	PE-RT II/AI/PE-RT II	Outer Ø: 16 mm – 32 mm Wall thickness: 2.25 mm – 3.0 mm Insulation: Thermaflex® ThermaCompact TF, thickness 4 mm or Thermaflex® ThermaEco FRZ, thickness 13 mm	-/120/120

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 23/33
 Date of Issue 2023-11-01

C.4 Sandwich panel partitions according to Annex C.1.1 of the certificate- minimum wall thickness 100 mm

C.4.1 Penetrating services (single, multiple)

Construction details (for symbols and abbreviations see Annex C.2.2 of the certificate):

Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the wall (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate.

For penetrations without support trays the following seal types apply:

- Penetration seal type putty 2 – blocks, filler and 2 layer putty bandage, according to Annex C.1.3.3a of the certificate

For penetrations with support trays the following seal types apply:

- Penetration seal type putty 2 – blocks, filler and 2 layers putty bandage, according to Annex C.1.3.1b of the certificate

Services shall be supported at maximum 250 mm away from both faces of wall constructions.
 Maximum seal size: 1000 x 1000 mm

C.4.1.1 Cables

- All types of cables currently and commonly used in building practice (e.g. power, control, signal, telecommunication, data, optical fibre cables, with or without cable supports)
- Penetrating cables (C₂) without support tray within the seal, see Figure 10 of the certificate.

Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
All sheathed cables:	FRL (Fire Resistance Level)		
Ø ≤ 25 mm	---	---	-/120/90
25 ≤ Ø ≤ 50 mm			
50 ≤ Ø ≤ 80 mm			
Tied cable bundle ≤ Ø 100 mm			

C.4.1.2 Small conduits and tubes

- Ø ≤ 16 mm, wall thickness ≥ 1 mm, arranged linear, with or without cables, with or without cable supports, minimum distance to each other = 0 mm
- Penetrating services (C₁) with or without support tray within the seal, see Figure 10 of the certificate.

Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
	FRL (Fire Resistance Level)		
Plastic conduits and tubes Ø ≤ 16 mm	---	---	-/120/90
Steel conduits and tubes Ø ≤ 16 mm			

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 24/33
Date of Issue 2023-11-01

C.4.1.3 Bus bar			
– Bus bars (C ₁) with or without support tray within the seal, see Figure 10 of the certificate.			
Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
	FRL (Fire Resistance Level)		
EAE ELEKTRIK – Type: E-Line KXC 40505-B; up to 4000A – Maximum outer dimension of the section: 372 mm x 150 mm – Conductor material: Copper – Maximum number of conductors: 10 – Maximum section of the conductors: 140 mm x 6 mm	---	---	–/120/90

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 25/33
 Date of Issue 2023-11-01

C.5 Rigid floors according to Annex C.1.1 of the certificate- minimum floor thickness 150 mm

C.5.1 Blank seal (no services) *

Maximum seal size: 1000 x 700 mm or an area of 7000 cm²

Construction details (for symbols and abbreviations see Annex A.3 of the certificate):

Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, flush with the soffit of the floor (E); aperture framing or beading (E_1) according to Annex C.1.2 of the certificate.
 Additional support construction for large seal size: metal band of 30 mm width and of 2 mm thickness.

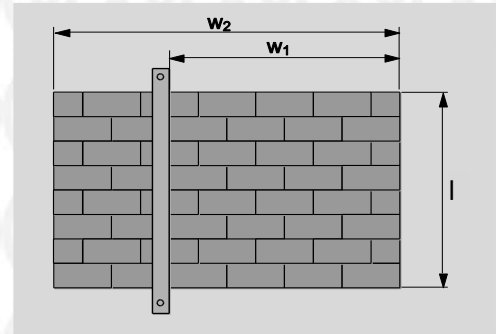


Figure 11: blank seal in floors

Blank seal measurements in floors:

without support construction ($w_2 \times l$): 1000 x 700 mm

with support construction ($w_2 \times l$): 1000 x 700 mm

without support construction ($w_1 \times l$): 500 x 700 mm

FRL (Fire Resistance Level)

-/60/60

-/120/120

* If services are added later on in a blank seal only the services listed in the tables below may be added that fulfill the required FRL (Fire Resistance Level).

C.5.2 Penetrating services in floors – 150 mm floor thickness

For floor installation maximum distance of 1st service support: 230 mm.

Abbreviation	Description
A, A ₁ , A ₂ , ...	Firestop products: A Hilti Firestop Block CFS-BL A ₁ Hilti Firestop Filler CFS-FIL A ₂ Hilti Firestop Putty Bandage CFS-P BA
C, C ₁ , C ₂ , ...	Penetrating services
E, E ₁ , E ₂ , ...	Separating elements
t _E	Thickness of the building element

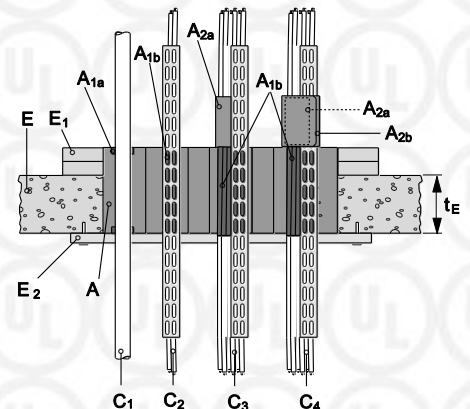


Figure 12: floor penetration

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 26/33
Date of Issue 2023-11-01

Construction details (for symbols and abbreviations see Annex C.5.2 of the certificate):

Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, flush with the soffit of the floor (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate.

Penetrating services (C₁) with or without support tray within the seal, see Figure 12 of the certificate.

Penetrating cables (C₂, C₃, C₄) with or without support tray within the seal, see Figure 12 of the certificate.

For penetrations without support trays the following seal types apply:

- Penetration seal type 1 – blocks and filler (A_{1a}) according to Annex C.1.3.1a of the certificate
- Penetration seal type putty 1 – blocks, filler and 1 layer putty bandage, according to Annex C.1.3.2a of the certificate– on the top side only
- Penetration seal type putty 2 – blocks, filler and 2 layers putty bandage, according to Annex C.1.3.3a of the certificate– on the top side only

For penetrations with support trays the following seal types apply:

- Penetration seal type 1 – blocks and filler (A_{1b}) according to Annex C.1.3.1b of the certificate
- Penetration seal type putty 1 – blocks, filler and 1 layer putty bandage, according to Annex C.1.3.2b of the certificate– on the top side only
- Penetration seal type putty 2 – blocks, filler and 2 layers putty bandage, according to Annex C.1.3.1b of the certificate– on the top side only

C.5.2.a) Cables

– All types of cables currently and commonly used in building practice (e.g. power, control, signal, telecommunication, data, optical fibre cables, with or without cable supports)

Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
All sheathed cables:	FRL (Fire Resistance Level)		
Ø ≤ 25 mm	–/120/90	–/120/90	–/120/120
25 ≤ Ø ≤ 50 mm			
50 ≤ Ø ≤ 80 mm			
PVC or XLPE insulated D1 Power Cable included but not limited to Submian, TPS, SDI, Fire rated cable, security cable and earth cable with or without cable tray (Standard D1 cable set, in accordance with AS 1530.4: 2014 Appendix D	–/120/90	-	–/120/120
PVC or XLPE insulated D2 Communication Cable included but not limited to Data cable, CAT 6, Optic fibre, with or without cable tray (Standard D2 cable set, in accordance with AS 1530.4: 2014 Appendix D	–/120/90	-	
Tied cable bundle ≤ Ø 100 mm; Ø single cable ≤ 21 mm	–/120/120	–/120/120	
Non-sheathed cables (wires) Ø ≤ 17 mm	–/120/90	–/120/90	
Non-sheathed cables (wires) Ø ≤ 24 mm	–/120/90	–/120/60	

Certification Body

UL International New Zealand Ltd,
54 Tarndale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 27/33
 Date of Issue 2023-11-01

C.5.2.b) Small conduits and tubes			
<ul style="list-style-type: none"> – $\varnothing \leq 16$ mm, wall thickness ≥ 1 mm, arranged linear, with or without cables, with or without cable supports, minimum distance to each other = 0 mm – Penetrating services (C₁) with or without support tray within the seal, see Figure 12 of the certificate 			
Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
	FRL (Fire Resistance Level)		
Plastic conduits and tubes $\varnothing \leq 16$ mm	-/120/120	---	---
Steel conduits and tubes $\varnothing \leq 16$ mm	-/120/120	---	---
Single plastic conduits and tubes: Rigid and flexible: PE, PP, PPE, PPO; Rigid: PVC, up to 40 mm dia filled with cables or optic fibres or empty	-/120/120	---	---
Bundle $\varnothing \leq 100$ mm of rigid or flexible conduits - \varnothing of single conduits ≤ 20 mm	-/120/120	---	---

C.5.2.c) Waveguides (coaxial)			
<ul style="list-style-type: none"> – Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, centered regarding the thickness of the floor (E); aperture framing or beading (E1) according to Annex C.1.2 of the certificate. – Waveguides 27.8 mm $\leq \varnothing \leq 59.9$ mm (C₁) without support tray within the seal, see Figure 12 of the certificate. – Additional protection: 0.7 mm thick “Hilti Firestop Coating CFS-CT” over a length of 150 mm from the surface of the penetration seal on each side of the floor. 			
Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
	FRL (Fire Resistance Level)		
Waveguides (coaxial):			
RFS Cellflex LCF 78-50 JA $\varnothing 27.8$ mm RFS Cellflex LCF 214-50 J $\varnothing 59.9$ mm RFS Heliflex HCA 78-50 JFNA $\varnothing 28.0$ mm RFS Heliflex HCA 158J $\varnothing 59.9$ mm RFS Radialflex RLKW 78-50 $\varnothing 28.5$ mm RFS Radialflex RLKU 158-50 JFLA $\varnothing 48.2$ mm	---	---	-/120/120

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 28/33
Date of Issue 2023-11-01

C.5.2.d) Metal pipes (with insulation)			
<ul style="list-style-type: none"> – Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, flush with the soffit of the floor (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate. – Metal pipes (C₁), see Figure 12 of the certificate. – Metal pipes with mineral wool insulation, minimum density 85 kg/m³, minimum thickness 20 mm (up to Ø 54 mm) or 30 mm (Ø > 54 mm) – Additional insulation, mineral wool mat wrapped around the service, minimum density 85 kg/m³, minimum thickness 20 mm (up to Ø 54 mm) or 40 mm (Ø > 54 mm) over a length of 300 mm (up to Ø 54 mm) or 500 mm (Ø > 54 mm) 			
Penetration seal type:	Type 1 (Blocks + Filler) + Mineral wool	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
Mineral wool insulated metal pipes:	FRL (Fire Resistance Level)		
Copper pipes, up to Ø 54 mm, wall thickness 1.0/1.5 mm ⁸ – 14.2 mm ⁴ , insulation CS mineral wool	–/120/120	---	---
Steel pipes, up to Ø 159 mm, wall thickness 1.0/2.0 mm ⁹ – 14.2 mm ² , insulation LS mineral wool, minimum length 1200 mm (up to Ø 54 mm) or 1800 mm (Ø > 54 mm), or CS	–/120/120	---	---

⁸ Interpolation of minimum pipe wall thickness between 1.0 mm for diameter 28 mm and 1.5 mm for 54 mm for pipe diameters in between. The results are also valid for pipe diameters < 28 mm

⁹ Minimum pipe wall thickness between 1.0 mm for diameter 28 – 54 mm (Cu pipe) and 2.0 mm for pipe diameters up to 159 mm. The results are also valid for pipe diameters < 28 mm

<ul style="list-style-type: none"> – Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, flush with the soffit of the floor (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate. – Metal pipes (C₁), see Figure 12 of the certificate. – Metal pipes with flexible elastomeric foam insulation, thickness 8.5 to 43 mm. – Additional insulation, Armaflex mat wrapped around the service, thickness 19 mm, over a length of 300 mm or 500 mm 			
Penetration seal type:	Type 1 (Blocks + Filler) + Armaflex	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
Elastomeric foam insulated metal pipes:	FRL (Fire Resistance Level)		
Copper pipes, up to Ø 54 mm, wall thickness 1.0/1.5 mm ³ – 14.2 mm ⁴ , Armaflex insulation CS, thickness 8.5 – 43 mm ⁶	–/120/120	---	---
The field of application given above is also valid for other metal pipes with lower heat conductivity than copper and a melting point of minimum 1100°C, e.g. unalloyed steel, low alloyed steel, cast iron, stainless steels, Ni alloys (NiCu, NiCr and NiMo alloys) and Ni.			

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 29/33
Date of Issue 2023-11-01

- Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, flush with the soffit of the floor (E); aperture framing or beading (E₁) according to Annex C.1.2 of the certificate.
- Metal pipes (C₁), see Figure 12 of the certificate.
- Metal pipes with flexible elastomeric foam insulation, thickness 8.5 to 43 mm.
- Additional insulation, mineral wool mat wrapped around the service, thickness 30 mm, over a length of 500 mm

Penetration seal type:	Type 1 (Blocks + Filler + Mineral wool)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty)
Elastomeric foam insulated metal pipes:	FRL (Fire Resistance Level)		
Steel pipes, up to Ø 159 mm, wall thickness 2.0 mm – 14.2 mm ⁴ , insulation CS mineral wool, thickness 30 mm or more	-/120/120	---	---
The field of application given above is also valid for other metal pipes with lower heat conductivity than unalloyed steel and a melting point of minimum 1100°C, e.g. low alloyed steel, cast iron, stainless steels, Ni alloys (NiCu, NiCr and NiMo alloys)			

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 30/33
Date of Issue 2023-11-01

- Hilti Firestop Blocks CFS-BL (A) of thickness $t_A \geq 200$ mm, flush with the soffit of the floor (E); aperture framing or beading (E1) according to Annex C.1.2 of the certificate.
- Metal pipes (C1), see Figure 12 of the certificate.
- Metal pipes with flexible elastomeric foam insulation, thickness 8.5 to 43 mm.
- Additional insulation, mineral wool mat wrapped around the service, minimum density 85 kg/m^3 , minimum thickness 20 mm (up to $\varnothing 114$ mm) or 40 mm ($\varnothing > 114$ mm) over a length of 300 mm (up to $\varnothing 114$ mm) or 500 mm ($\varnothing > 114$ mm)
- Additional protection, 2 layer of Hilti Firestop Putty Bandage CFS-B (A₂) is wrapped around the tube with insulation.

Penetration seal type:	Type 1 (Blocks + Filler)	Type Putty 1 (Blocks, Filler + 1x Putty)	Type Putty 2 (Blocks, Filler + 2x Putty) + Mineral wool
Elastomeric foam insulated metal pipes:	FRL (Fire Resistance Level)		
Steel pipes, up to $\varnothing 114$ mm, wall thickness 1.0/2.0 mm ⁵ – 14.2 mm ⁴ , insulation CS Armaflex, thickness 15 – 43 mm	---	---	-/120/90
Steel pipes, $\varnothing 114$ – 159 mm, wall thickness 2.0 mm – 14.2 mm ⁴ , insulation CS Armaflex, thickness 15 – 19 mm ¹⁰	---	---	-/120/90
Steel pipes, $\varnothing 114$ mm, wall thickness 2,0 mm – 14.2 mm ⁴ , insulation CS Armaflex, thickness 15 – 43 mm ⁶	---	---	-/120/90
Steel pipes, $\varnothing 114$ mm, wall thickness 2,0 mm – 14.2 mm ⁴ , insulation CS Armaflex, thickness 43 mm	---	---	-/120/120
Steel pipes, $\varnothing 159$ mm, wall thickness 2,0 mm – 14.2 mm ⁴ , insulation CS Armaflex, thickness 19 mm	---	---	-/120/120
The field of application given above is also valid for other metal pipes with lower heat conductivity than unalloyed steel and a melting point of minimum 1100°C, e.g. low alloyed steel, cast iron, stainless steels, Ni alloys (NiCu, NiCr and NiMo alloys)			

¹⁰ Interpolation of insulation thickness 15 mm and 19 mm for pipe diameter 114 mm and 159 mm for insulation thicknesses and pipe diameters in between.

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 31/33
 Date of Issue 2023-11-01

C.6 Combination of Hilti Firestop Block CFS-BL with other Hilti Firestop products

Hilti Firestop Block CFS-BL may be combined with other Hilti Firestop products. In cases where services are only running through the area of products used in addition, the certificate specifications of this product have to be followed.

Hilti Firestop Foam CFS-F FX	<p>a) Hilti Firestop Foam CFS-F FX is used in area without services as gap filling of upper space of penetration where otherwise a Hilti Firestop Block CFS-BL has to be cut to close the aperture of the penetration seal. Blank seal with a seal depth of 200 mm is FRL (Fire Resistance Level) -/120/120.</p> <p>b) Service penetrations within foam penetration seal– maximum size of foam area 400x400 mm:</p> <ul style="list-style-type: none"> • Hilti Firestop Blocks CFS-BL are installed in the aperture partially for e.g. in the lower part only or • building a frame. This frame can be built also after applying the foam, around the foam seal. • Services running through the opening or the block frame are sealed with Hilti Firestop Foam CFS-F FX • Distance rules are applied to seal frames (no block in between) or to block frame to aperture frame or services.
Hilti Firestop Plug CFS-PL Ø 110 within a plastic sleeve	<p>Hilti Firestop Plug CFS-PL Ø 110 can be used in a wall or floor penetration sealed by Hilti Firestop Blocks CFS-BL.</p> <ul style="list-style-type: none"> • The plug has to be placed in a PVC pipe sleeve (wall thickness of pipe: 2 to 6 mm) of 200 mm in length, installed flush with the block seal. • The distances to other services or edges are at least 50 mm. • The sleeve is closed by Hilti Firestop Plug CFS-PL Ø 110 on each side.

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
 Page 32/33
 Date of Issue 2023-11-01

Appendix B

Test report details – report reference.

Name of Test Institute	Owner	Number of Report	Date of Test	Test standard
EFFECTIS France	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	08-E-079-F date 11.08.2008	13/03/2008	prEN 1366-3: 2006
EFFECTIS France	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	07-E-317 date 10.04.2008	11/10/2007	prEN 1366-3: 2006
AFITI LICOF Centre for Fire Testing and Research	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	Nr 8686/12 date 23.07.2012	28/03/2012	EN 1366-3: 2009
AFITI LICOF Centre for Fire Testing and Research	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	Nr 8717/12 date 03.08.2012	09/05/2012	EN 1366-3: 2009
AFITI LICOF Centre for Fire Testing and Research	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	Nr 8718/12 date 29.10.2012	23/05/2012	EN 1366-3: 2009
AFITI LICOF Centre for Fire Testing and Research	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	Nr 8688/12 date 29.10.2012	19/04/2012	EN 1366-3: 2009
CSIRO – Manufacturing and Infrastructure Technology	HILTI (Aust.) Pty Ltd 23 Egerton Road, Silverwater NSW Australia	FSV 0917 date 30/09/2002	31/08/2002	AS1530.4-1997
CSIRO – Manufacturing and Infrastructure Technology	HILTI (Aust.) Pty Ltd 23 Egerton Road, Silverwater NSW Australia	FSV 0857 date 04/09/2001	15/06/2001	AS1530.4-1997
WFRGENT nv	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	19928A, date 05.02.2015	10/04/2020	EN 1366-3: 2009
WFRGENT nv	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	19929A, date 10.04.2020	15/10/2019	EN 1366-3: 2009
WFRGENT nv	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	19691A, date 24.04.2020	27/05/2019	EN 1366-3: 2009
WFRGENT nv	HILTI (Aust.) Pty Ltd P.O. Box 3217, Rhodes NSW 2138 Australia	FRT190130, date 31.07.2019	11.07.2019	AS1530.4-2014
WFRGENT nv	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	19692A, date 24.04.2020	28/05/2019	EN 1366-3: 2009
WFRGENT nv	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	19930A, date 10.04.2020	15/10/2019	EN 1366-3: 2009

Certification Body

UL International New Zealand Ltd,
 54 Tarndale Grove, Albany,
 Auckland 0632, New Zealand.
 +64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>



APPENDIX - UL-AU CERTIFICATE

Certificate No. UL-AU-230001
Page 33/33
Date of Issue 2023-11-01

Name of Test Institute	Owner	Number of Report	Date of Test	Test standard
WFRGENT nv	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	21500A, date 05.04.2022	22/10/2021	EN 1366-3: 2009
IBS – Institut für Brandschutztechnik und Sicherheitsforschung Gesellschaft m.b.H.	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	320040703-5, date 27.01.2021	16/09/2020	EN 1366-3: 2009
WFRGENT nv	HILTI AG Feldkircher Str. 100 LI-9494 Schaan	18322A, date 13.06.2017	04/04/2017	EN 1366-3: 2009
MFPA Leipzig GmbH	Hilti Entwicklungsgesellschaft GmbH Hiltistraße 6, 86916 Kaufering, Germany	PB 3.2/17-163-1, date 03.11.2017	15/02/2018	EN 1366-3: 2009
MFPA Leipzig GmbH	Hilti Entwicklungsgesellschaft GmbH Hiltistraße 6, 86916 Kaufering, Germany	PB 3.2/17-163-2, date 23.11.2017	15/02/2018	EN 1366-3: 2009

Certification Body

UL International New Zealand Ltd,
54 Tarndale Grove, Albany,
Auckland 0632, New Zealand.
+64 9 415 3355, customerservice.anz@ul.com,
<http://newzealand.ul.com>

