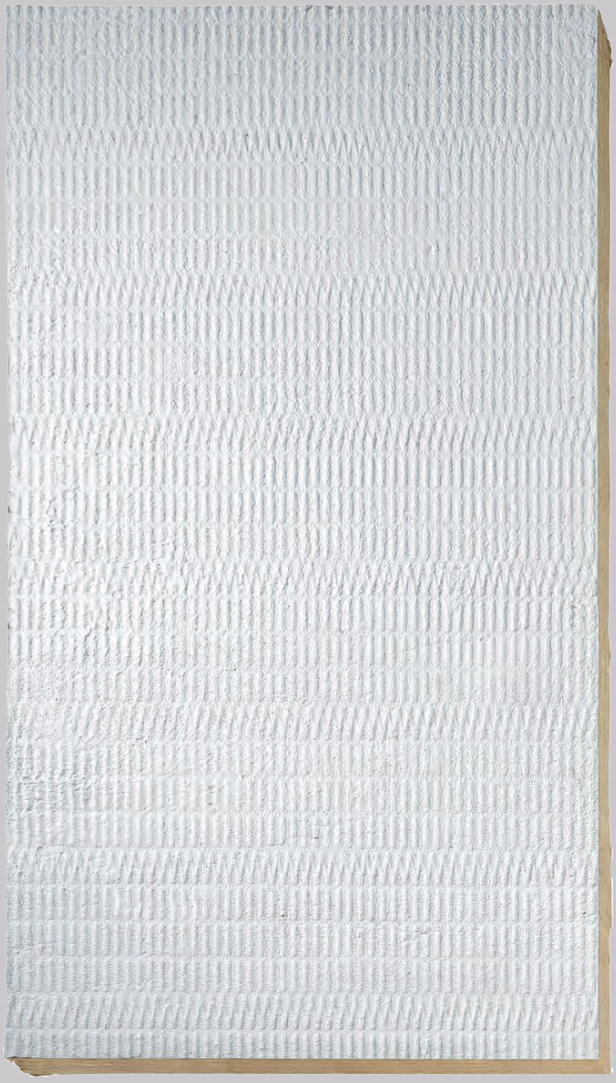
COATED BOARD CFS-CT B

Technical Drawings

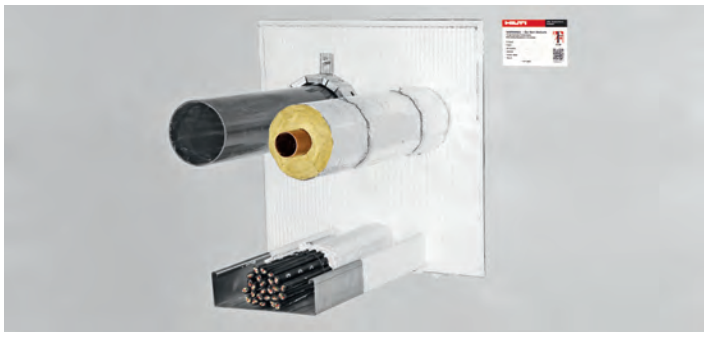
European Technical Assesment
ETA-11/0429



September 2024

CONTENT

FIRESTOP COATING CFS-CT



Advantages

- EN testing for wide range of applications
- Single-layer coating – provides labor savings over multilayer coatings
- Dry film thickness 0.7 mm – up to 30% material savings compared to multilayer coatings
- Paintable, even on rough surfaces
- Flexible coating dries quickly to form an elastic protective layer

Technical Data

Color	White
Approx. Curing time	1 mm/day
Storage temperature	–5 – +30 °C
Application temperature	+5 – +40 °C
Temperature resistance	–40 – +100 °C
Shelf life	15 months
Can be painted	Yes

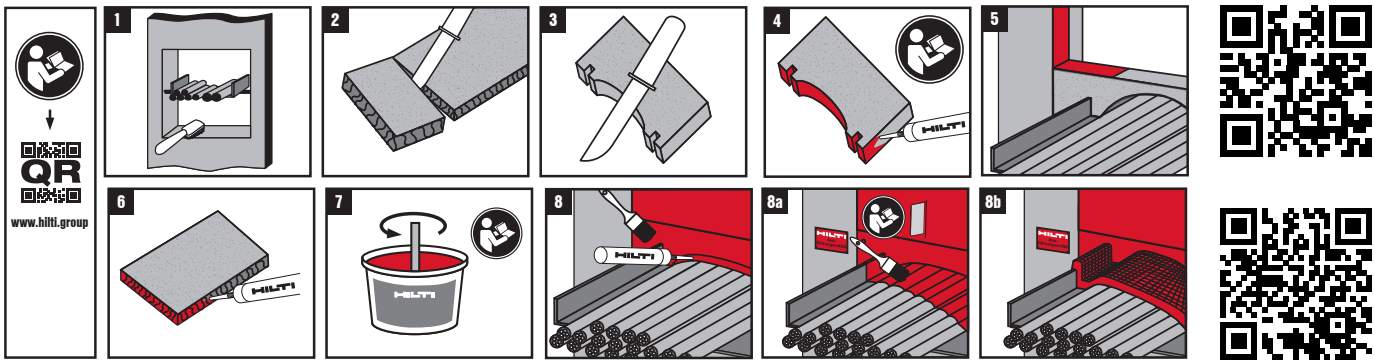
Applications

- Mixed penetrations in flexible and rigid walls from 100 mm and rigid floors from 150 mm
- Cables, cable bundles, cable trays and cable conduits
- Non-combustible (metal) pipes with non-combustible insulation
- Non-combustible (metal) and composite pipes with combustible insulation in combination with Firestop Bandage CFS-B or Firestop Collar CFS-C P
- Combustible pipes in combination with firestop collars CFC-C P or CFS-C or Firestop Wrap CFS-W
- Suitable for use with a wide variety of mineral wool boards

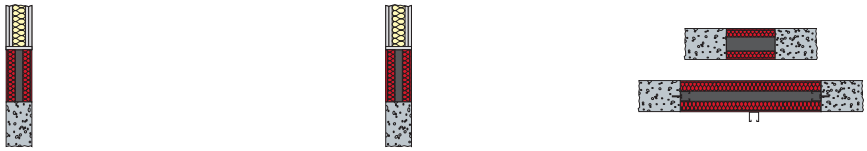
Product	Packaging	Content	Item Number
Firestop Coating CFS-CT, 18 kg, white	Pail	18 kg	2036607
Firestop Coating CFS-CT, 6 kg, white	Pail	6 kg	2036605
Firestop Acrylic Sealant CFS-S ACR CW, white	Cartridge	310 ml	435859
Firestop Board CFS-CT B 1S, white, 1200 mm × 600 mm × 50 mm	Cardboard box	5 boards	2383882
Firestop Board CFS-CT B 1S, white, 1200 mm × 600 mm × 50 mm	Cardboard box	20 boards	2383881
Firestop Board CFS-CT B 1S, white, 1200 mm × 600 mm × 50 mm	Pallet	40 boards	2383880

INSTALLATION INSTRUCTIONS

Consumption guide
Coating CFS-CT: dry film thickness of 0.7 mm (equivalent to wet film thickness of 1.1 mm): at least 1.6 kg coating per square meter.



GENERAL INFORMATION



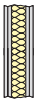
Partition	Flexible Wall	Rigid Wall	Rigid Floor
Base material thickness (t_E)	≥ 100 mm	≥ 100 mm	≥ 150 mm
Seal thickness	≥ 100 mm		≥ 150 mm
Max. opening size	1200 mm × 1800 mm (blank seal: EI 120) 4000 mm × 800 mm (blank seal: EI 90)		600 mm × 1000 mm (blank seal: EI 120) 1200 mm × 1500 mm (reinforced) (blank seal: EI 90)
Gap filler	CFS-S ACR		
Penetration	Single cable and cable bundles, cable trays, small steel and plastic conduits, insulated steel and copper pipes (with mineral wool and foamed elastomeric insulation), plastic pipes (with and without foamed elastomeric insulation), aluminum composite pipes with foamed elastomeric insulation		

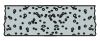
RELATED ITEMS

Product	Packaging	Content	Item Number
Firestop Collar CFS-C 50/1.5"	Plastic bag	1 collar + 2 hooks	435417
Firestop Collar CFS-C 63/2"	Plastic bag	1 collar + 2 hooks	435418
Firestop Collar CFS-C 75/2.5"	Plastic bag	1 collar + 3 hooks	435419
Firestop Collar CFS-C 90/3"	Plastic bag	1 collar + 3 hooks	435420
Firestop Collar CFS-C 110/4"	Plastic bag	1 collar + 4 hooks	435421
Firestop Collar CFS-C 125/5"	Plastic bag	1 collar + 4 hooks	435422
Firestop Collar CFS-C 160/6"	Plastic bag	1 collar + 4 hooks	435423
Firestop Collar CFS-C P 50/1.5"	Plastic bag	1 collar + 2 hooks	435406
Firestop Collar CFS-C P 63/2"	Plastic bag	1 collar + 2 hooks	435407
Firestop Collar CFS-C P 75/2.5"	Plastic bag	1 collar + 3 hooks	435408
Firestop Collar CFS-C P 90/3"	Plastic bag	1 collar + 3 hooks	435409
Firestop Collar CFS-C P 110/4"	Plastic bag	1 collar + 4 hooks	435410
Firestop Collar CFS-C P 125/5"	Plastic bag	1 collar + 4 hooks	435411
Firestop Collar CFS-C P 160/6"	Plastic bag	1 collar + 6 hooks	435412
Firestop Collar CFS-C P 180/7"	Plastic bag	1 collar + 8 hooks	435413
Firestop Collar CFS-C P 200/8"	Plastic bag	1 collar + 8 hooks	435414
Firestop Collar CFS-C P 225/9"	Plastic bag	1 collar + 10 hooks	435415
Firestop Collar CFS-C P 250/10"	Plastic bag	1 collar + 12 hooks	435416

Product	Packaging	Content	Item Number
Firestop Collar Endless CFS-C EL, 2580 mm × 52 mm × 5.6 mm	Cardboard box	2.58 m	2075120
Firestop Bandage CFS-B, 10000 mm × 125 mm × 2 mm	Cardboard box	10 m	429557
Firestop Wrap Strip CFS-W SG 50/1.5", 169 mm × 45 mm × 4.5 mm	Cardboard box	2 wrap strips	429549
Firestop Wrap Strip CFS-W SG 63/2", 210 mm × 45 mm × 4.5 mm	Cardboard box	2 wrap strips	429550
Firestop Wrap Strip CFS-W SG 75/2.5", 249 mm × 45 mm × 4.5 mm	Cardboard box	2 wrap strips	429551
Firestop Wrap Strip CFS-W SG 90/3", 311 mm × 45 mm × 9 mm	Cardboard box	2 wrap strips	429552
Firestop Wrap Strip CFS-W SG 110/4", 370 mm × 45 mm × 9 mm	Cardboard box	2 wrap strips	429553
Firestop Wrap Strip CFS-W SG 125/5", 421 mm × 45 mm × 9 mm	Cardboard box	2 wrap strips	429554
Firestop Wrap Strip CFS-W SG 160/6", 543 mm × 45 mm × 13.5 mm	Cardboard box	2 wrap strips	429555
Firestop Wrap Strip CFS-W EL W45/1.8", 10000 mm × 45 mm × 4.5 mm	Cardboard box	1 wrap strips	429556
Firestop Wrap Strip CFS-W P, 10000 mm × 50 mm × 2 mm	Cardboard box	10 m	2133384
Firestop Sleeve CFS-SL GA M	Cardboard box	1 pc.	2178493

MAIN APPROVED APPLICATIONS





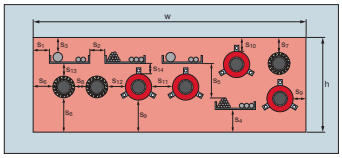
Penetration: cables	Cable Ø mm	Flexible wall	Rigid wall	Rigid floor
All sheathed cables	≤ 80	EI 90 with additional protection of 2 mm CFS-CT coating (200 mm length on both sides) EI 120 with additional protection of 30 mm mineral wool mat, Al-facing outside (200 mm length on both sides)		EI 120 with additional protection of 30 mm mineral wool mat, Al-facing outside (200 mm length on both sides)
Tied cables* bundles Ø 100 mm	≤ 21	EI 120 with additional protection of 30 mm mineral wool mat, Al-facing outside (200 mm length on both sides)		
Non-sheathed cables	≤ 24	EI 120 with additional protection of 20 mm mineral wool mat, Al-facing outside (200 mm length on both sides)		EI 60 with additional protection of 1 mm CFS-CT coating (200 mm length on both sides)
Penetration: conduits	**Conduit Ø mm**	**Flexible wall**	**Rigid wall**	**Rigid floor**
Plastic conduits and tubes with or without cables	≤ 16	EI 120-U/U with additional protection of 30 mm mineral wool mat, Al-facing outside (200 mm length on both sides)		EI 90-U/U with additional protection of 30 mm mineral wool mat, Al-facing outside (200 mm length on both sides)
Steel conduits and tubes with or without cables	≤ 16			EI 90-C/U with additional protection of 30 mm mineral wool mat, Al-facing outside (200 mm length on both sides)

Excerpt of ETA document. Check the exact field of application for each penetration (type, diameter) in the ETA 11/0429 document.
For wall installation, maximum distance of 1st service support is 250 mm.
For floor installation, maximum distance of 1st service support is 100 mm.

No penetration	Max. opening size (mm)	Flexible walls	Rigid walls	Rigid floors
Blank seal – wall	1200 x 1800	EI 120	EI 120	–
Blank seal – rigid wall ≥ 250 mm thick	1200 x 2000	–	EI 90	–
Blank seal – rigid wall ≥ 250 mm thick	4000 x 800	–	EI 90	–
Blank seal – floor	600 x 1000	–	–	EI 180
Blank seal – floor with support	1200 x 1500	–	–	EI 90

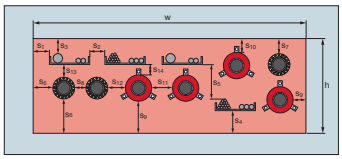
OTHER APPROVED APPLICATIONS

Distance requirements for walls



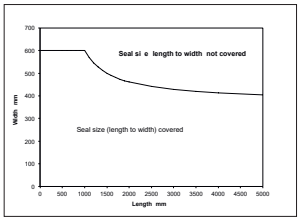
Minimum distance between services and edges is 0 mm, except:
- 50 mm between cables and cable supports above them (s_5)
- 3 mm between metal pipes and seal edge (s_6) and upper seal edge (s_7), respectively
- 17 mm between plastic pipes/pipe closure device and seal edge (s_9) and upper seal edge (s_{10}), respectively
- 30 mm between metal pipes and plastic pipes/pipe closure device (s_{12})
- 3 mm between cables/cable supports and metal pipes
- 40 mm between cables/cable supports and plastic pipes/pipe closure device

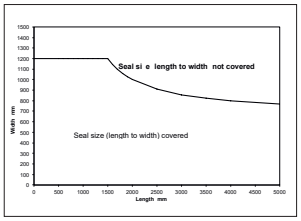
Distance requirements for floors



Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s_5)
- 10 mm between metal pipes and seal edge (s_6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes/pipe closure device (s_{12})
- 30 mm between cables/cable supports and metal pipes
- 32 mm between cables/cable supports and plastic pipes/pipe closure device

Maximum seal size for floors



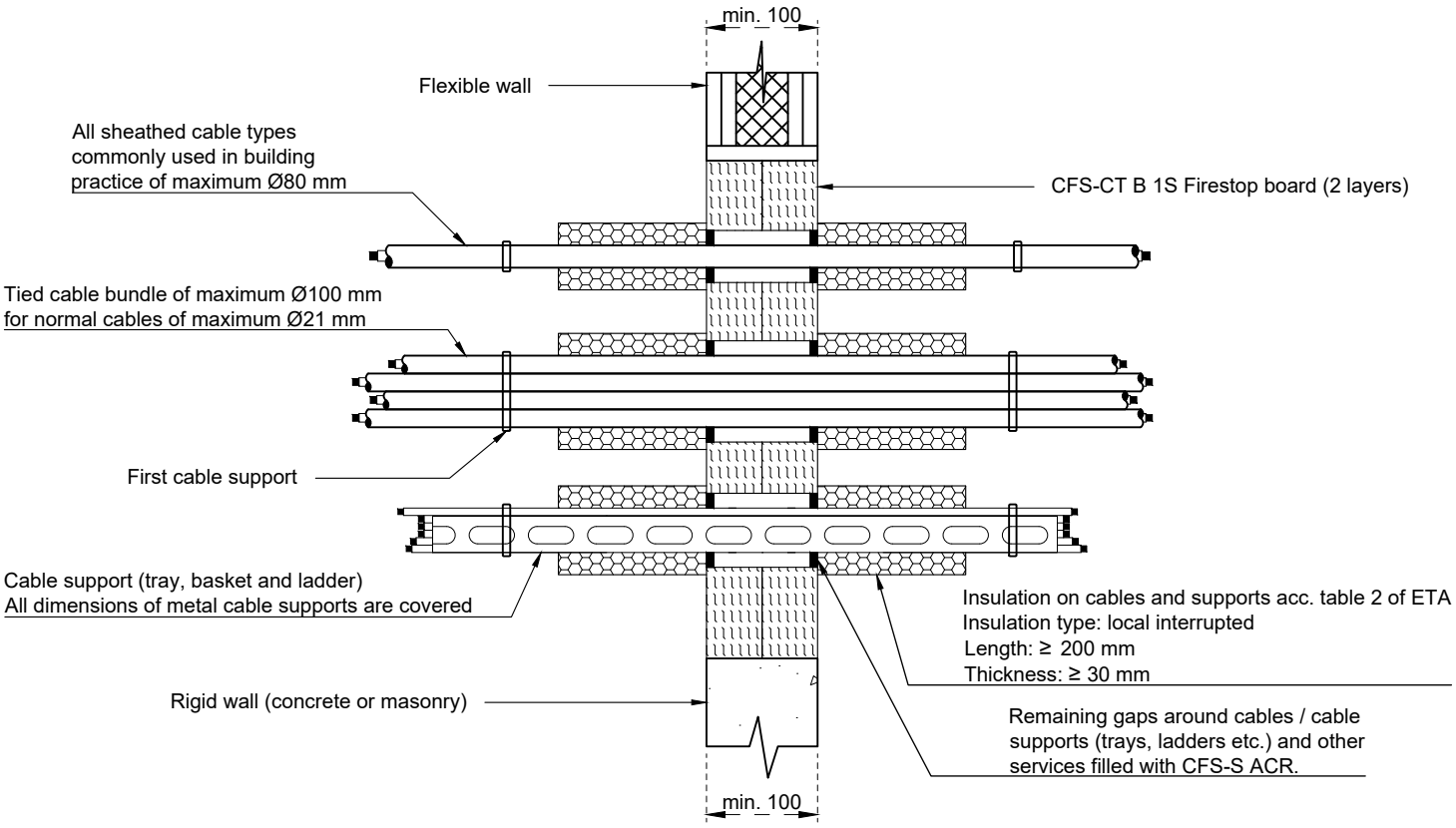


Metal pipes with mineral wool insulation	Copper pipes up to Ø 88.9 mm, Steel pipes up to Ø 323.9 mm
Metal pipes with foamed elastomeric insulation with Firestop Bandage CFS-B	Copper pipes up to Ø 88.9 mm, Steel pipes up to Ø 159.0 mm
Plastic pipes with Firestop Collar CFS-C and CFS-C P	Plastic pipes up to diameter Ø 160 mm
Plastic pipes with Firestop Wrap CFS-C W	Plastic pipes up to diameter Ø 125 mm
Plastic pipes with Firestop Collar Endless CFS-C EL	Plastic pipes up to diameter Ø 110 mm
Aluminum composite pipes with mineral wool insulation	Aluminum composite pipes up to diameter Ø 75 mm
Aluminum composite pipes with foamed elastomeric insulation with Firestop Collar CFS-C P	Aluminum composite pipes up to diameter Ø 63 mm
Aluminum composite pipes with foamed elastomeric insulation with Firestop Collar CFS-C P	Aluminum composite pipes up to diameter Ø 63 mm
Aluminum composite pipes with foamed elastomeric insulation with Firestop Bandage CFS-B	Aluminum composite pipes up to diameter Ø 63 mm
Cables with Firestop Sleeve CFS-SL M	All sheathed cables up to Ø 21 mm

CHARACTERISTICS OF CFS-CT

Characteristics	Assessment of characteristics	Norm, standard, test
Air permeability	Tested for gas permeability using air, nitrogen (N_2), carbon dioxide (CO_2) and methane (CH_4). See ETA 11/0429 for detailed results.	EN 1026
Water permeability	Watertight to 1000 mm head of water or 9806 Pa. for 0.7 mm dry film thickness.	ETAG 026-2
Health and the environment Dangerous substances	Below any respective occupational exposure limits as far as such limits exist (compared with the list of dangerous substances of the European Commission)	Material safety data sheet
Protection against noise Airborne sound insulation	Detailed test results, see ETA 11/0429.	EN ISO 140-3 EN ISO 20140-10 EN ISO 717-1
Safety in use Mechanical resistance and stability Resistance to impact/movement	Highest risk zone type has been fulfilled (Type IV) **Safety in use:** Soft body impact: energy 500 Nm. Hard body impact: energy 10 Nm **Serviceability:** Soft body impact: energy 120 Nm. Hard body impact: energy 6 Nm. Maximum dimension of the penetration seal is 1.0 × 1.5 m. In case of horizontal penetrations, precautions have to be taken to prevent a person stepping onto the penetration seal.	EOTA Technical Report TR001: A1
Adhesion	It is assumed that verification of adequate adhesion is covered by the impact test (see above).	
Thermal properties	CFS-CT B 1S: λ_{10} = 0.039 W/mK. Insulation performance of mineral wool slab slightly reduced by the coating.	EN 12667
Durability and servicability	Category Y_2 (suitable for penetration seals intended for use at internal dry conditions with temperatures between −20 °C and +70 °C with no exposure to rain nor UV. Y_2,(−20/+70) °C.	EOTA Technical Report TR 024 ETAG 026-2
Reaction to fire	Coating: Class D-s2 d0 Precoated Board: Class A1	EN 13501-1

	APPLICATION: **Cables Penetration**	ID: **CT B1S 01.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Cables including cable carriers EI 120**	**CFS-CT** REV: **01**
	Fire Rating EI 120	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Additional protection on cables and supports
- Al-foil faced mineral wool acc. to EN 14303 with reaction to fire A1/A2, thermal conductivity ≤ 0.040 W/(mK), density 35 - 45 kg/m3

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

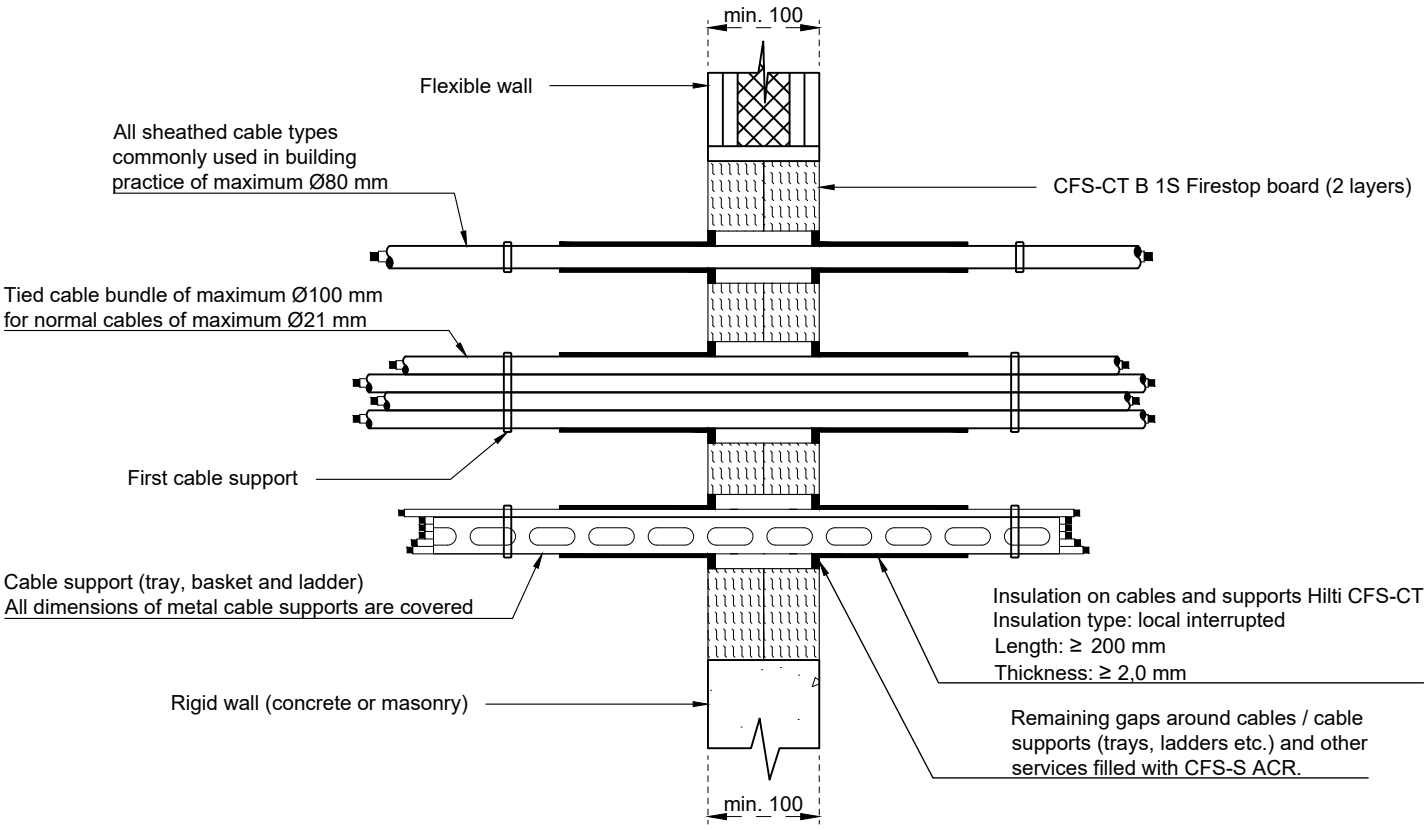
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Cables Penetration**	ID: **CT B1S 02.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429 4/2024**	**Cables including cable carriers EI 90**	**CFS-CT** REV: **01**
	Fire Rating EI 90	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Additional protection on cables and supports
- Hilti Firestop Coating CFS-CT, Insulation type: local interrupted, Length: ≥ 200 mm, thickness: ≥ 2,0 mm

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

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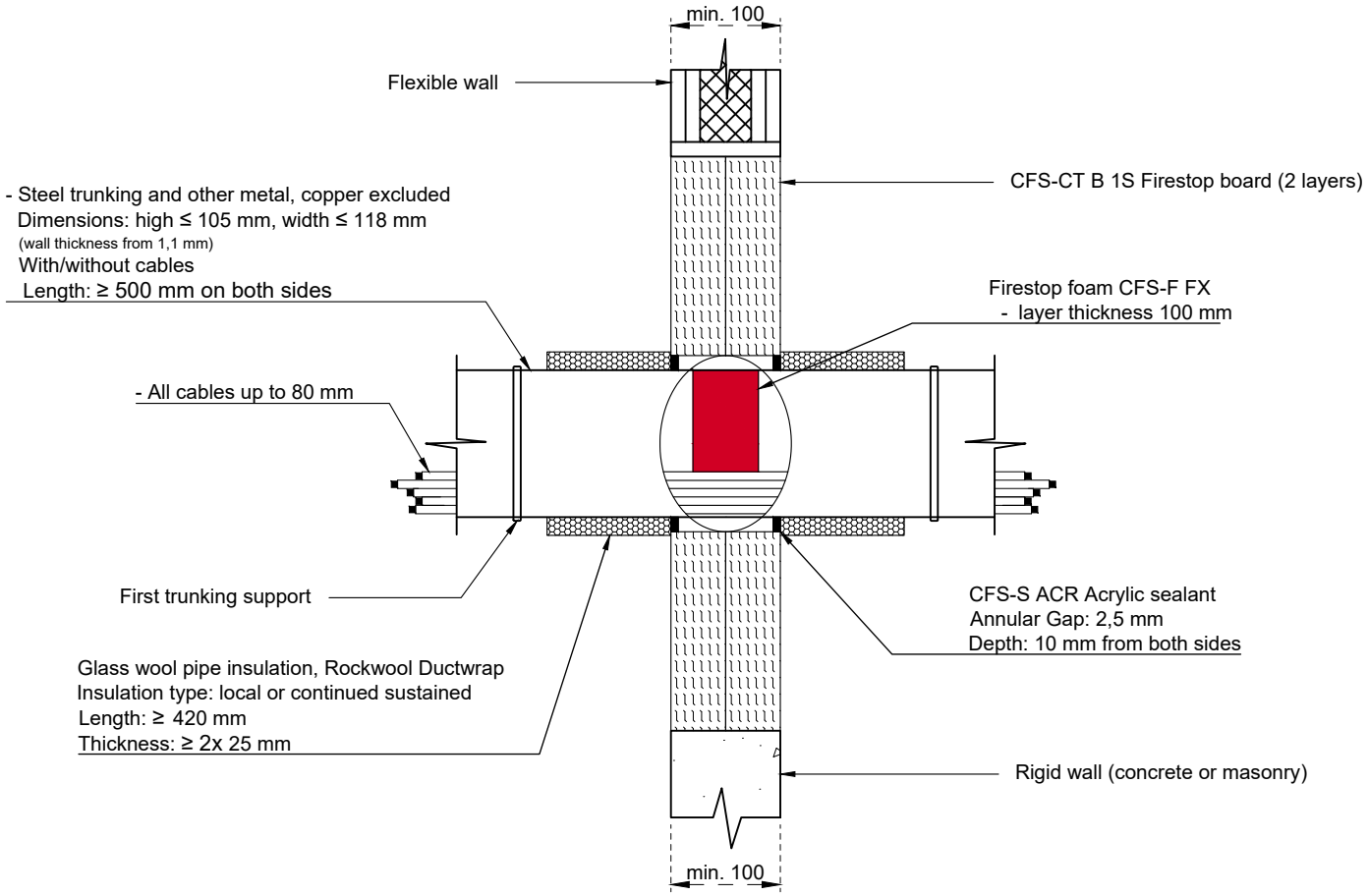
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Trunking Penetration**	ID: **CT B1S 43.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. Classification report 22824B**	**Metal trunking with CFS-S ACR and CFS-F FX**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/U	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the wall - friction fit, the board can be placed anywhere in opening.
- Contact phase between board and support construction should be covered by a thin film of CFS-S ACR, flush with both sides of the board, width 1-5 mm.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.

Minimum distance between services and edges:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for this application.
- Miniimum distance 100 mm to seal edge.
- Minimum distance 100 mm to any other penetrant in the opening.

First support for penetrants
- > 250 mm

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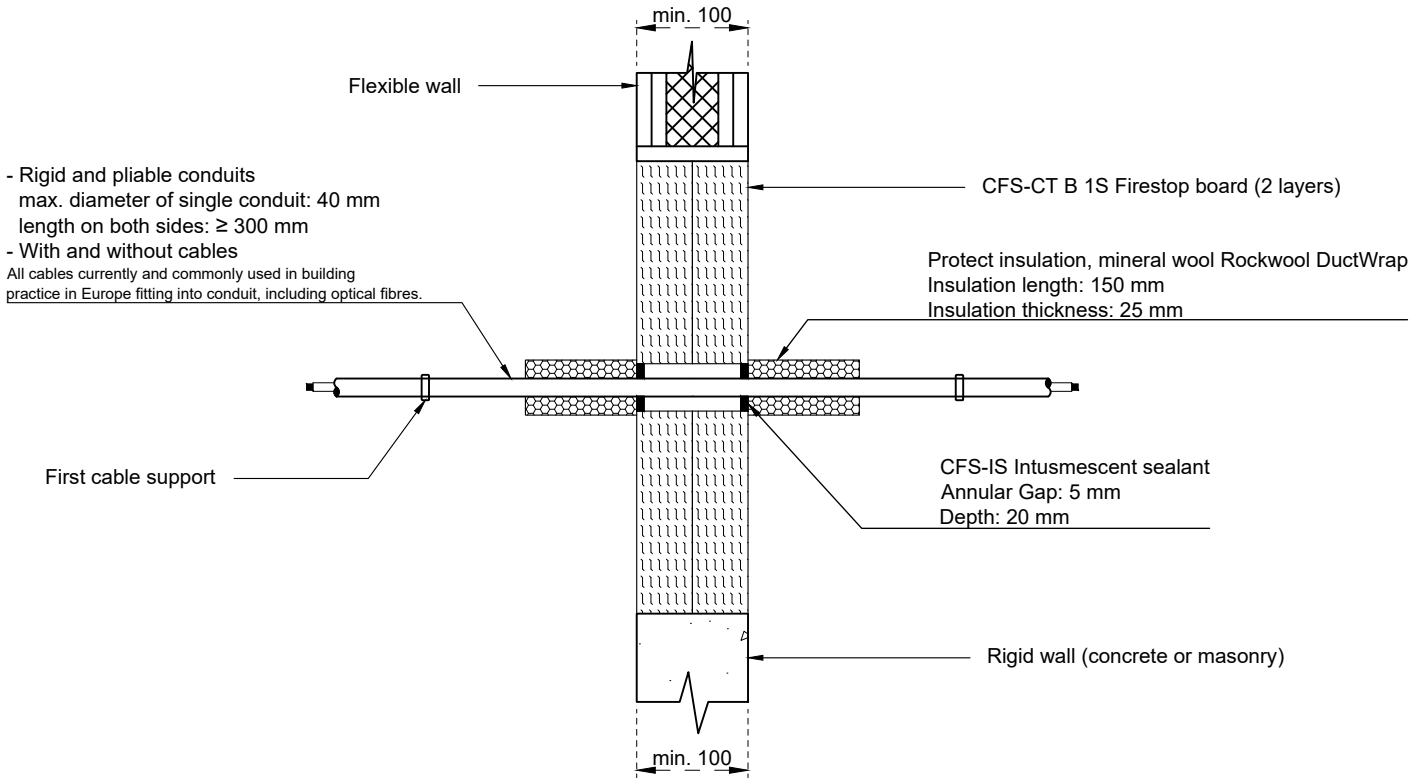
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Conduit Penetration**	ID: **CT B1S 42.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. Classification report 22824B**	**Plastic conduit with CFS-IS**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/U	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the wall - friction fit, the board can be placed anywhere in opening.
- Contact phase between board and support construction should be covered by a thin film of CFS-S ACR, flush with both sides of the board, width 1-5 mm.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.

Minimum distance between services and edges:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for this application.
- Miniimum distance 100 mm to seal edge.
- Minimum distance 100 mm to any other penetrant in the opening.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
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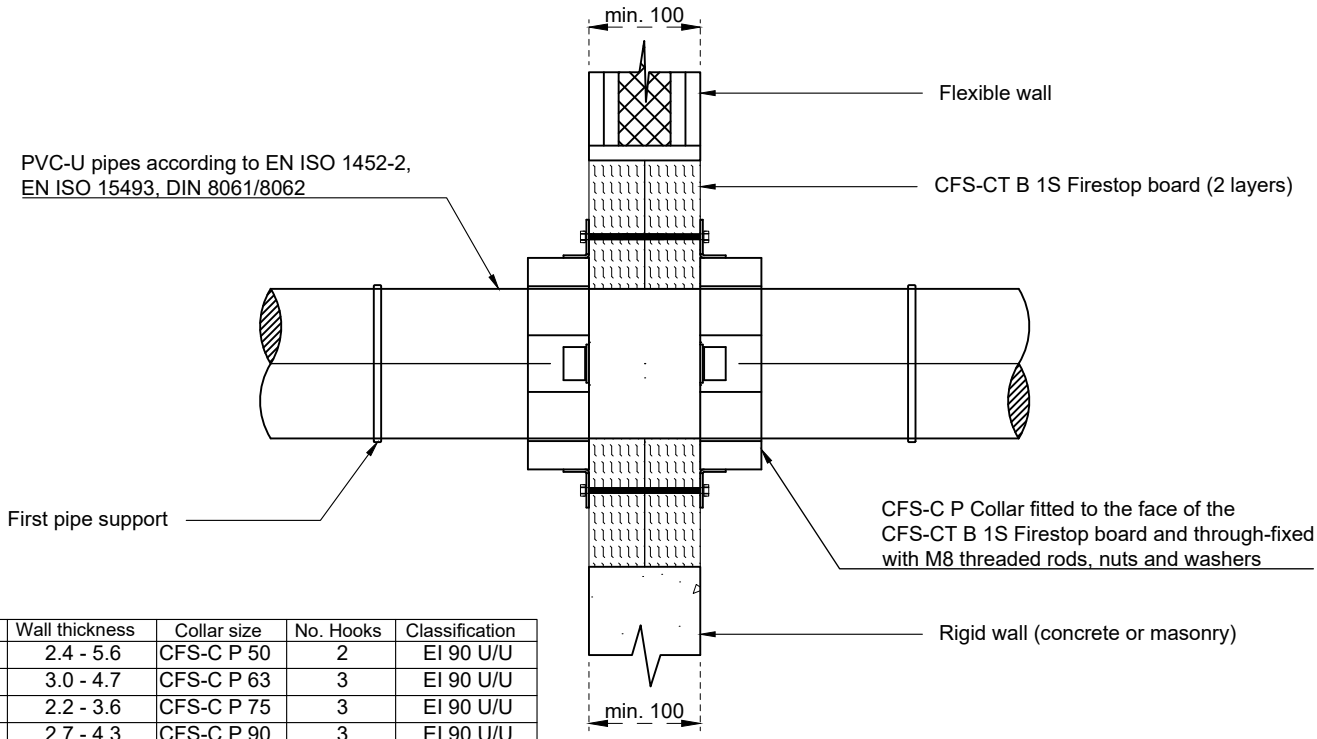
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 11.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**P C pipes with CFS-C P** **Fire Rating up-to EI 120-U/U**	**CFS-CT** REV: **01**



Diameter	Wall thickness	Collar size	No. Hooks	Classification
50	2.4 - 5.6	CFS-C P 50	2	EI 90 U/U
63	3.0 - 4.7	CFS-C P 63	3	EI 90 U/U
75	2.2 - 3.6	CFS-C P 75	3	EI 90 U/U
90	2.7 - 4.3	CFS-C P 90	3	EI 90 U/U
110	2.2 - 8.1	CFS-C P 110	4	EI 90 U/U
110-125	3.7 - 6.0	CFS-C P 125	4	EI 120 U/U
>125 - 160	2.5 - 11.8	CFS-C P 160	6	EI 120 U/U
The results are also valid for PVC-U acc. to EN 1329-1/EN 1453-1				

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

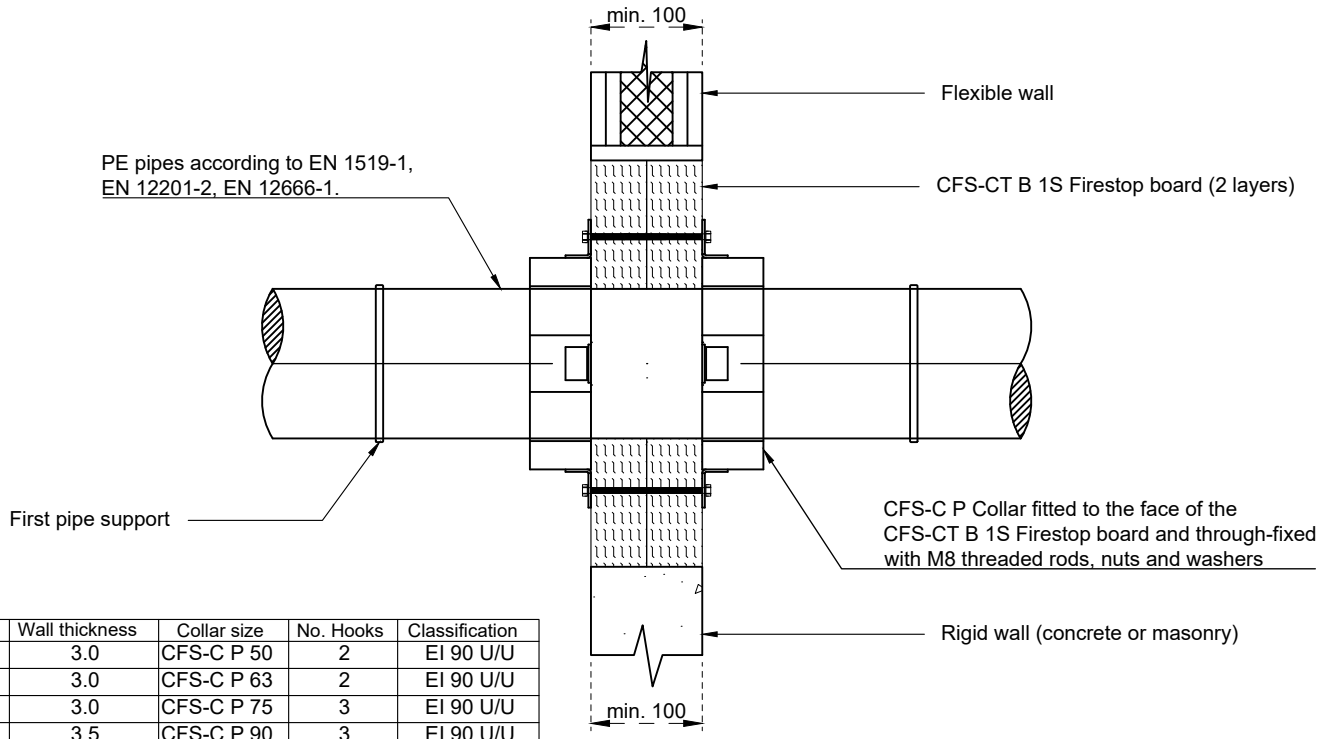
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 11.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE pipes with CFS-C P**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 120-U/U	**Page 1/2**



Diameter	Wall thickness	Collar size	No. Hooks	Classification
50	3.0	CFS-C P 50	2	EI 90 U/U
63	3.0	CFS-C P 63	2	EI 90 U/U
75	3.0	CFS-C P 75	3	EI 90 U/U
90	3.5	CFS-C P 90	3	EI 90 U/U
110	4.2	CFS-C P 110	4	EI 90 U/U
110-125	4.8	CFS-C P 125	4	EI 120 U/U
>125 - 160	6.2	CFS-C P 160	6	EI 120 U/U
The results are valid for PE acc. to EN 1519-1, EN 12201-2/1266-1				

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

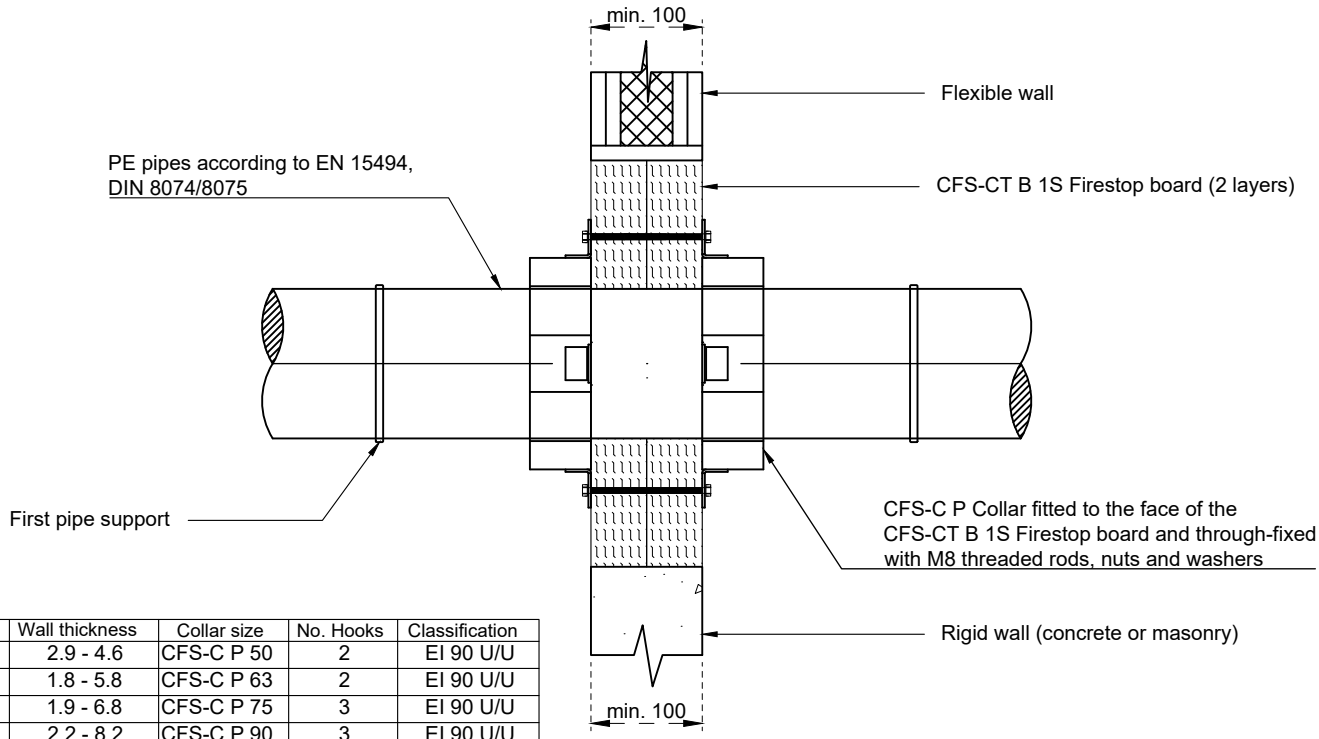
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 11.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE pipes with CFS-C P**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 120-U/U	**Page 2/2**



Diameter	Wall thickness	Collar size	No. Hooks	Classification
50	2.9 - 4.6	CFS-C P 50	2	EI 90 U/U
63	1.8 - 5.8	CFS-C P 63	2	EI 90 U/U
75	1.9 - 6.8	CFS-C P 75	3	EI 90 U/U
90	2.2 - 8.2	CFS-C P 90	3	EI 90 U/U
110	2.7 - 10.0	CFS-C P 110	4	EI 90 U/U
110-125	3.1 - 7.1	CFS-C P 125	4	EI 120 U/U
>125 - 160	4.0 - 9.1	CFS-C P 160	6	EI 120 U/U
The results are valid for PE acc. to EN 15494, DIN 8074/8075				

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

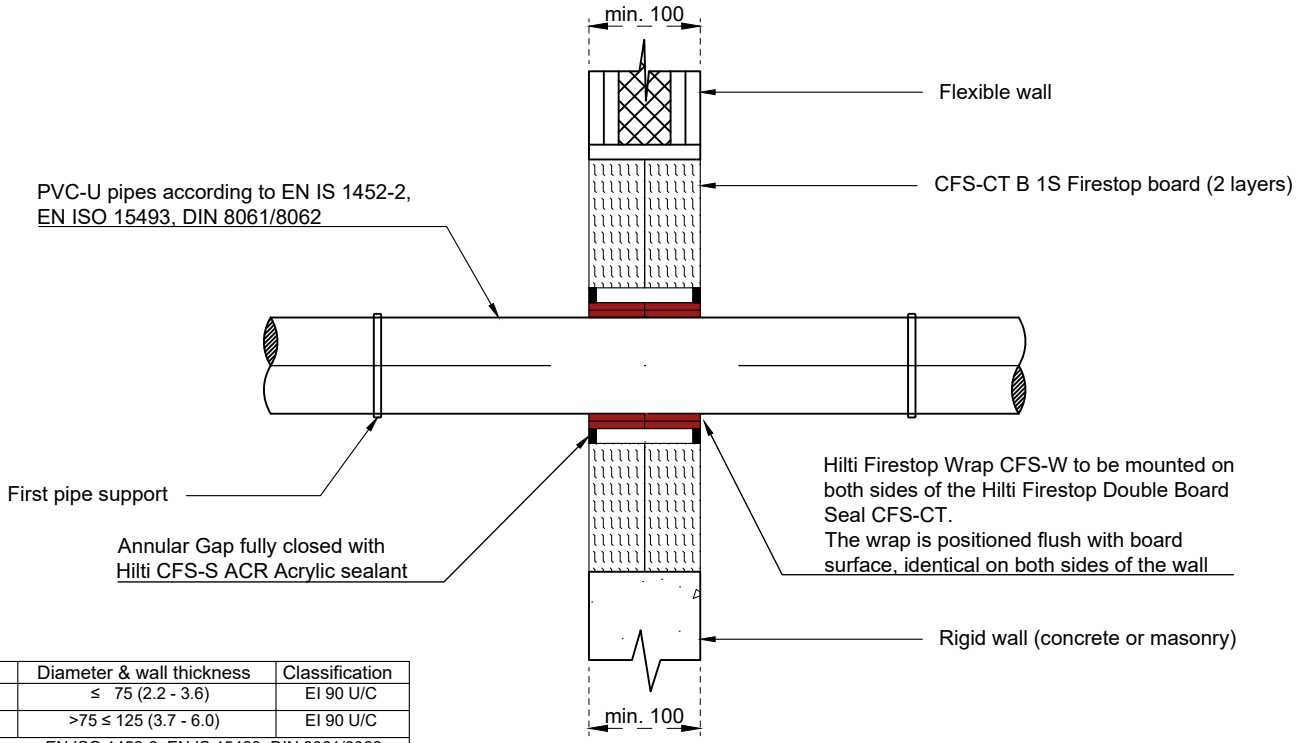
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 14.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**P C pipes with CFS-W**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/1**



Layers	Diameter & wall thickness	Classification
1	≤ 75 (2.2 - 3.6)	EI 90 U/C
2	>75 ≤ 125 (3.7 - 6.0)	EI 90 U/C
PVC Pipes acc. EN ISO 1452-2, EN IS 15493, DIN 8061/8062. The results are also valid for PVC-U acc. EN 1329-1, EN 1453-1		

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

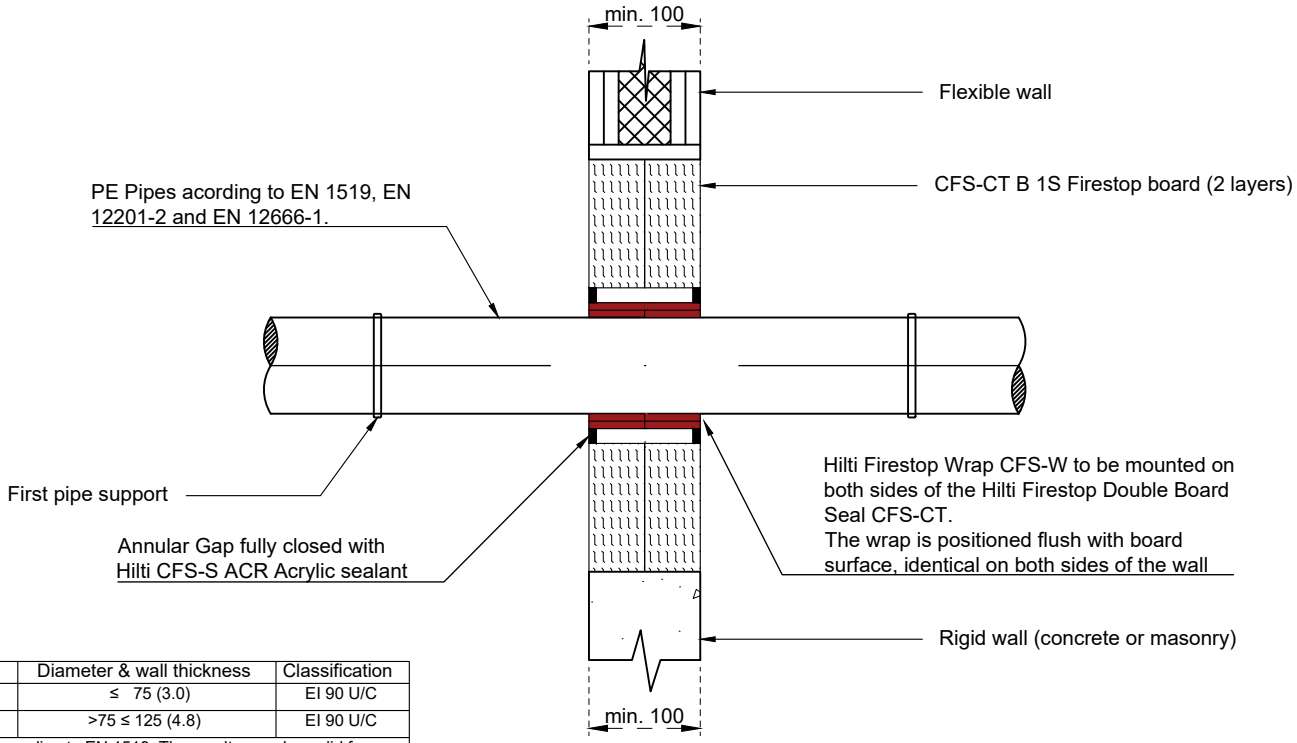
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 14.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE pipes with CFS-W**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/1**



Layers	Diameter & wall thickness	Classification
1	≤ 75 (3.0)	EI 90 U/C
2	>75 ≤ 125 (4.8)	EI 90 U/C
PE Pipes acording to EN 1519. The results are also valid for pipes acc. EN 12201-2 and EN 12666-1.		

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

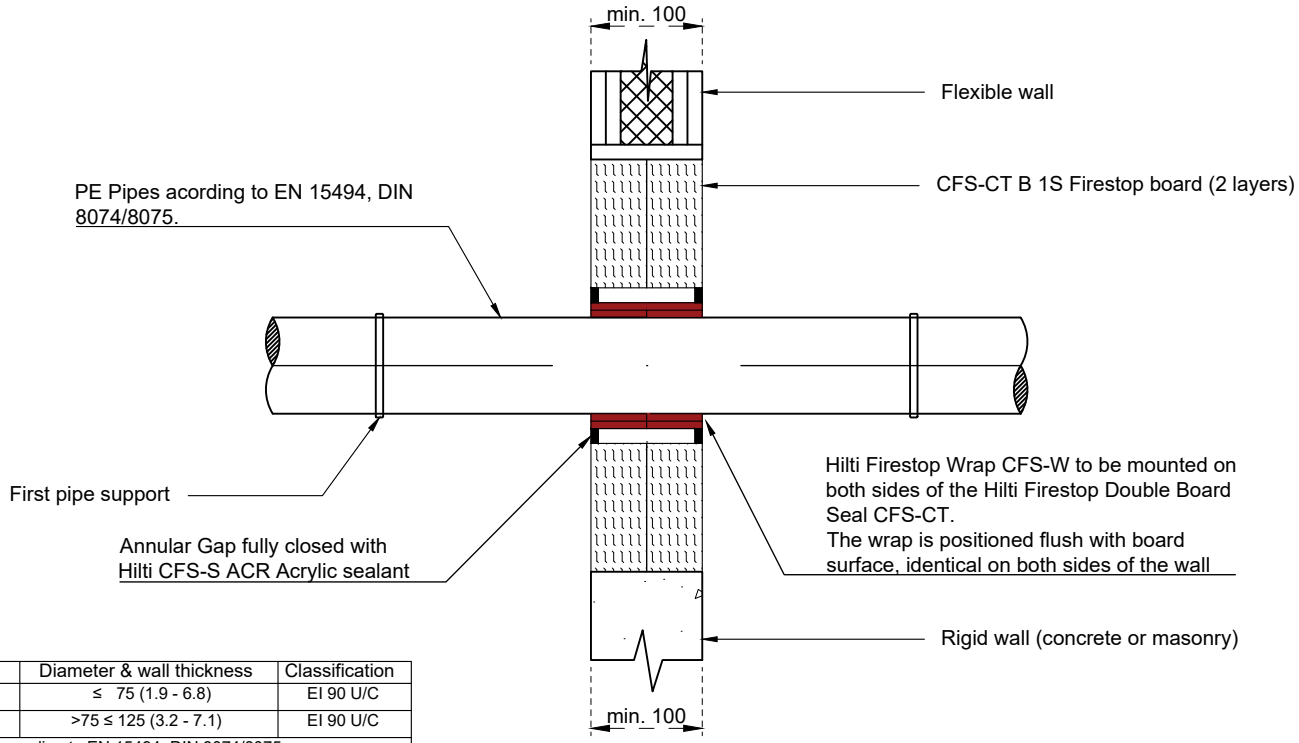
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 14.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE pipes with CFS-W**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/1**



Layers	Diameter & wall thickness	Classification
1	≤ 75 (1.9 - 6.8)	EI 90 U/C
2	>75 ≤ 125 (3.2 - 7.1)	EI 90 U/C
PE Pipes acording to EN 15494, DIN 8074/8075.		

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

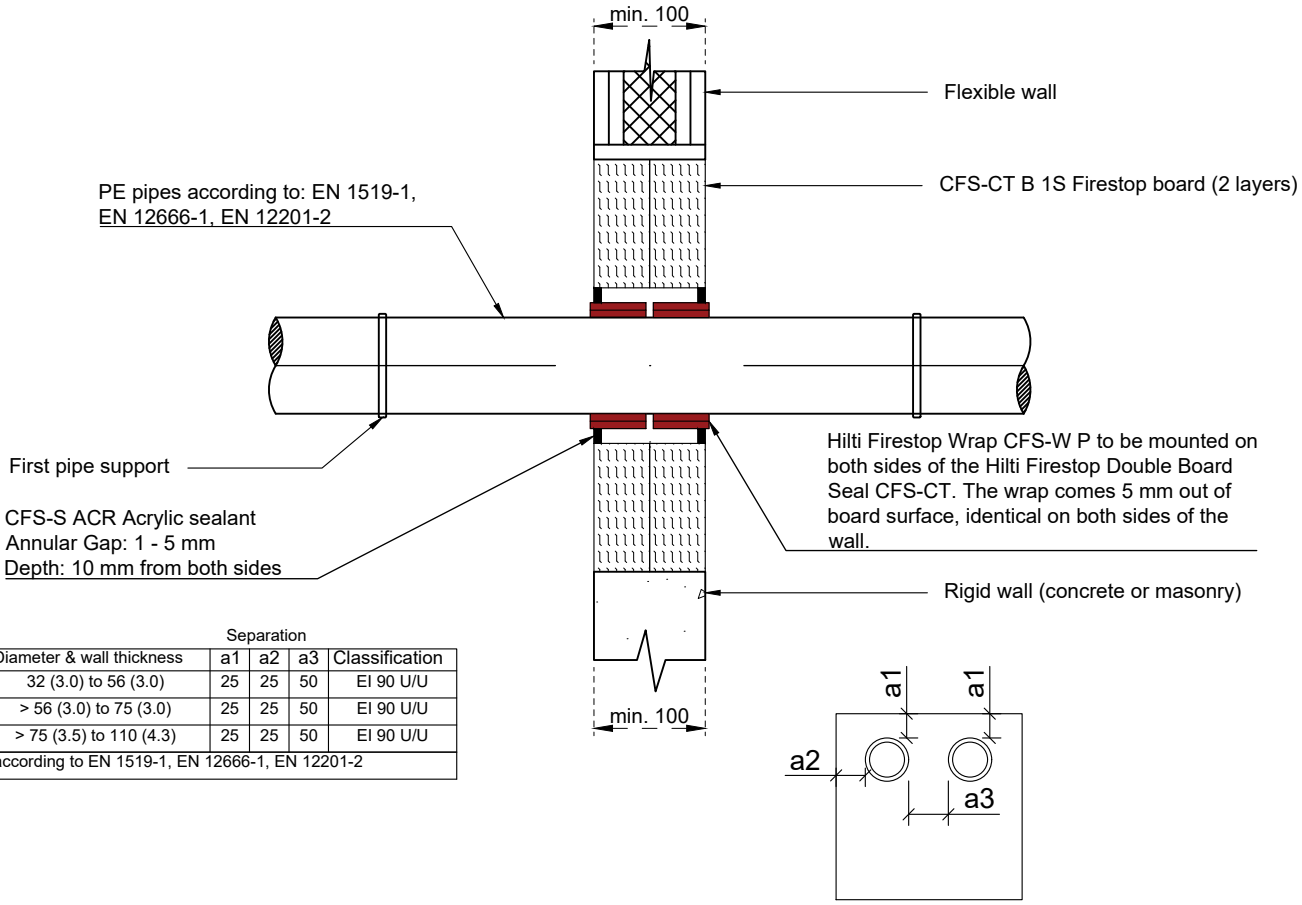
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 14.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE pipes with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating min. EI 90-U/U	**Page 1/2**



Separation

Layers	Diameter & wall thickness	a1	a2	a3	Classification
2	32 (3.0) to 56 (3.0)	25	25	50	EI 90 U/U
3	> 56 (3.0) to 75 (3.0)	25	25	50	EI 90 U/U
4	> 75 (3.5) to 110 (4.3)	25	25	50	EI 90 U/U
PE Pipes according to EN 1519-1, EN 12666-1, EN 12201-2					

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

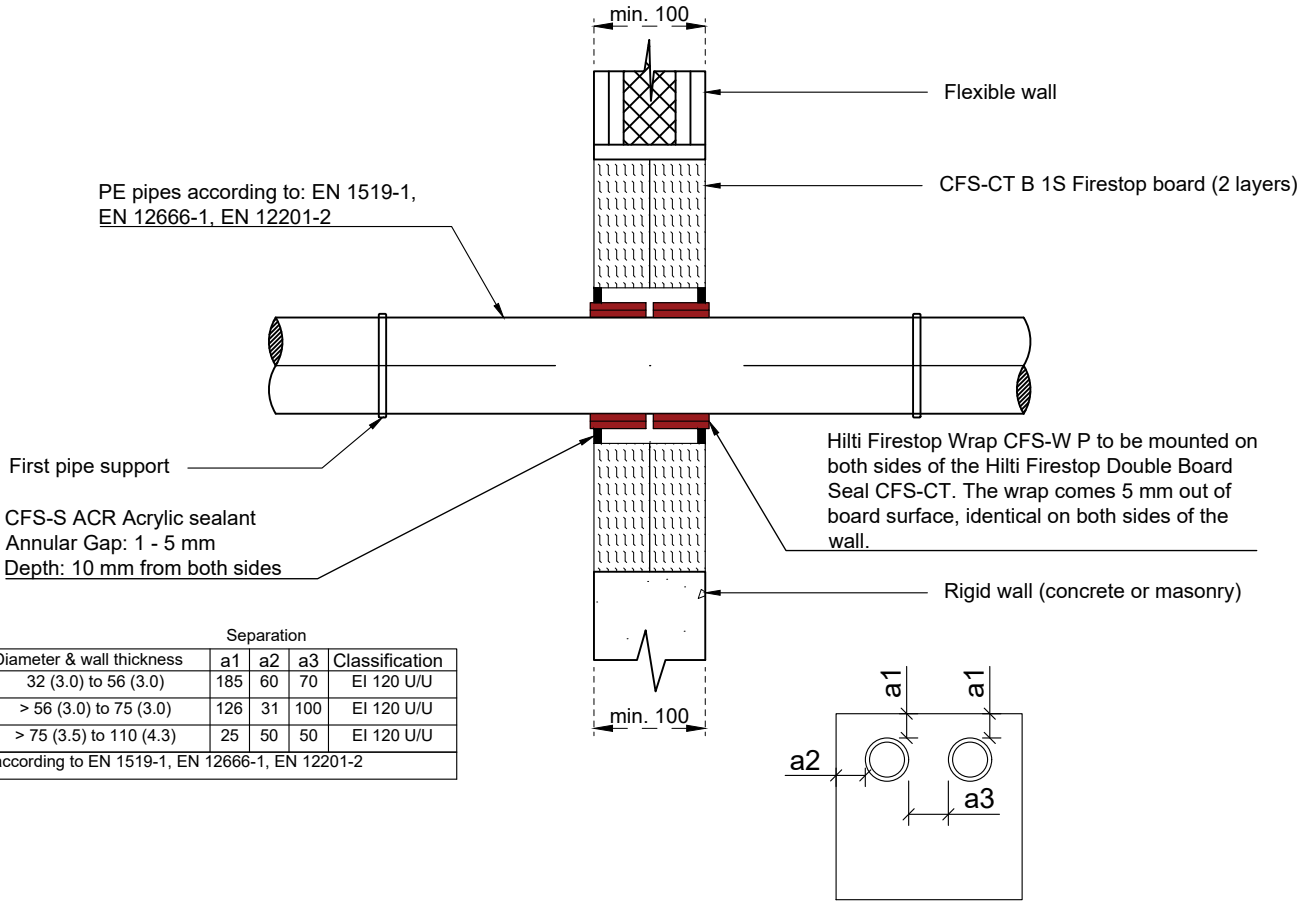
1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

INFORMATION:
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Coverage acc. ETA 11/0429
- 4/2024

PE pipes with CFS-W P

CFS-CT
REV: 01

Fire Rating min. EI 120-U/U



Separation

Layers	Diameter & wall thickness	a1	a2	a3	Classification
2	32 (3.0) to 56 (3.0)	185	60	70	EI 120 U/U
3	> 56 (3.0) to 75 (3.0)	126	31	100	EI 120 U/U
4	> 75 (3.5) to 110 (4.3)	25	50	50	EI 120 U/U
PE Pipes according to EN 1519-1, EN 12666-1, EN 12201-2					

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

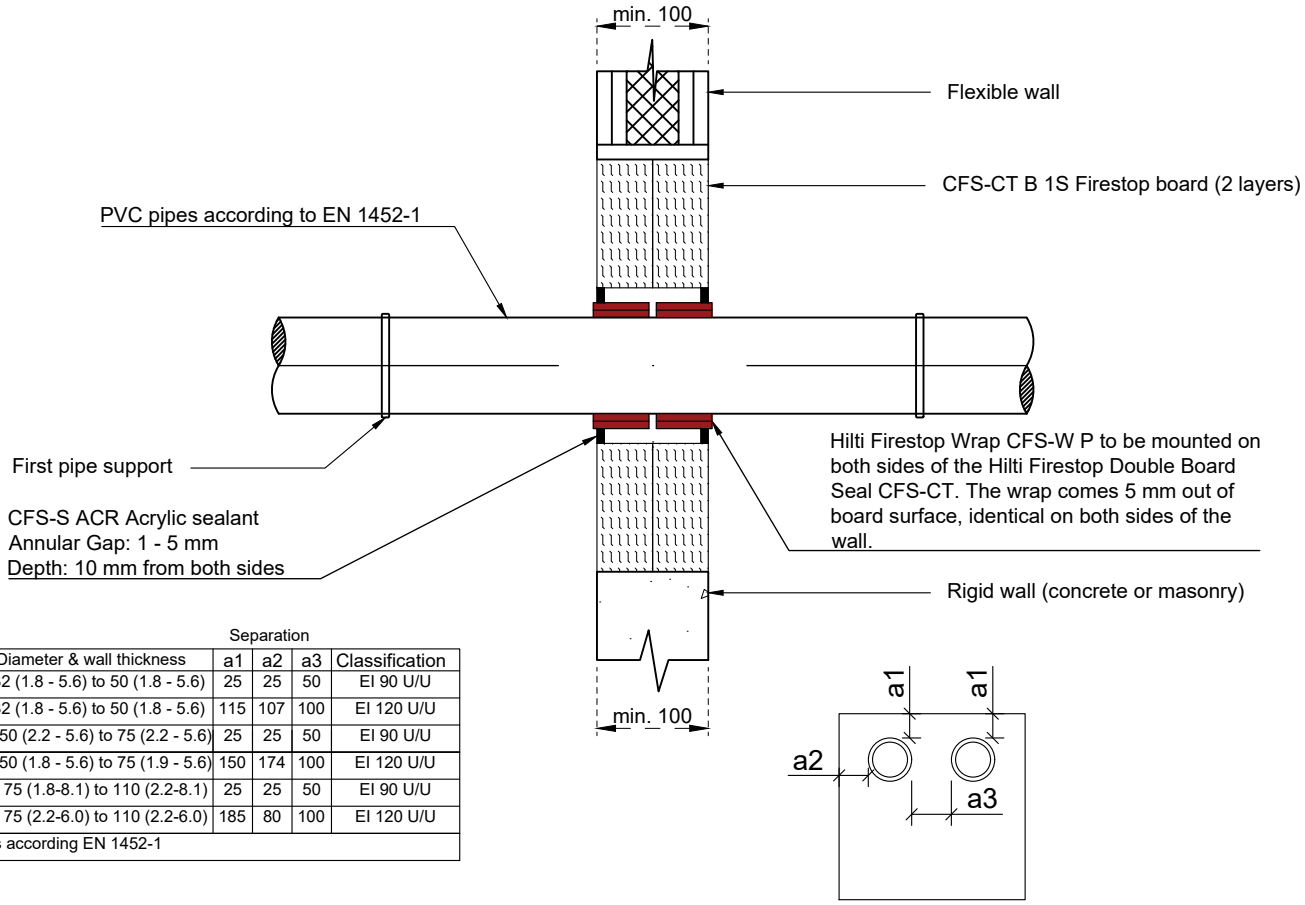
Gap seal
- Remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 14.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**P C pipes with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 120-U/U	**Page 1/1**



Separation

Layers	Diameter & wall thickness	a1	a2	a3	Classification
2	32 (1.8 - 5.6) to 50 (1.8 - 5.6)	25	25	50	EI 90 U/U
2	32 (1.8 - 5.6) to 50 (1.8 - 5.6)	115	107	100	EI 120 U/U
3	> 50 (2.2 - 5.6) to 75 (2.2 - 5.6)	25	25	50	EI 90 U/U
3	> 50 (1.8 - 5.6) to 75 (1.9 - 5.6)	150	174	100	EI 120 U/U
4	> 75 (1.8-8.1) to 110 (2.2-8.1)	25	25	50	EI 90 U/U
4	> 75 (2.2-6.0) to 110 (2.2-6.0)	185	80	100	EI 120 U/U
PVC pipes according EN 1452-1					

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

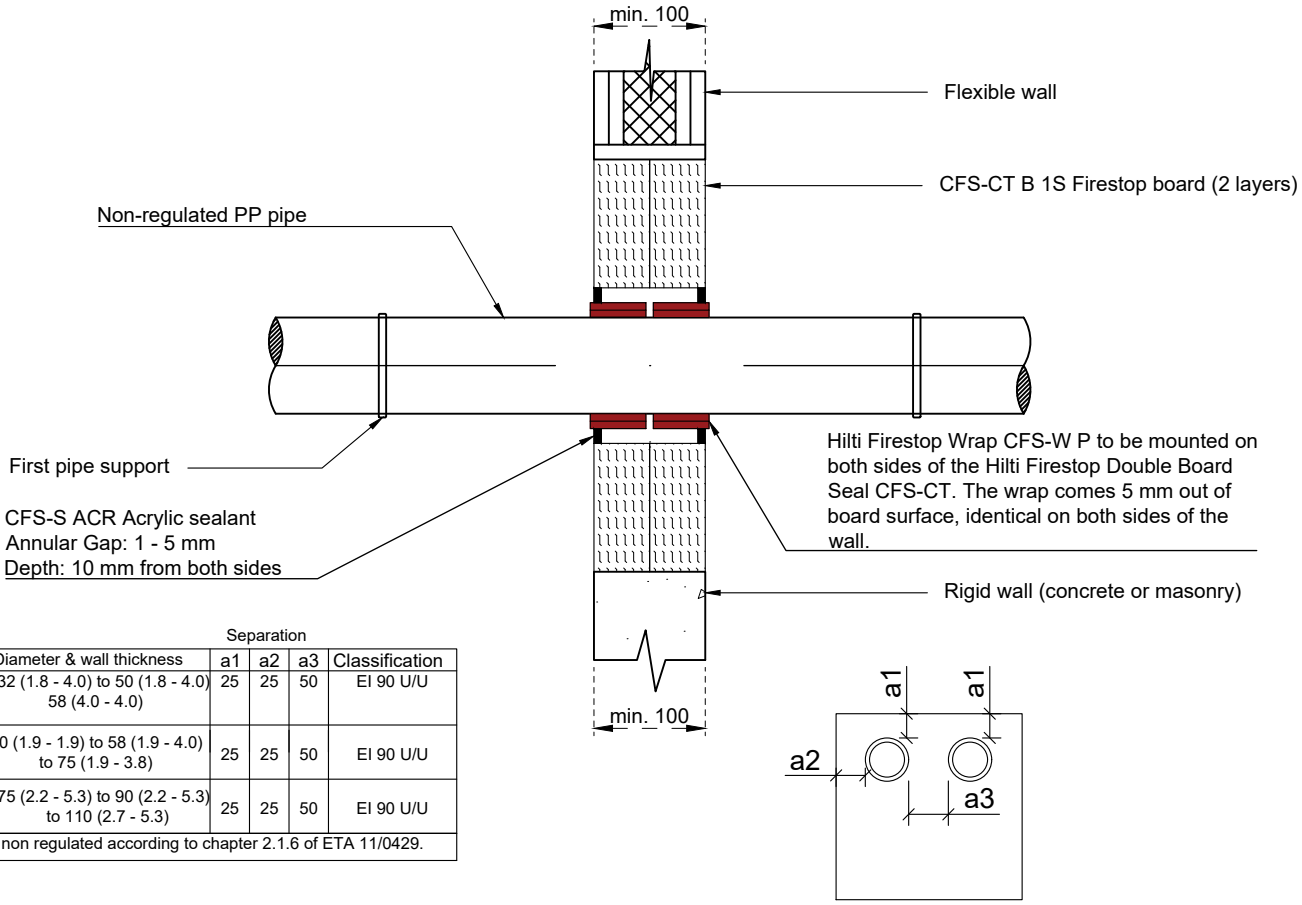
Gap seal
- Remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 14.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Non-regulated PP pipes with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating min. EI 90-U/U	**Page 1/2**



Separation

Layers	Diameter & wall thickness	a1	a2	a3	Classification
2	> 32 (1.8 - 4.0) to 50 (1.8 - 4.0) 58 (4.0 - 4.0)	25	25	50	EI 90 U/U
3	50 (1.9 - 1.9) to 58 (1.9 - 4.0) to 75 (1.9 - 3.8)	25	25	50	EI 90 U/U
4	> 75 (2.2 - 5.3) to 90 (2.2 - 5.3) to 110 (2.7 - 5.3)	25	25	50	EI 90 U/U
PP pipes - non regulated according to chapter 2.1.6 of ETA 11/0429.					

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

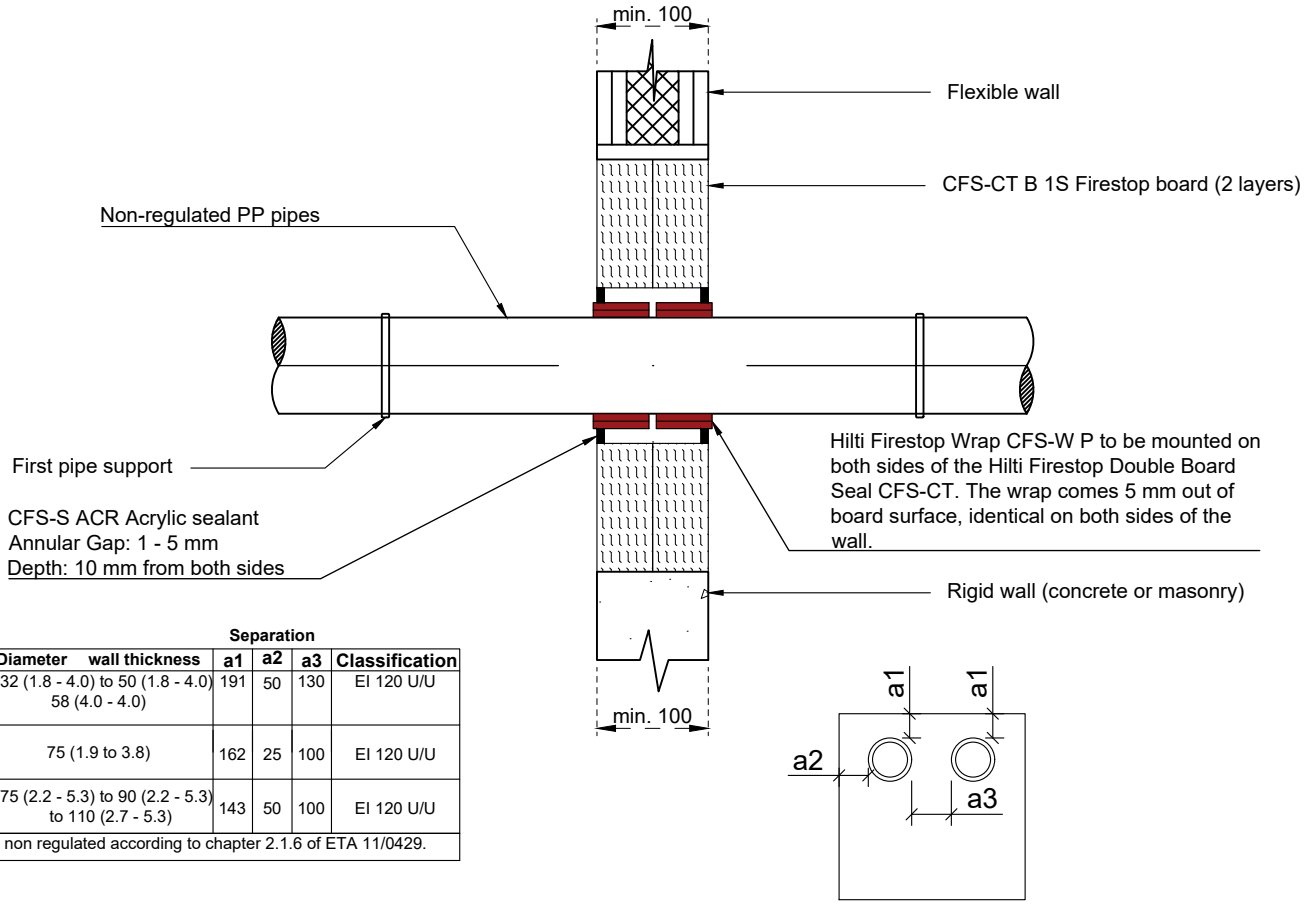
Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

Approved manufacturers and pipe type:
- Rehau Raupiano, Poloplast Polokal NG, Wavin Sitech, Geberit Silent PP, Coes Blue Power, Coes PhoNo Fire, Valsir Triplus, Pipelife Master 3
- Marley Silent, Poloplast Polokal 4S, Poloplast Polokal XS, Ostendorf Skolan DB, Geberit Silent Pro, Valsir Silere, Kekelit PhonEx AS, Wavin AS Silenta Premium, Wavin Sitech , Conel Drain Hausablfussrohr, Uponor S&W Decibel

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic Pipe Penetration**	ID: **CT B1S 14.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Non-regulated PP pipes with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/U	**Page 2/2**



	Separation				
Layers	**Diameter wall thickness**	**a1**	**a2**	**a3**	**Classification**
2	> 32 (1.8 - 4.0) to 50 (1.8 - 4.0) 58 (4.0 - 4.0)	191	50	130	EI 120 U/U
3	75 (1.9 to 3.8)	162	25	100	EI 120 U/U
4	> 75 (2.2 - 5.3) to 90 (2.2 - 5.3) to 110 (2.7 - 5.3)	143	50	100	EI 120 U/U
PP pipes - non regulated according to chapter 2.1.6 of ETA 11/0429.					

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

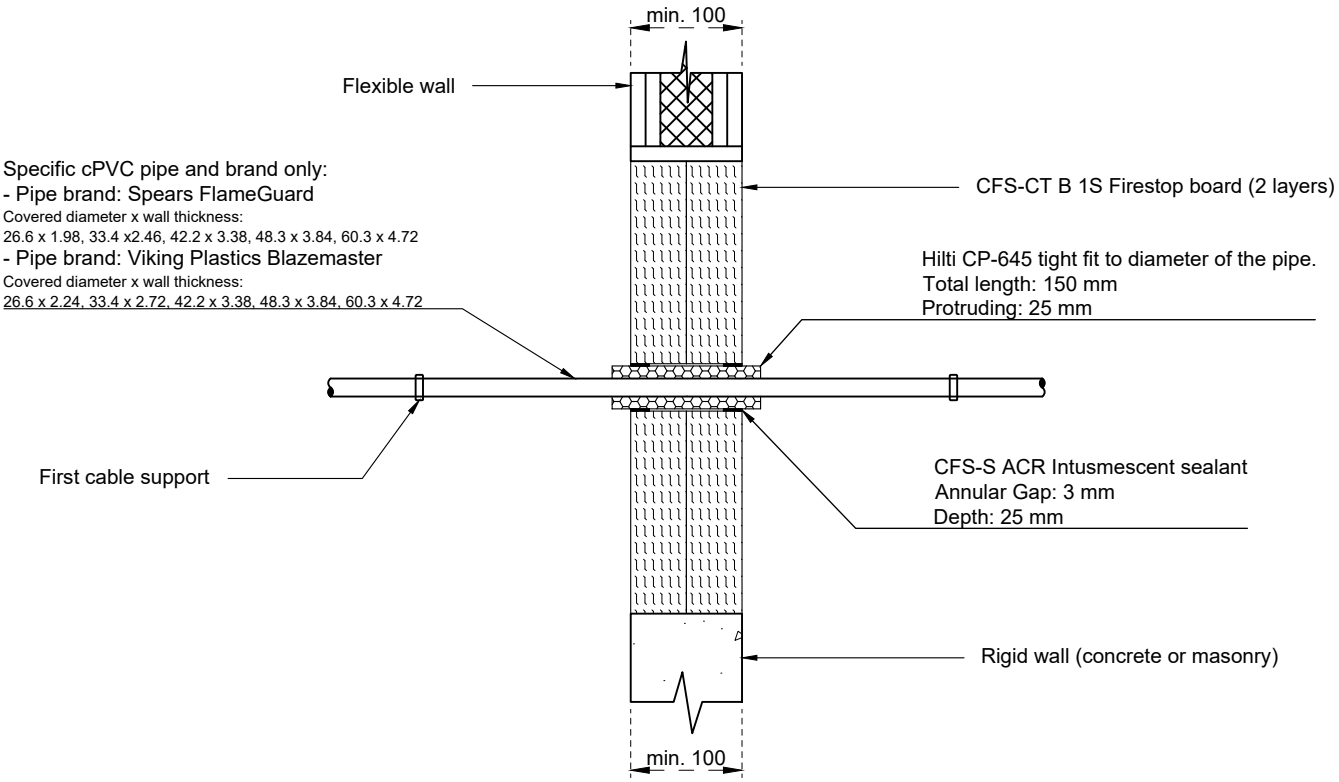
Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

Approved manufacturers and pipe type:
- Rehau Raupiano, Poloplast Polokal NG, Wavin Sitech, Geberit Silent PP, Coes Blue Power, Coes PhoNo Fire, Valsir Triplus, Pipelife Master 3
- Marley Silent, Poloplast Polokal 4S, Poloplast Polokal XS, Ostendorf Skolan DB, Geberit Silent Pro, Valsir Silere, Kekelit PhonEx AS, Wavin AS Silenta Premium, Wavin Sitech , Conel Drain Hausablfussrohr, Uponor S&W Decibel

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Pipe Penetration**	ID: **CT B1S 42.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Classification report 22824B** **- 4/2024**	**cP C pipe with CP-64**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the wall - friction fit, the board can be placed anywhere in opening.
- Contact phase between board and support construction should be covered by a thin film of CFS-S ACR, flush with both sides of the board, width 1-5 mm.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

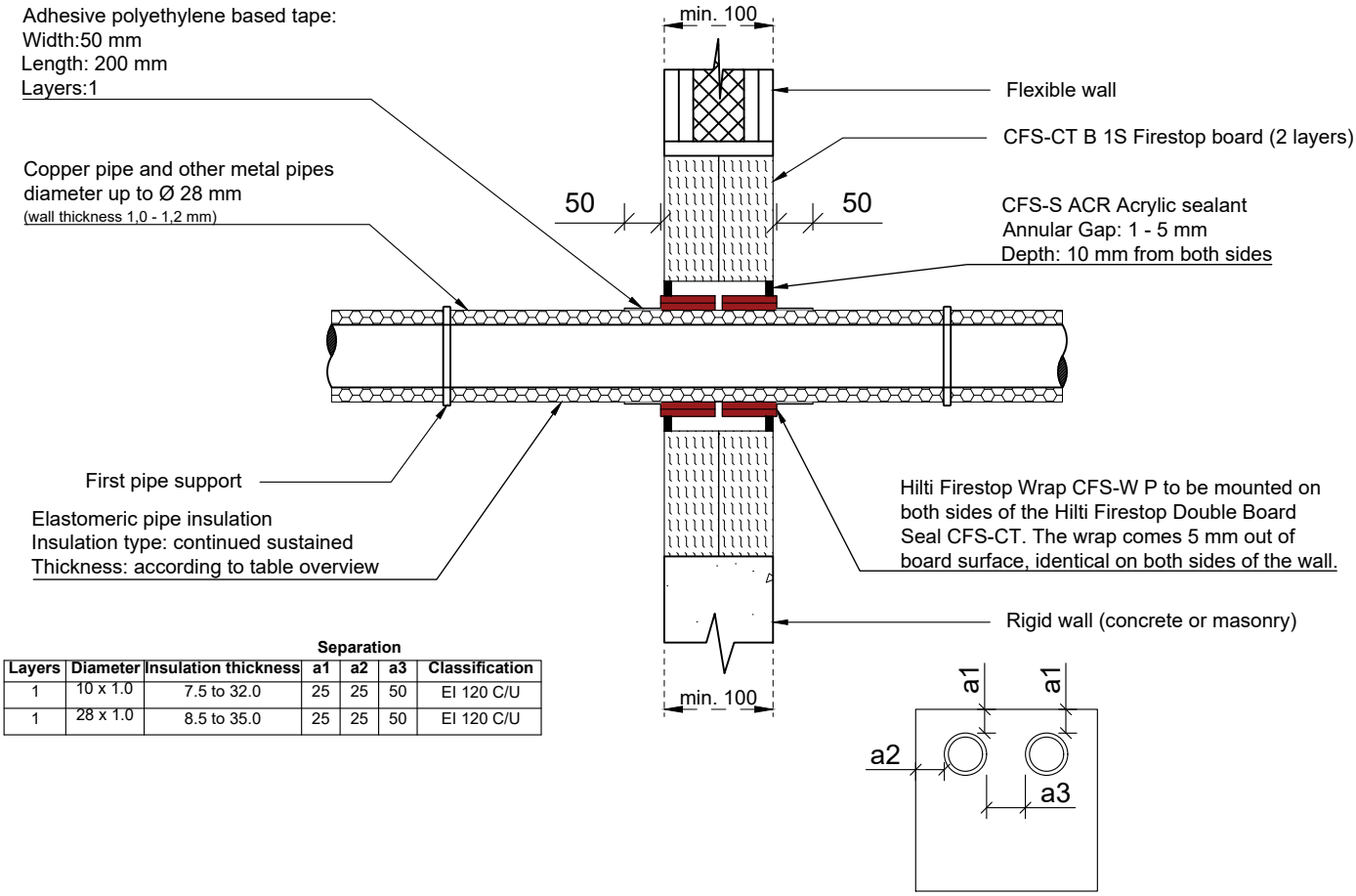
Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.

Minimum distance between services and edges:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for this application.
- Miniimum distance 100 mm to seal edge.
- Minimum distance 100 mm to any other penetrant in the opening.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 18.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Armaflex insulated copper pipes with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 120-C/U	**Page 1/1**



Separation

Layers	Diameter	Insulation thickness	a1	a2	a3	Classification
1	10 x 1.0	7.5 to 32.0	25	25	50	EI 120 C/U
1	28 x 1.0	8.5 to 35.0	25	25	50	EI 120 C/U

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

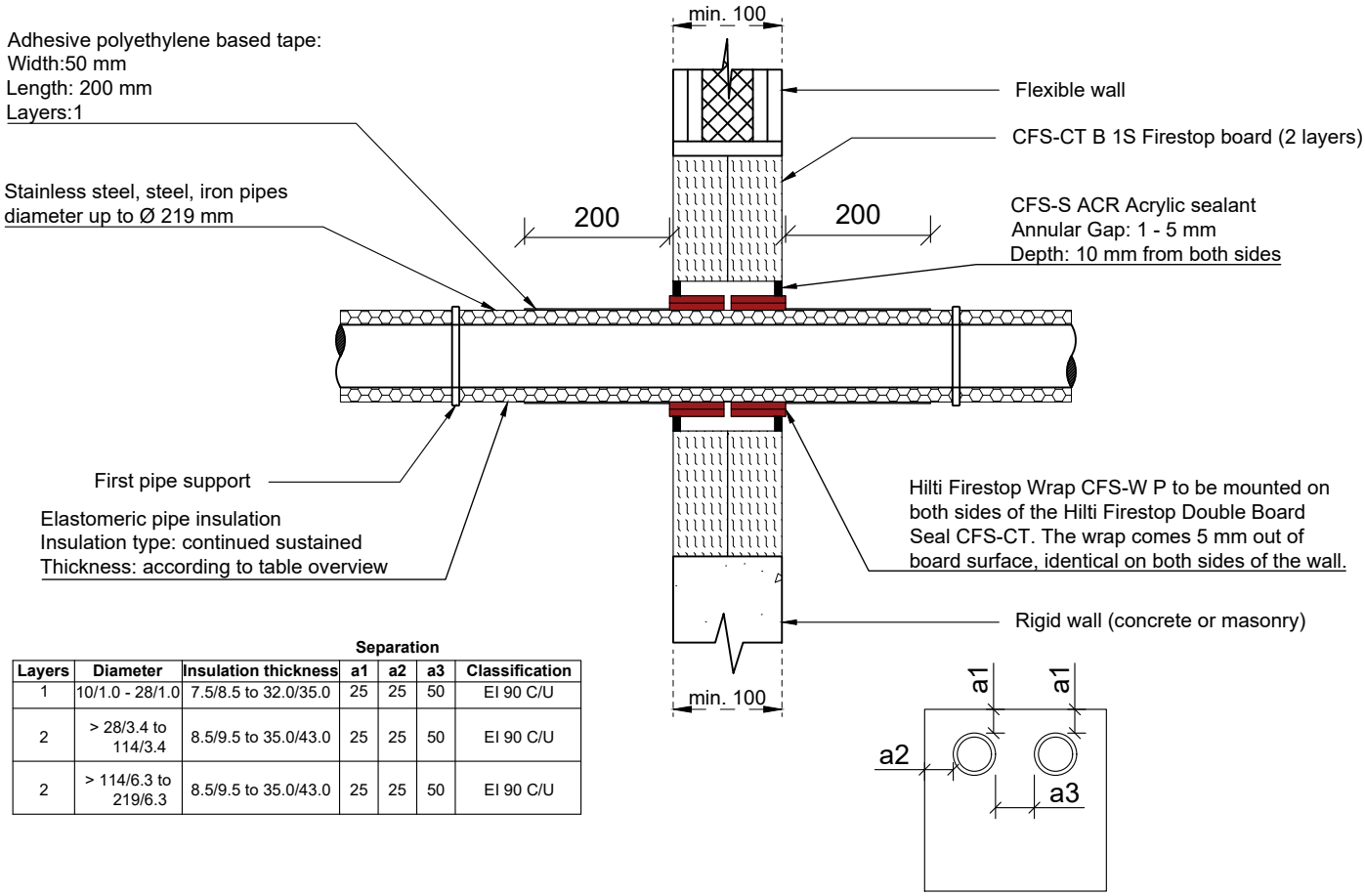
Gap seal
- Remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 18.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Armaflex insulated steel pipes with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 90-C/U	**Page 1/1**



Separation

Layers	Diameter	Insulation thickness	a1	a2	a3	Classification
1	10/1.0 - 28/1.0	7.5/8.5 to 32.0/35.0	25	25	50	EI 90 C/U
2	> 28/3.4 to 114/3.4	8.5/9.5 to 35.0/43.0	25	25	50	EI 90 C/U
2	> 114/6.3 to 219/6.3	8.5/9.5 to 35.0/43.0	25	25	50	EI 90 C/U

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

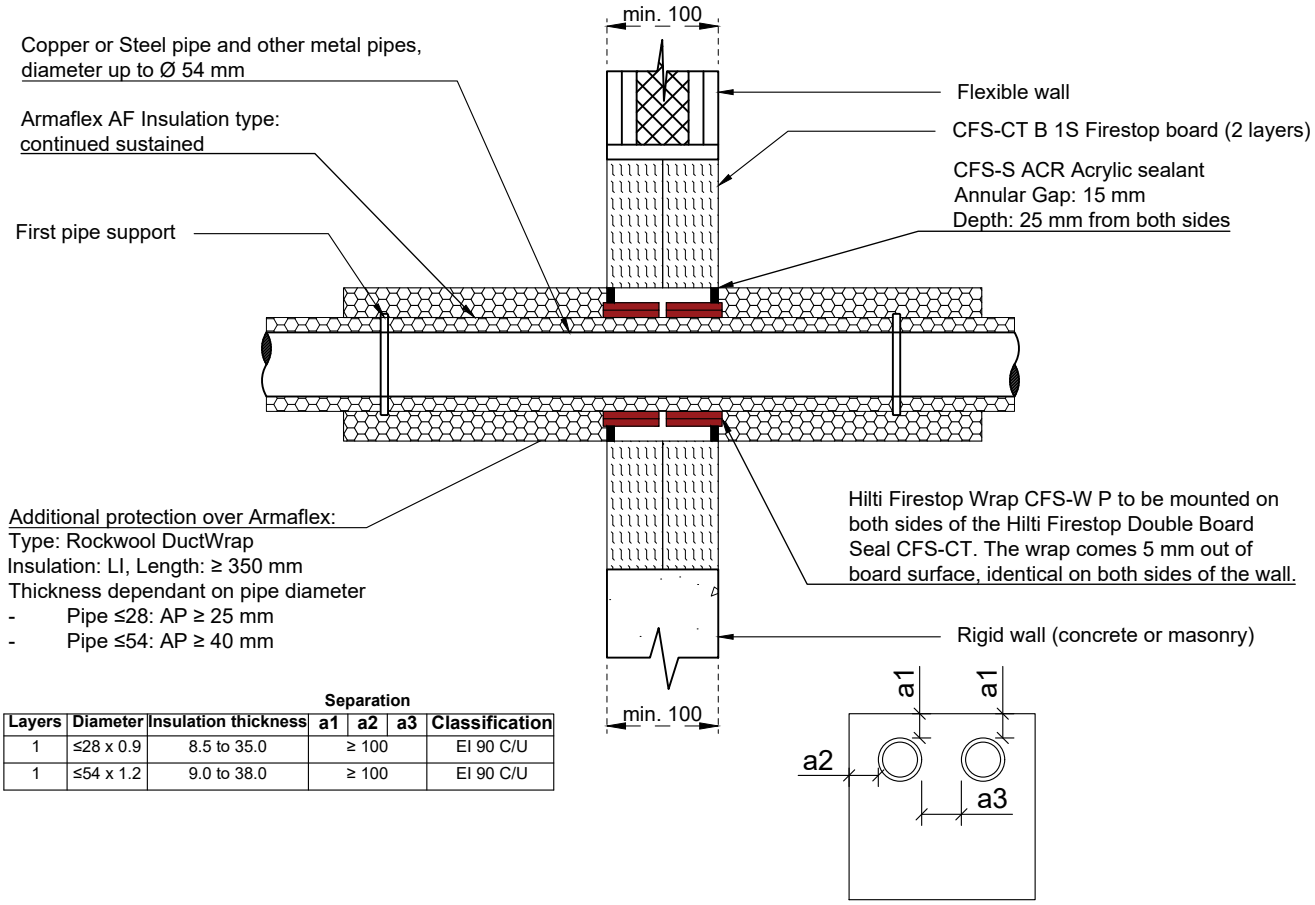
Gap seal
- Remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 19.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Cu/Fe pipes insulated with Kingspan Kooltherm**	**CFS-CT** REV: **01**
	Fire Rating EI 90-C/U	**Page 1/1**



Layers	Diameter	Insulation thickness	Separation a1	a2	a3	Classification
1	≤28 x 0.9	8.5 to 35.0	≥ 100			EI 90 C/U
1	≤54 x 1.2	9.0 to 38.0	≥ 100			EI 90 C/U

Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the wall - friction fit, the board can be placed anywhere in opening.
- Contact phase between board and support construction should be covered by a thin film of CFS-S ACR, flush with both sides of the board, width 1-5 mm.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

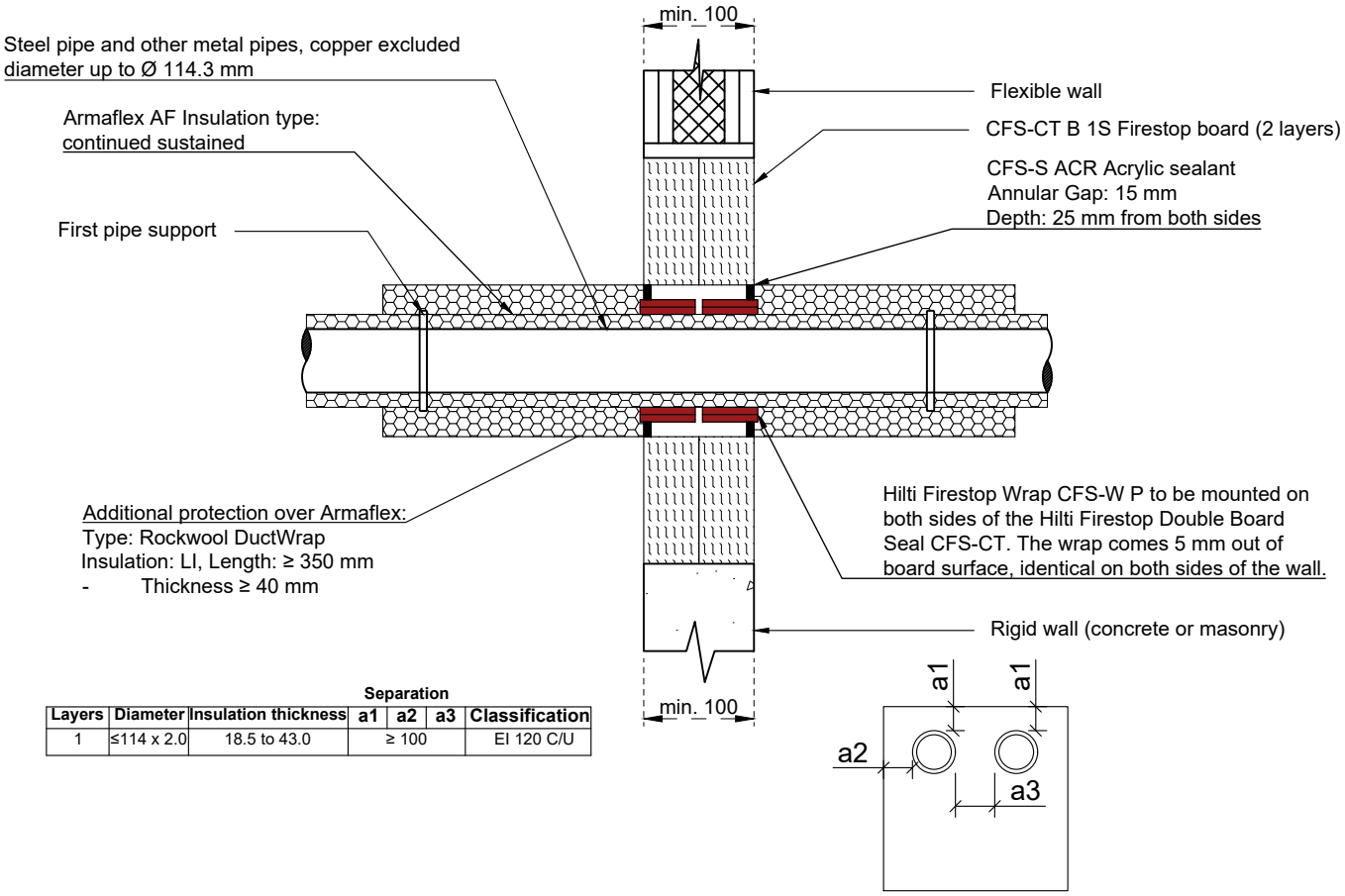
Gap seal
- Remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for this application.
- Minimum distance 100 mm to seal edge and any other penetrant in the opening.
- For separations a1 – a3, please see detailed description in classification report 228244B.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 19.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Classification report 22824B** **- 4/2024**	**Steel pipes insulated with Kingspan Kooltherm**	**CFS-CT** REV: **01**
	Fire Rating EI 120-C/U	**Page 1/1**



Layers	Diameter	Insulation thickness	Separation a1	a2	a3	Classification
1	≤114 x 2.0	18.5 to 43.0	≥ 100			EI 120 C/U

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

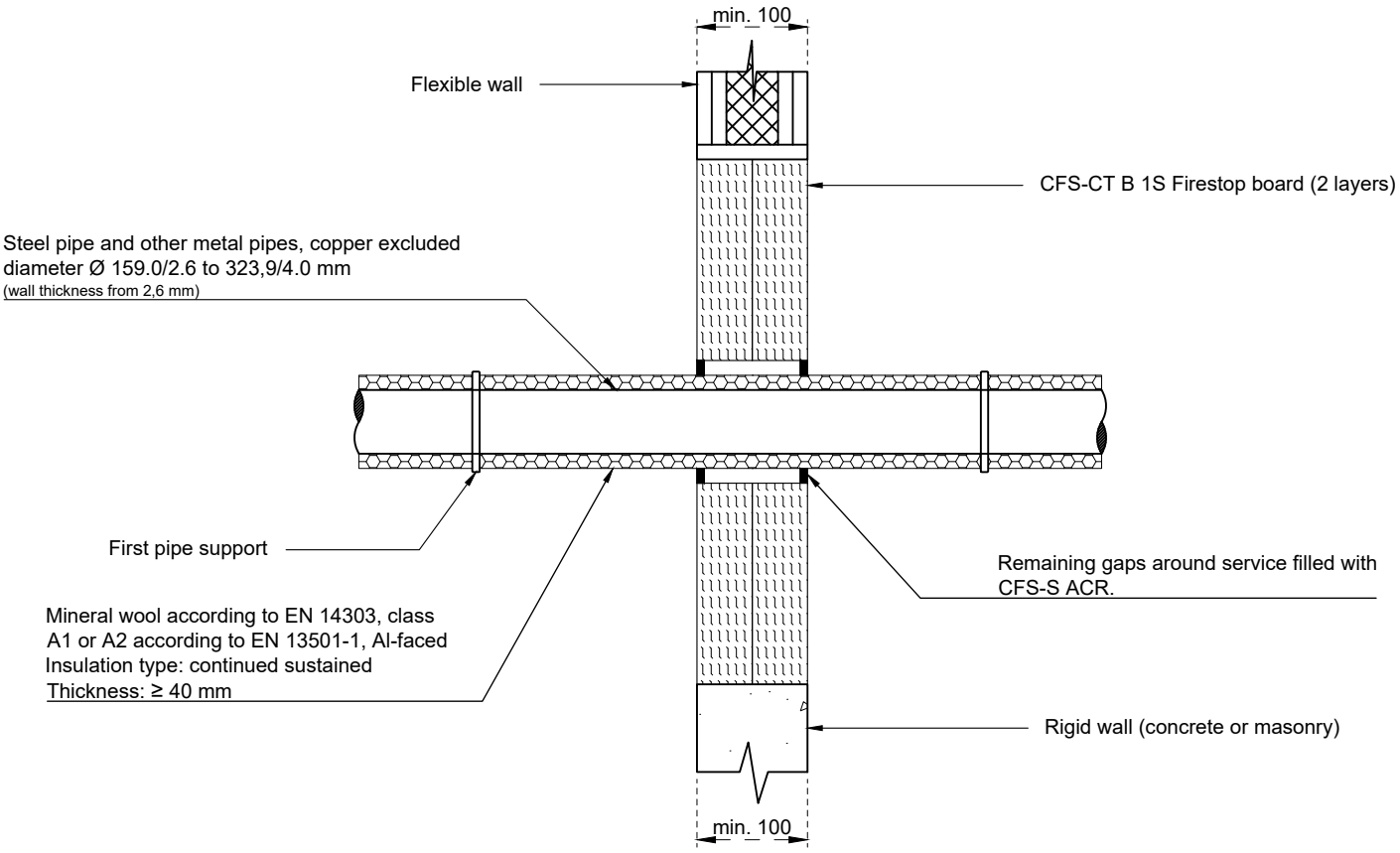
Gap seal
- Remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for this application.
- Minimum distance 100 mm to seal edge and any other penetrant in the opening.
- For separations a1 – a3, please see detailed description in classification report 228244B.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 03.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA11/0429** **- 4/2024**	**Steel pipes with continued sustained insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 60-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

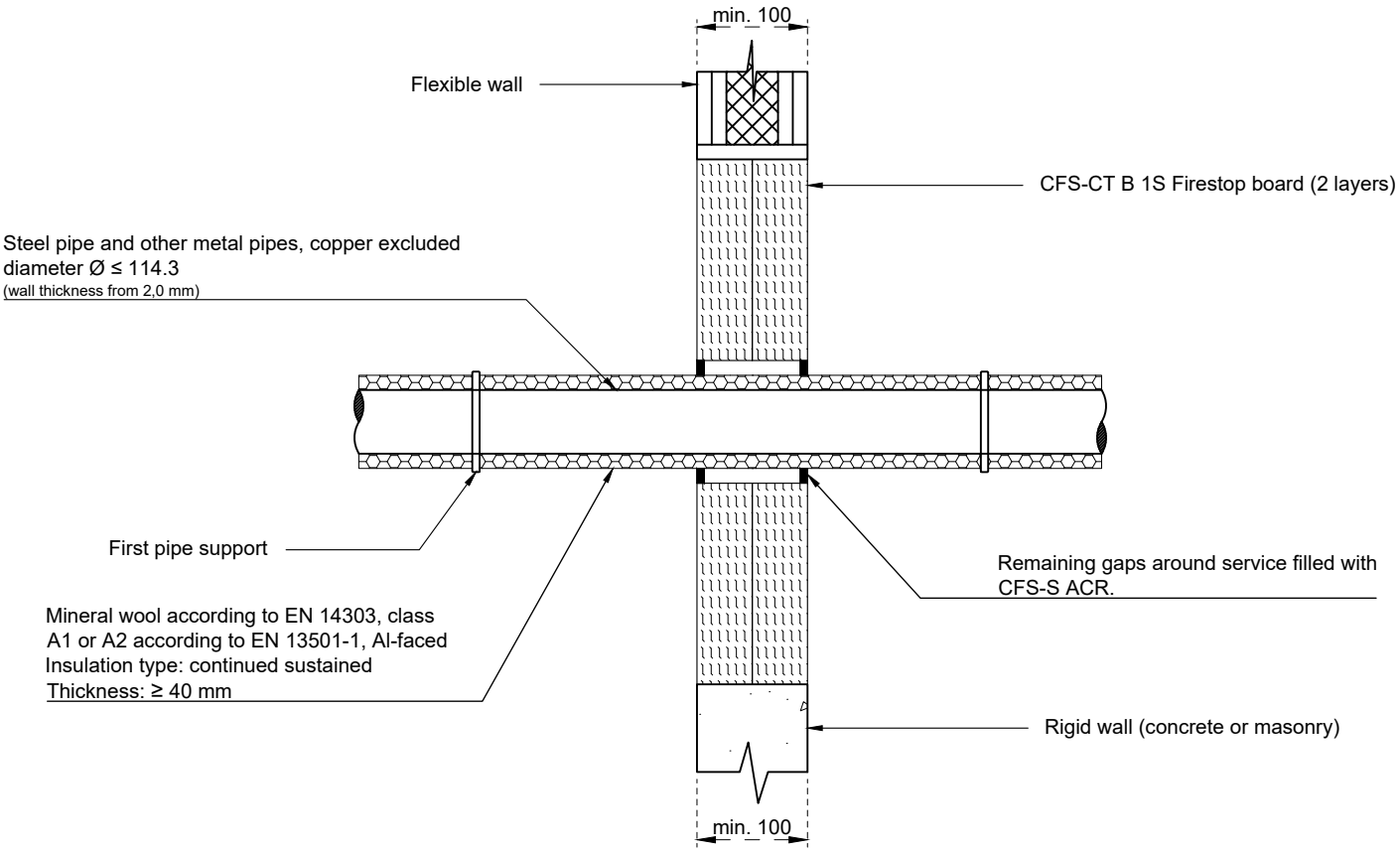
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 04.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429 -4/2024**	**Steel pipes with continued sustined insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the wall - friction fit, the board can be placed anywhere in opening.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

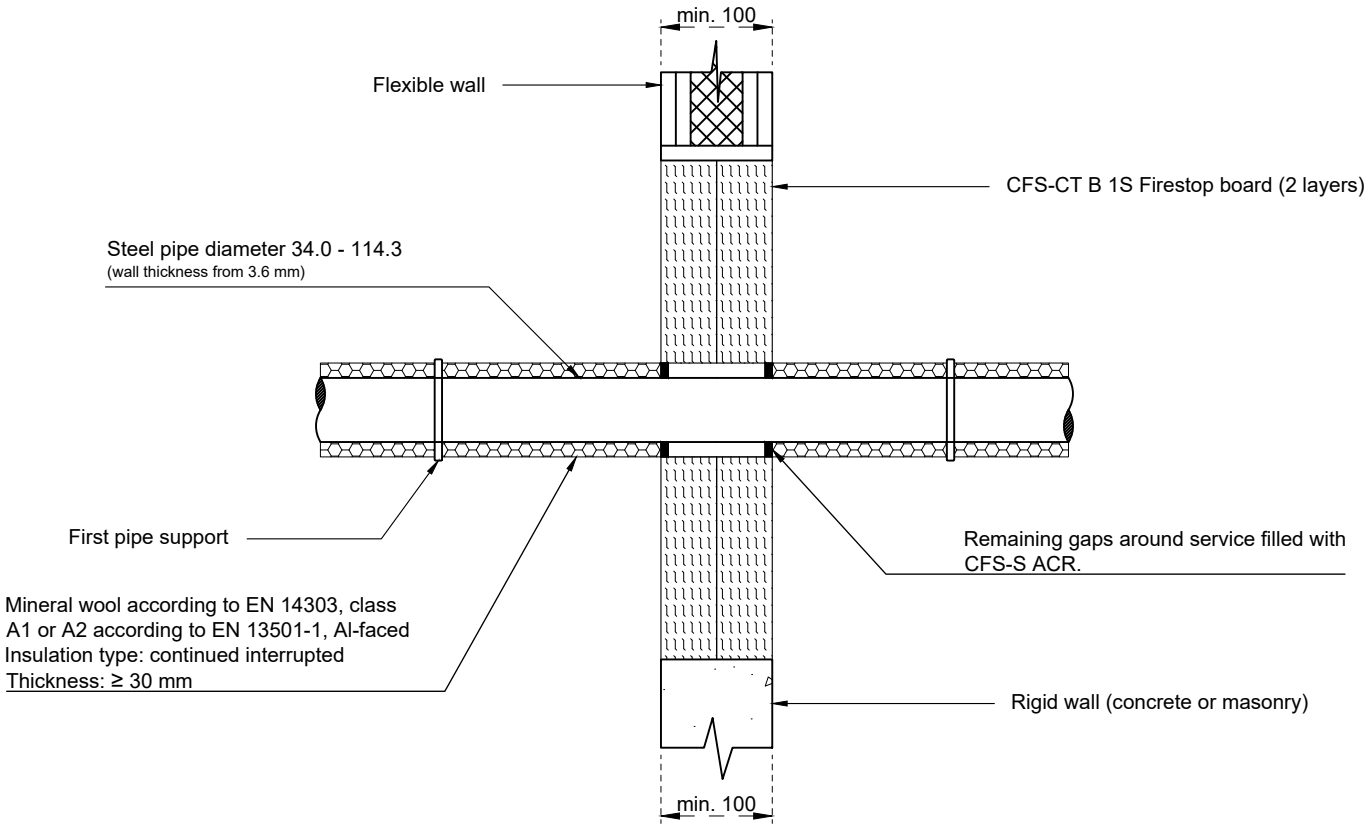
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 0 .v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Steel pipes with continued interrupted insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120-C/U	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

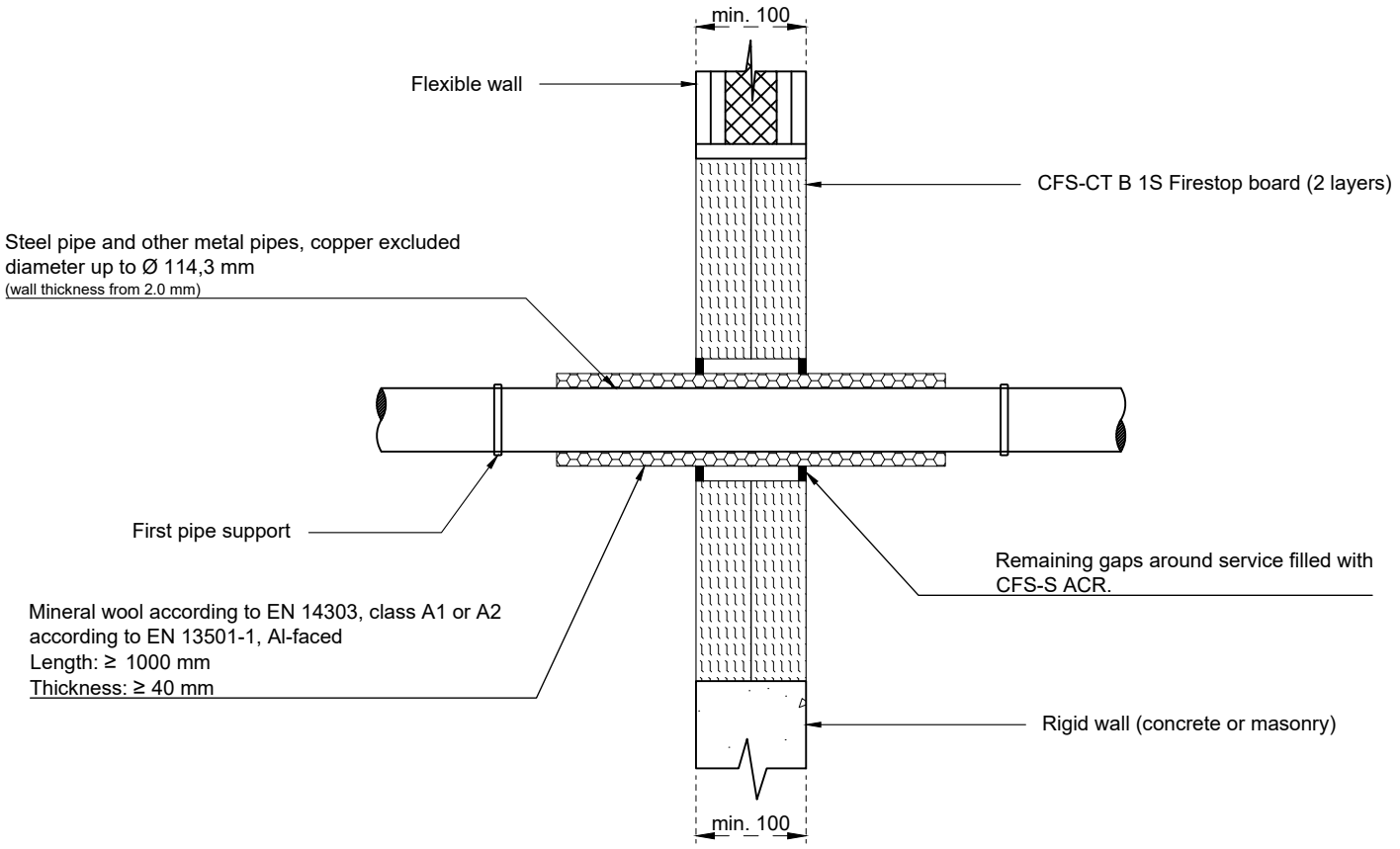
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 06.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Steel pipes with local sustained insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

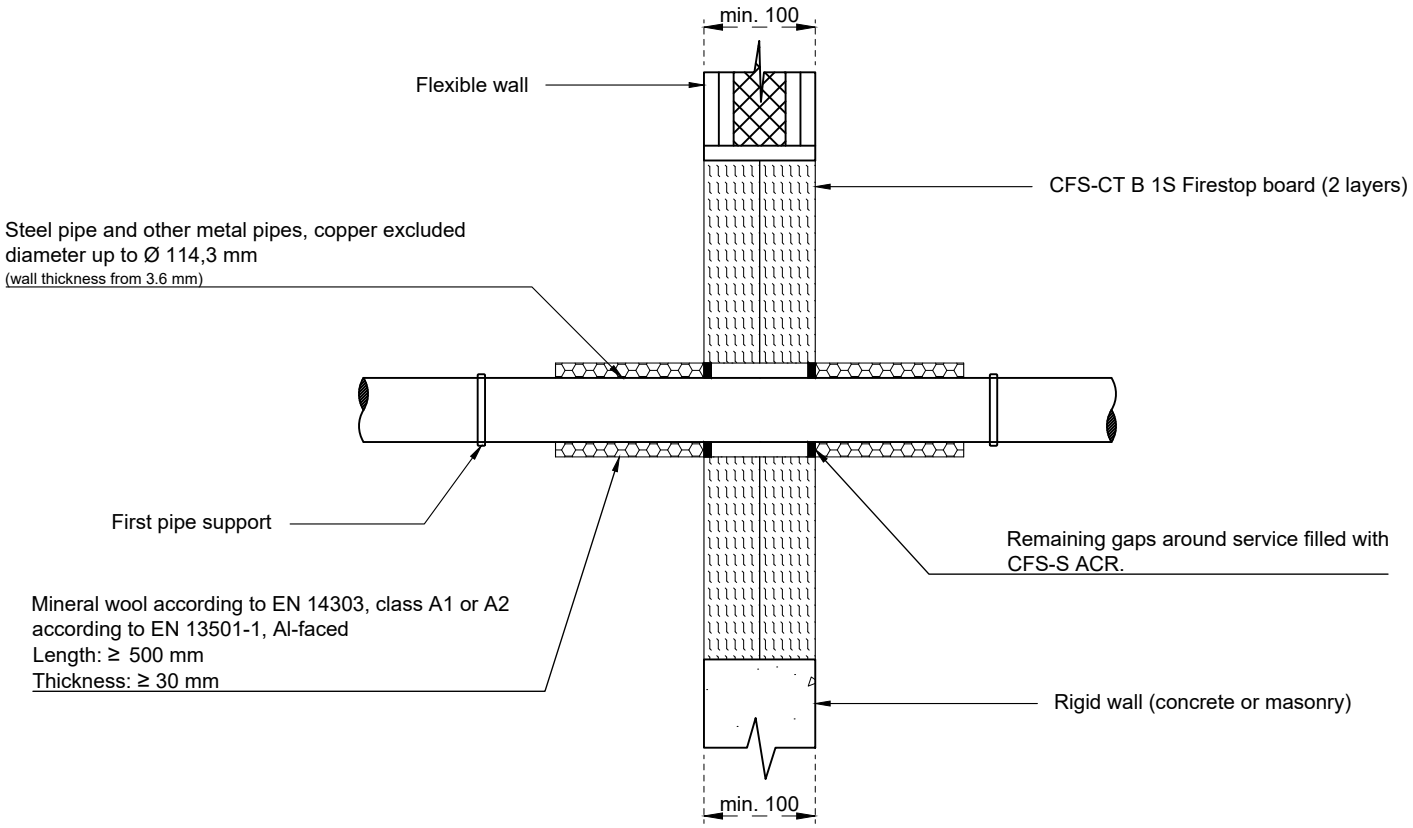
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 80.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429**	**Steel pipes with local interrupted insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120-C/U	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

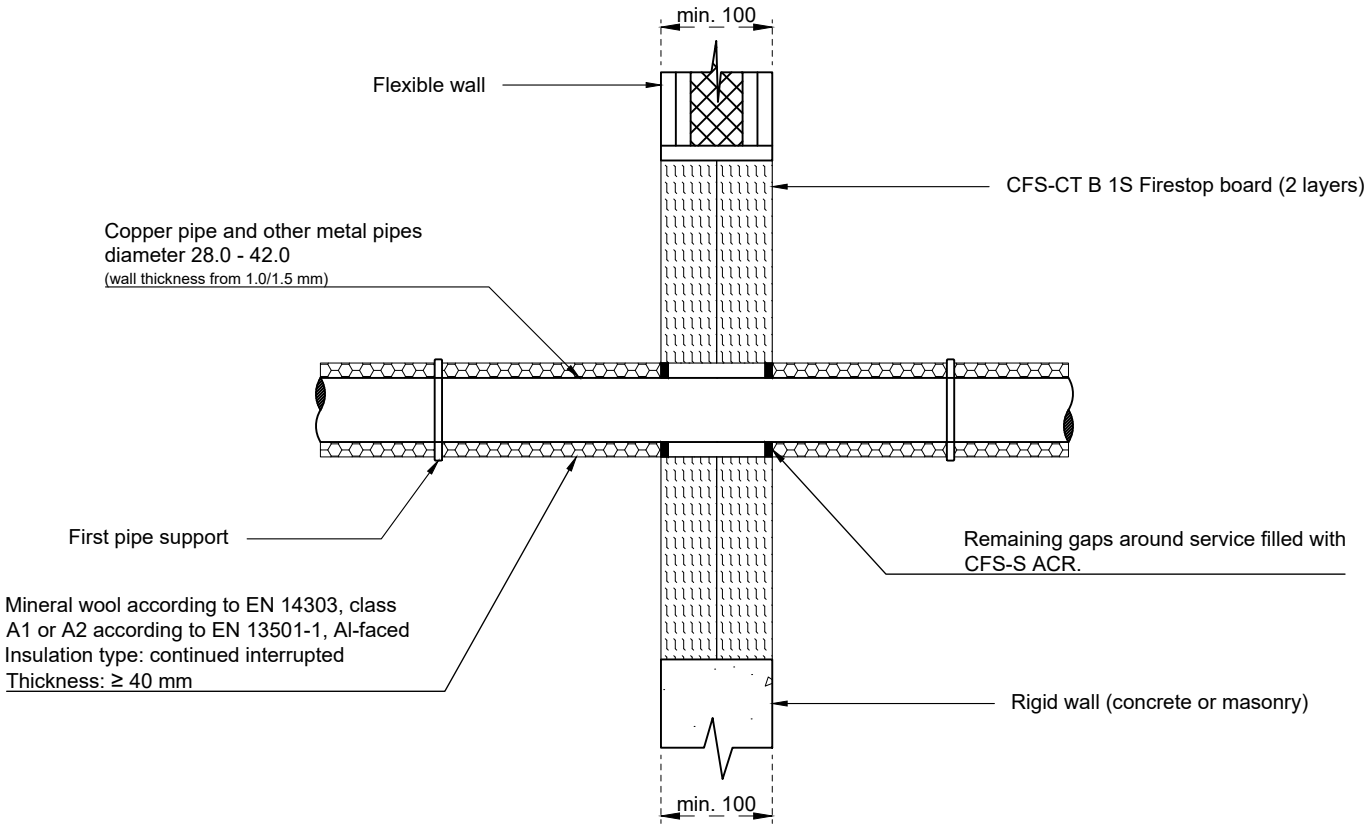
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 0 .v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes with continued interrupted insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120-C/U	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the wall - friction fit, the board can be placed anywhere in opening.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR**.**

Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

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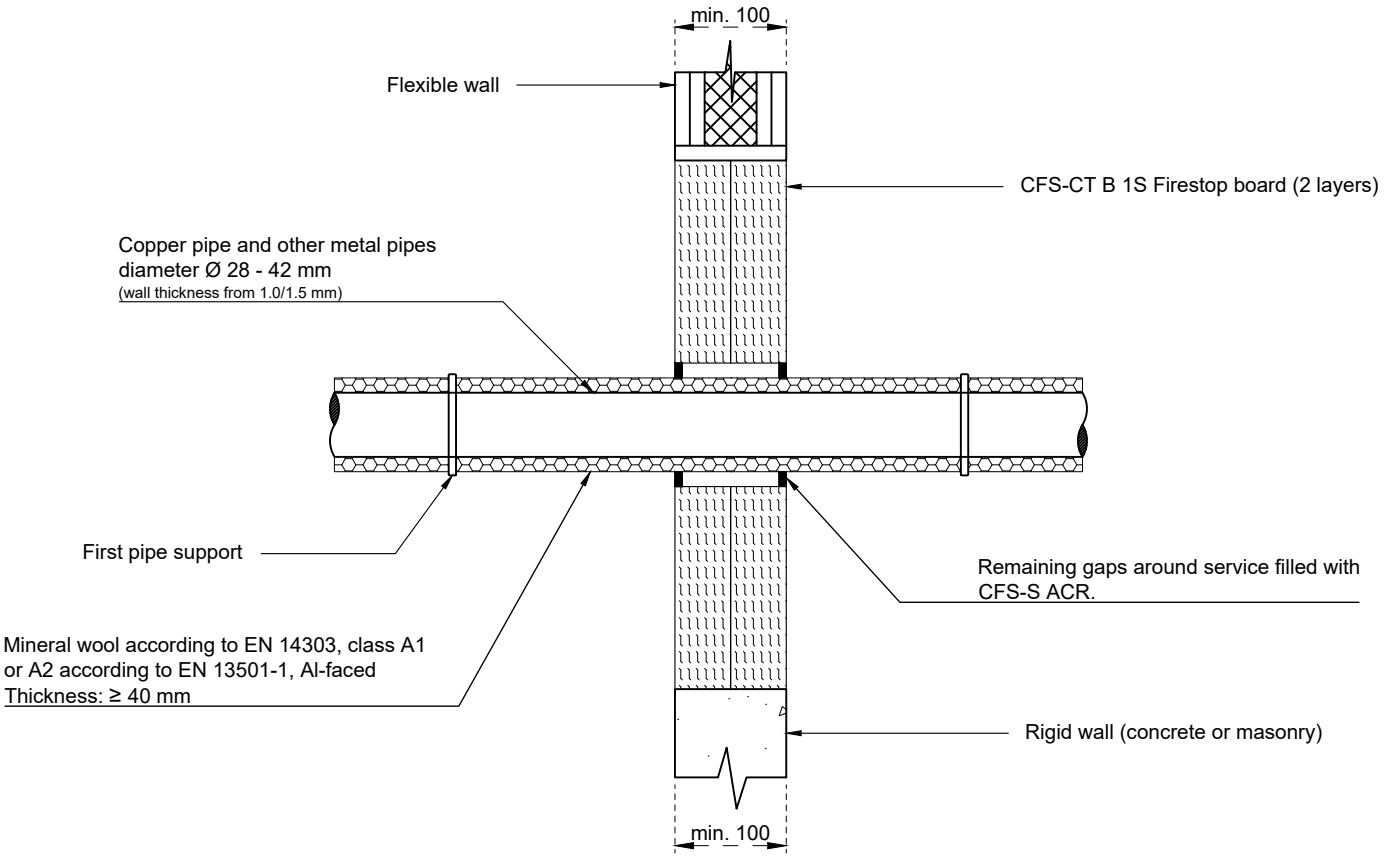
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 07.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes with continued sustained mineral wool**	**CFS-CT** REV: **01**
	Fire Rating EI 120-C/U	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

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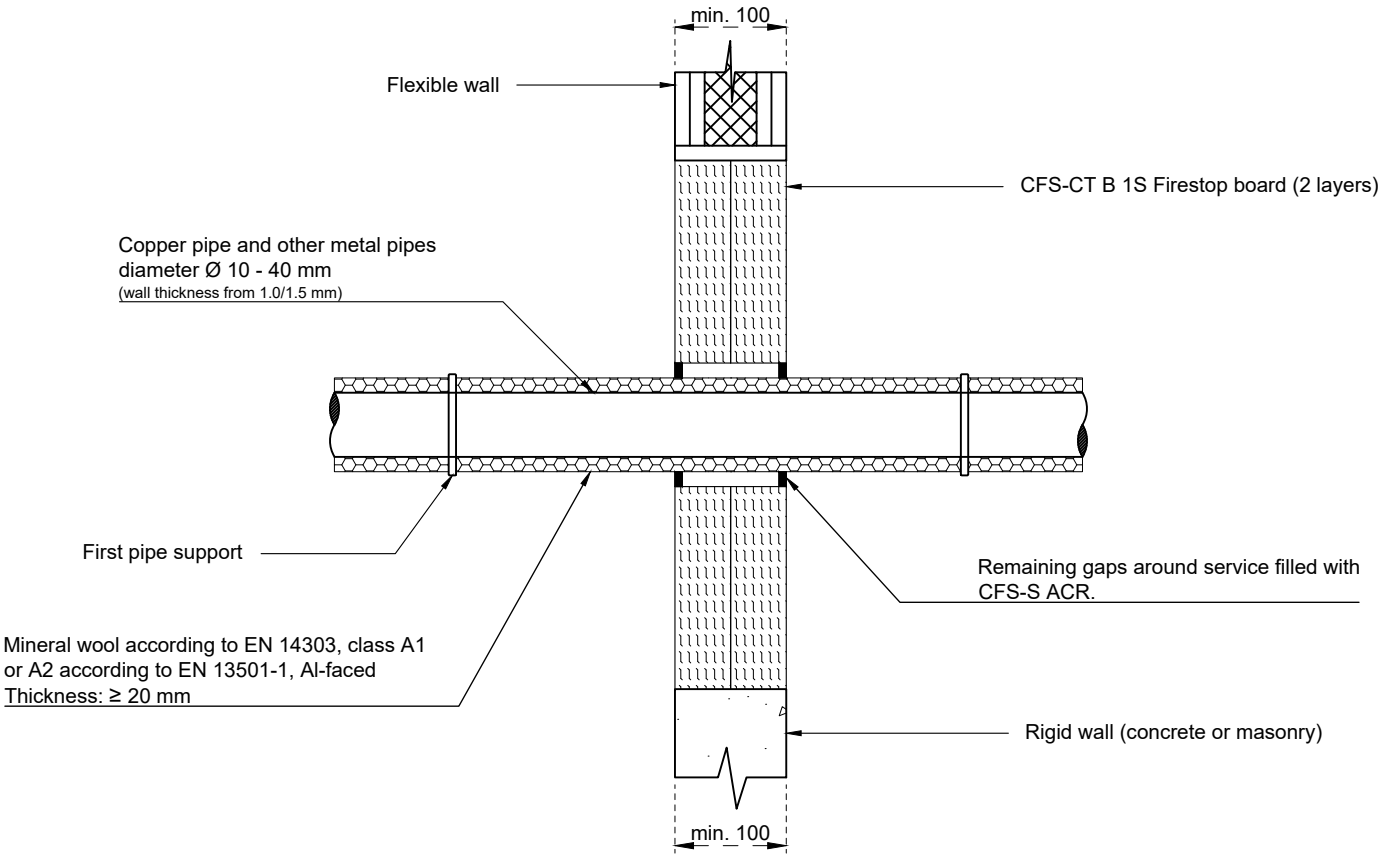
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 08.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes with continued sustained mineral wool**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

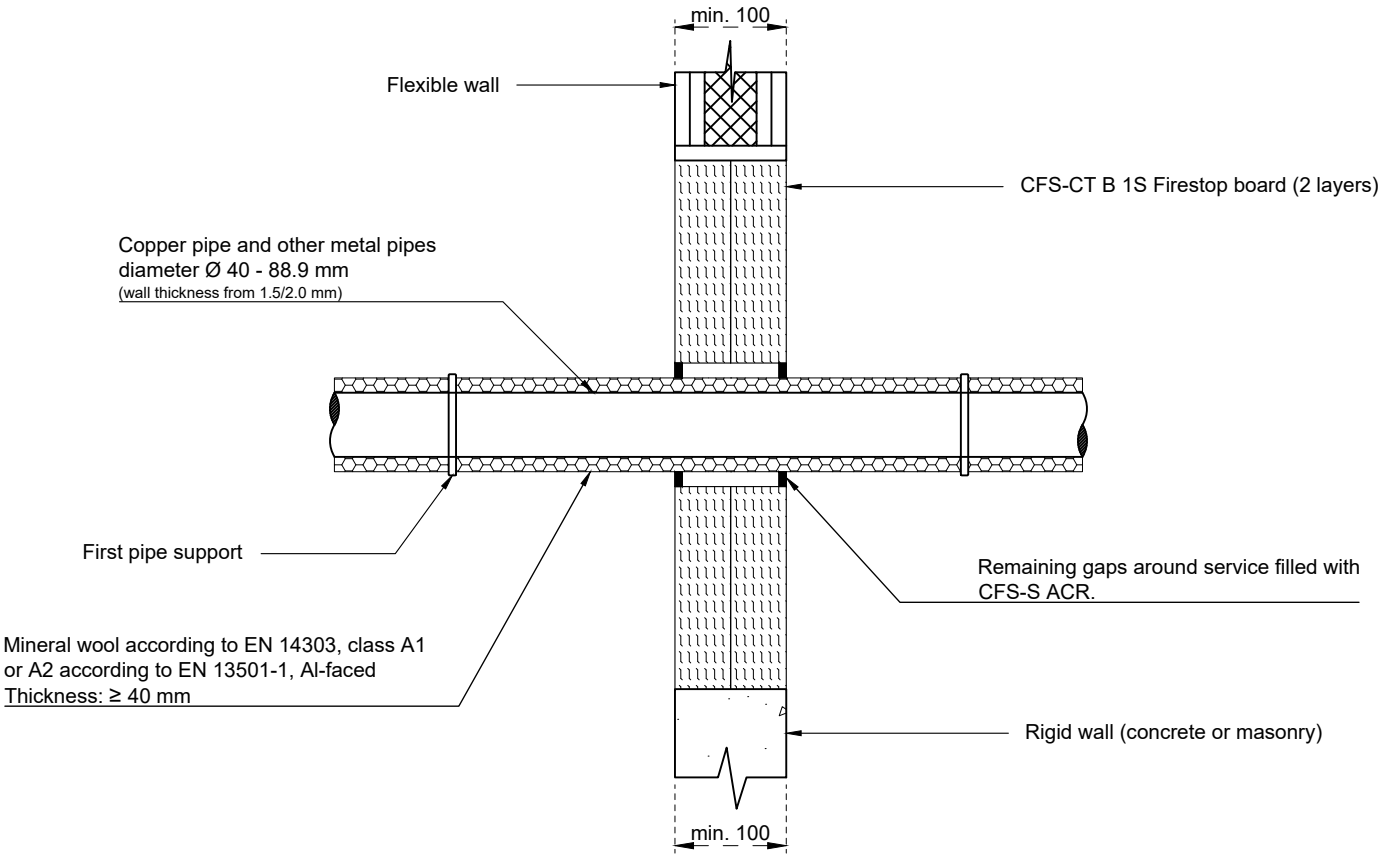
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 08.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes with continued sustained mineral wool**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

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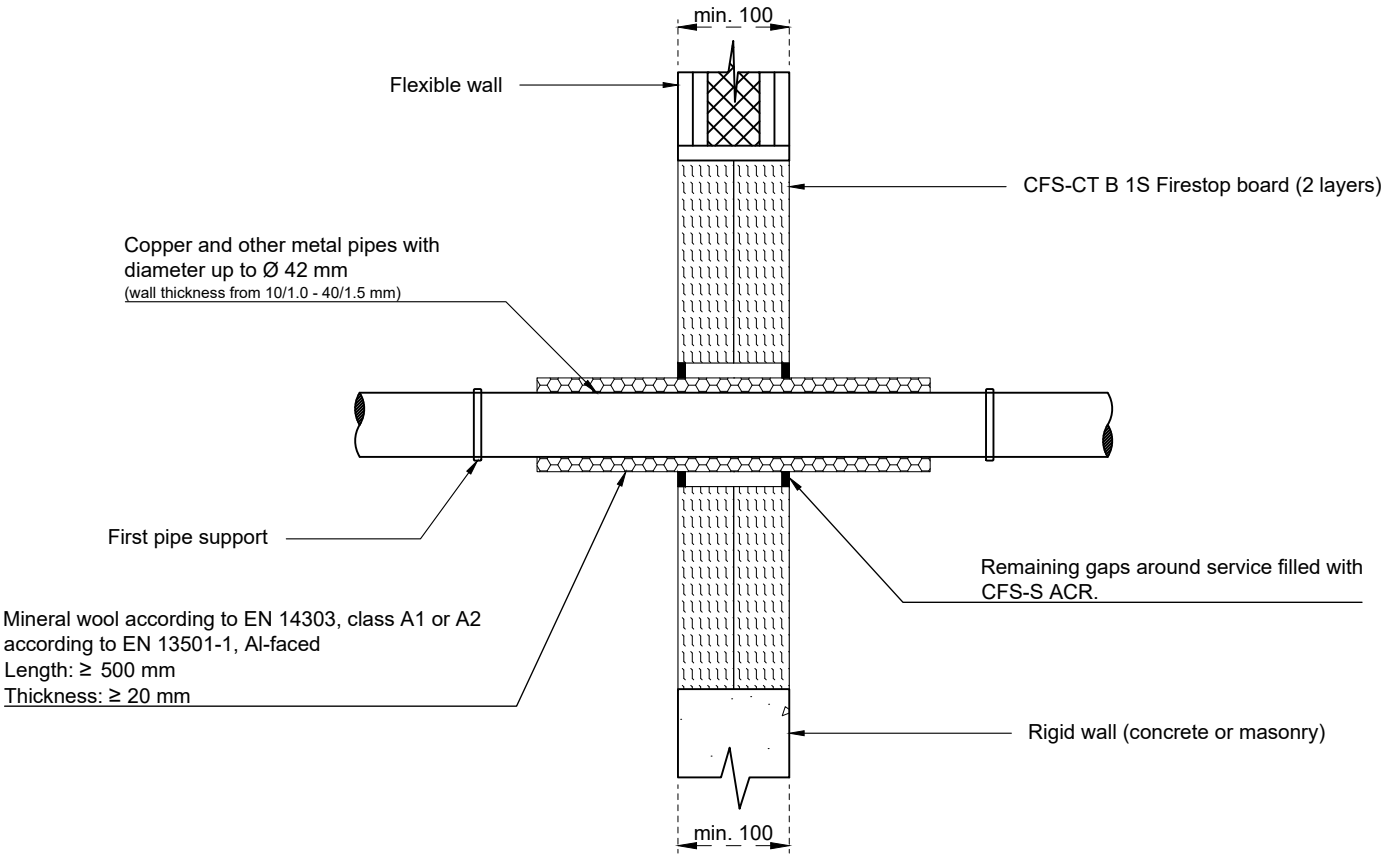
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 81.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes with local sustained insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

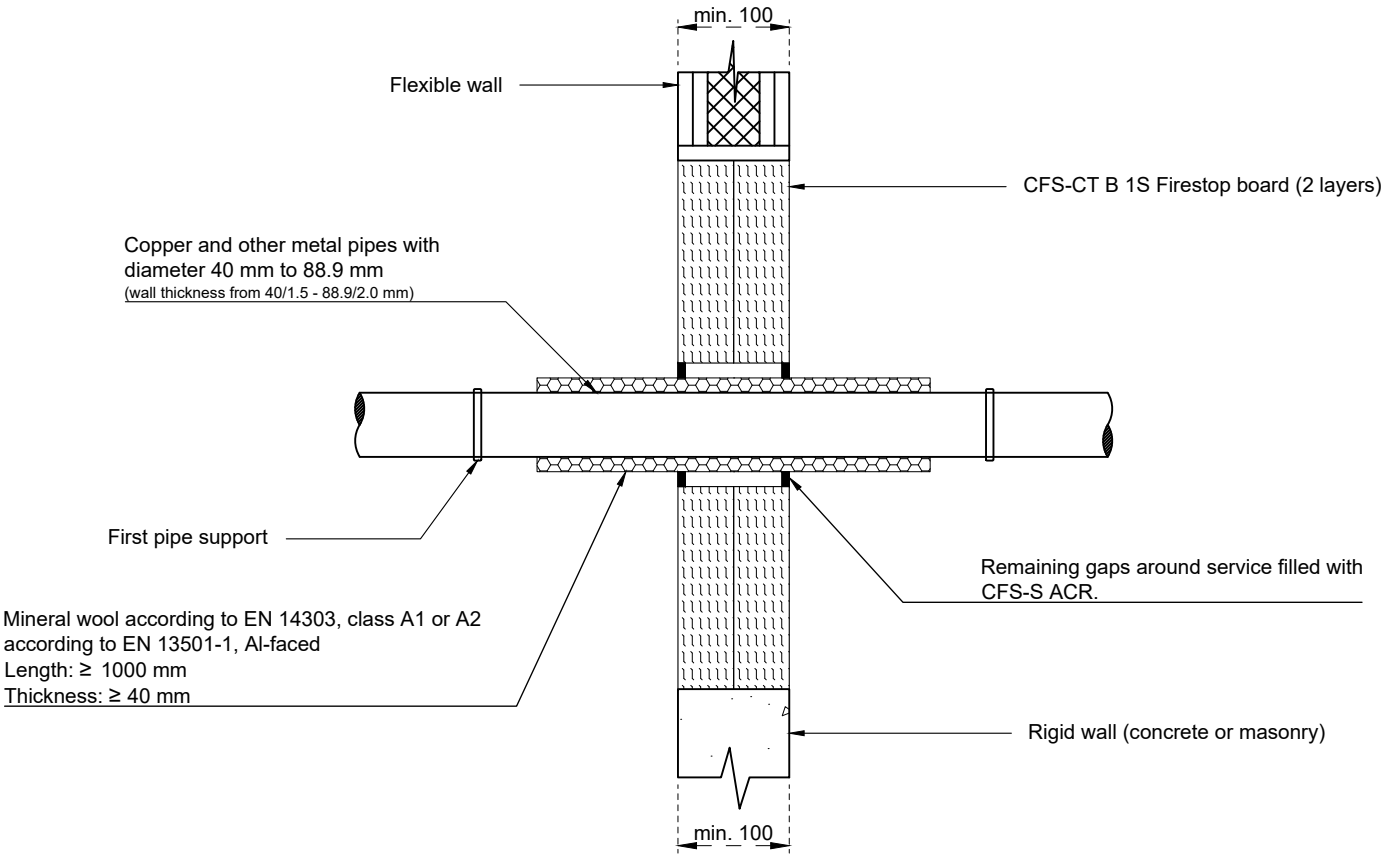
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 82.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes with local sustained insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

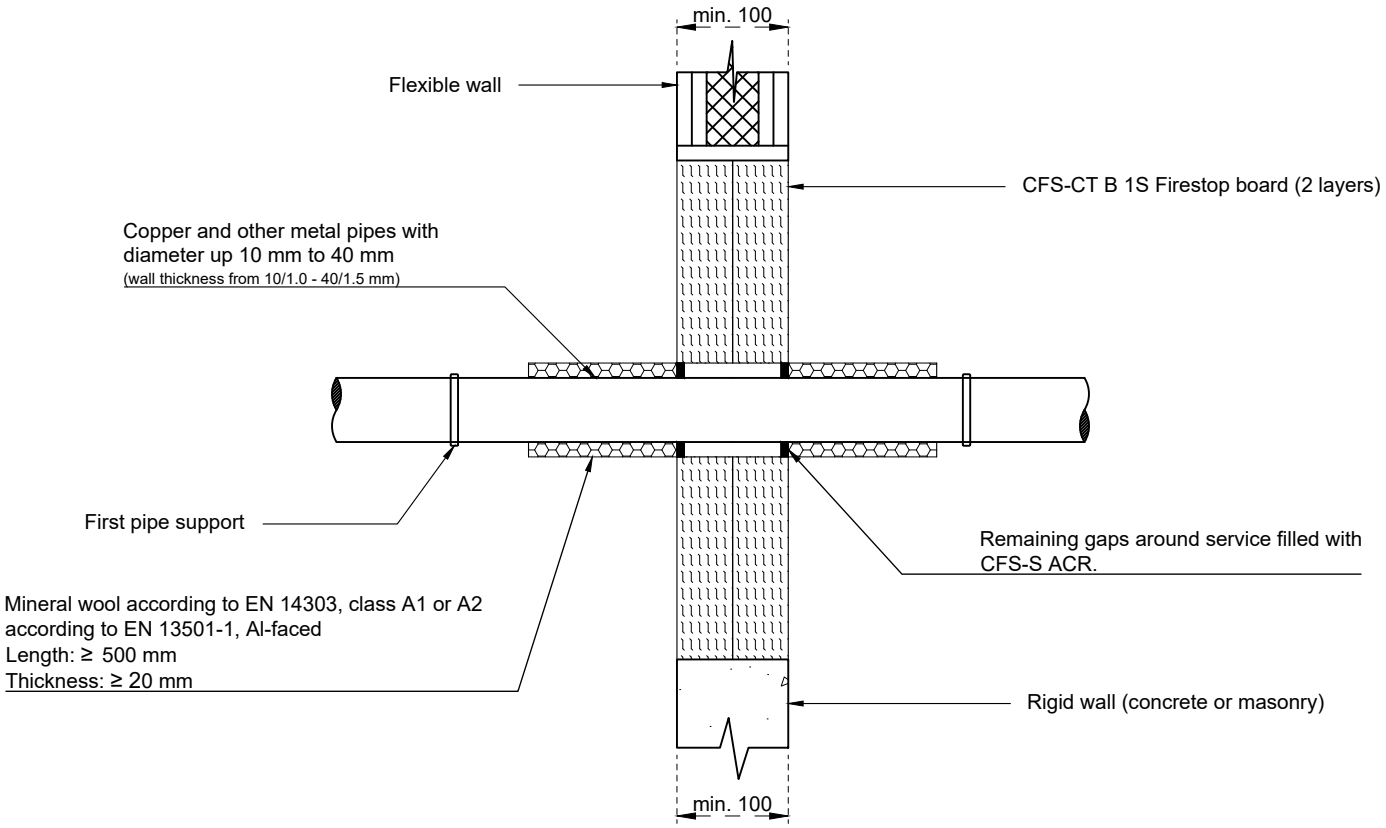
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 83.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429**	**Copper pipes with local interrupted insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120-C/U	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

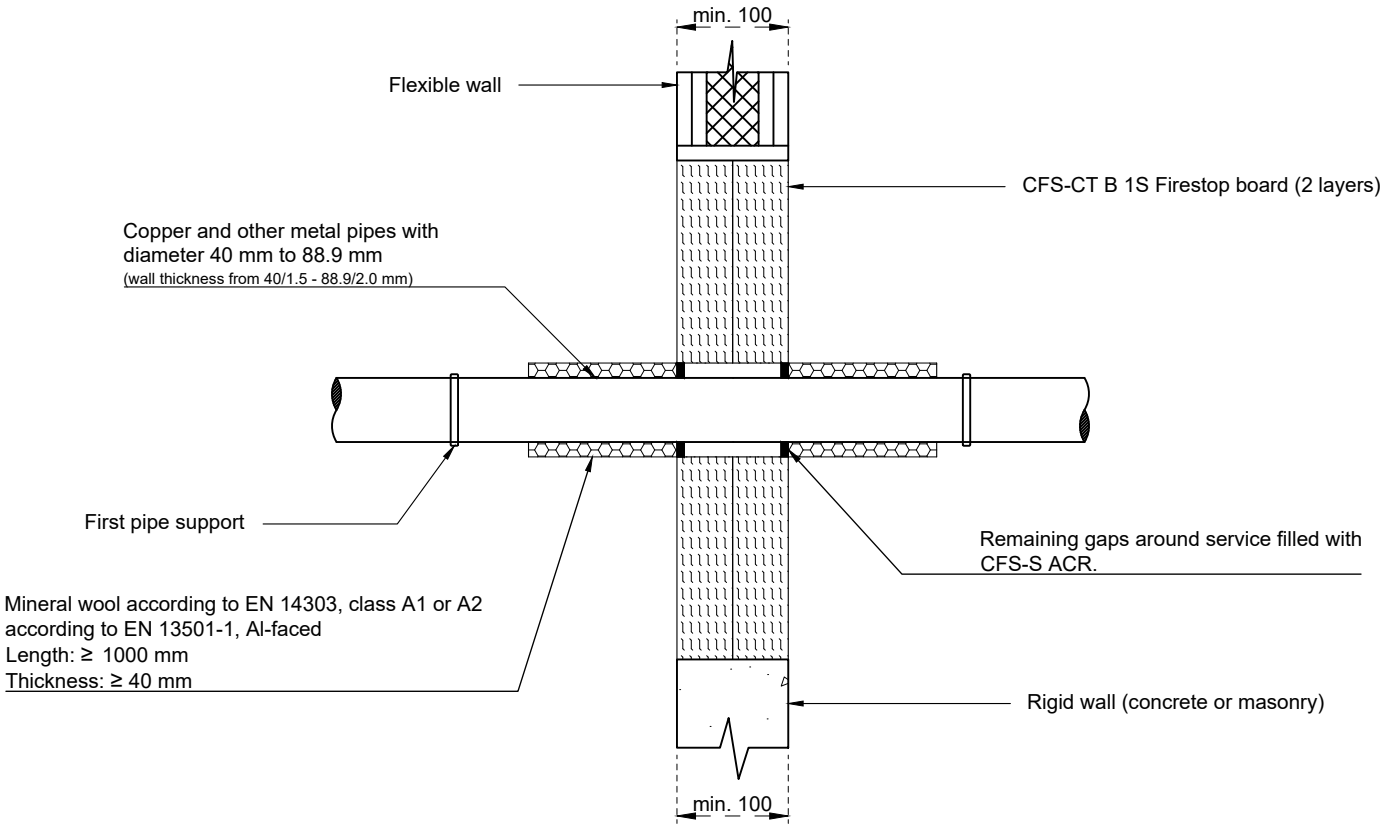
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal Pipe Penetration**	ID: **CT B1S 84.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429**	**Copper pipes with local interrupted insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

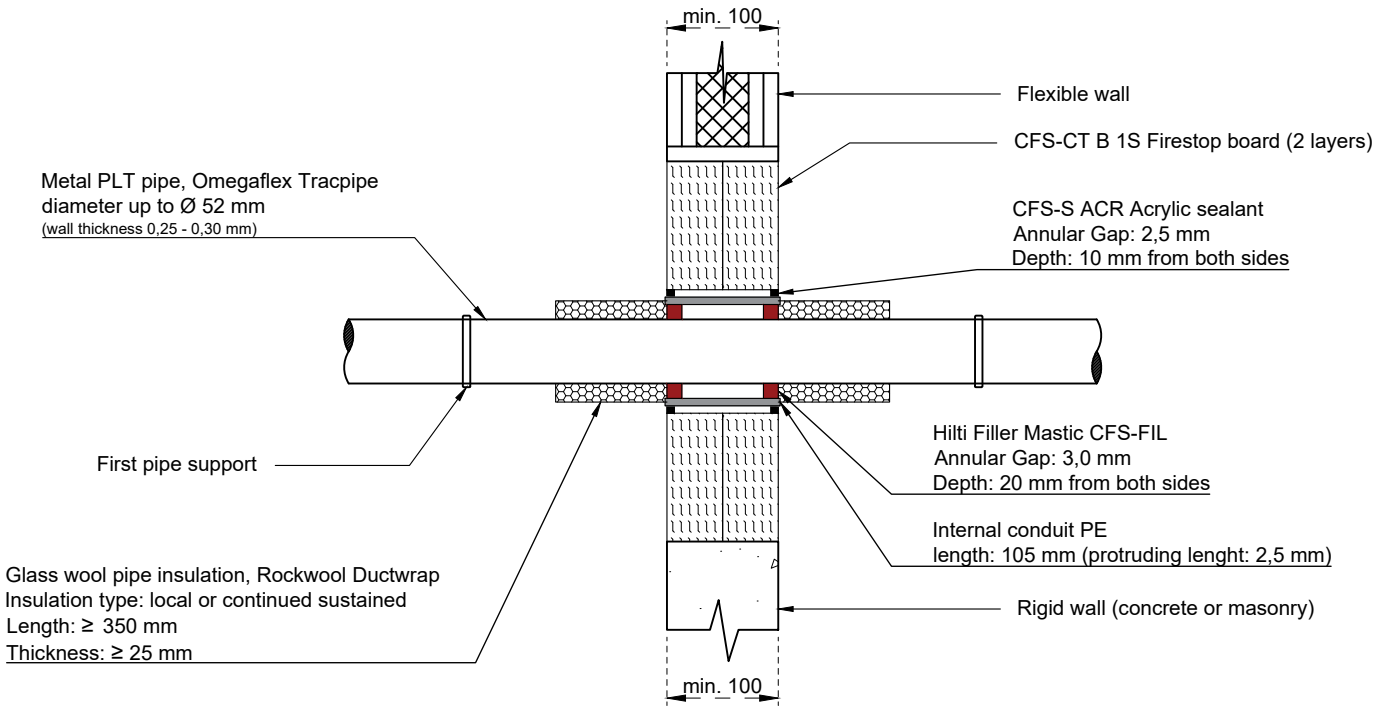
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Metal PLT Pipe Penetration**	ID: **CT B1S 44.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. Classification report 22824B**	**Omegaflex Tracpipe with CFS-FIL**	**CFS-CT** REV: **01**
	Fire Rating EI 120-C/U	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the wall - friction fit, the board can be placed anywhere in opening.
- Contact phase between board and support construction should be covered by a thin film of CFS-S ACR, flush with both sides of the board, width 1-5 mm.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

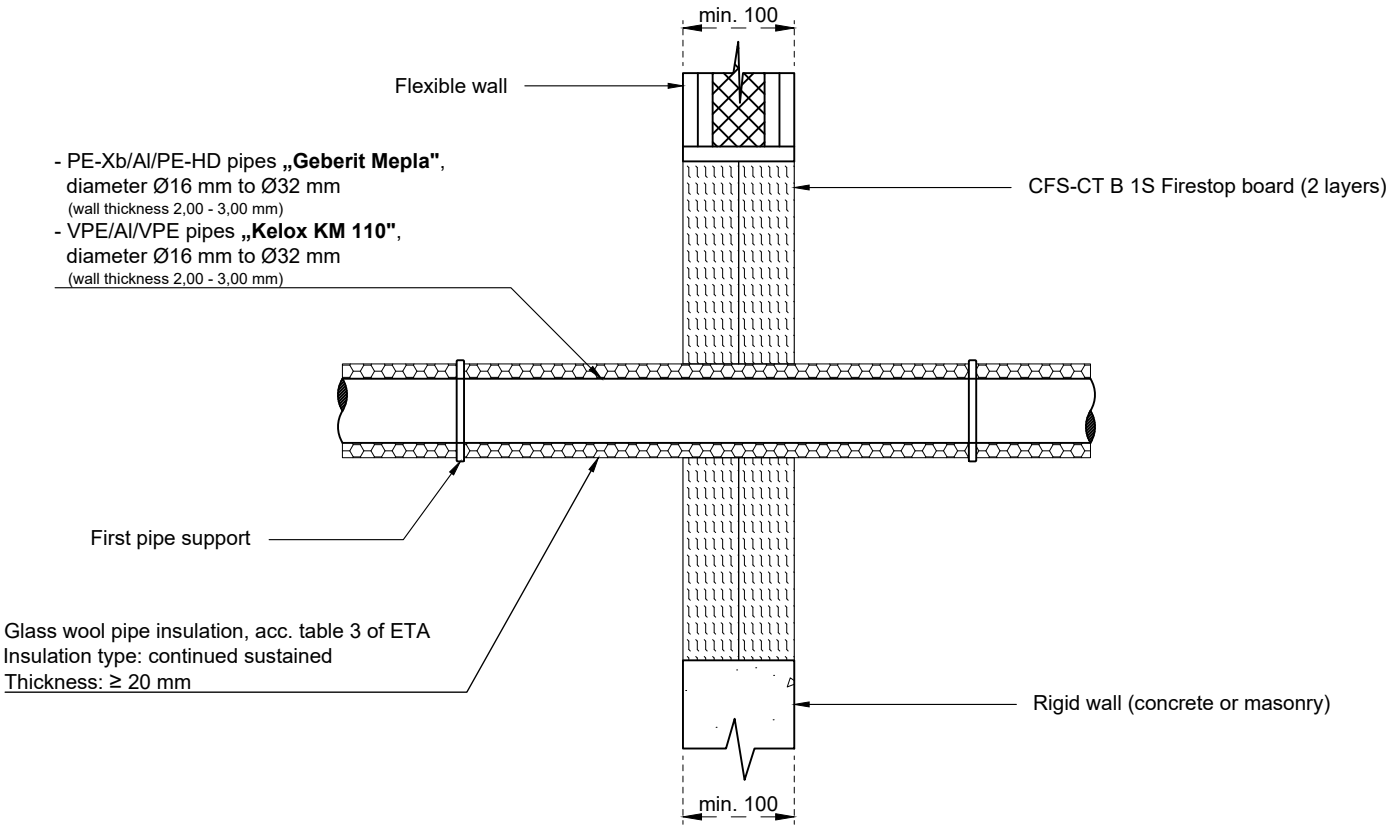
Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance between services and edges:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for this application.
- Miniimum distance 100 mm to seal edge.
- Minimum distance 100 mm to any other penetrant in the opening.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1S 12.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**MLC pipe in mineral wool**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

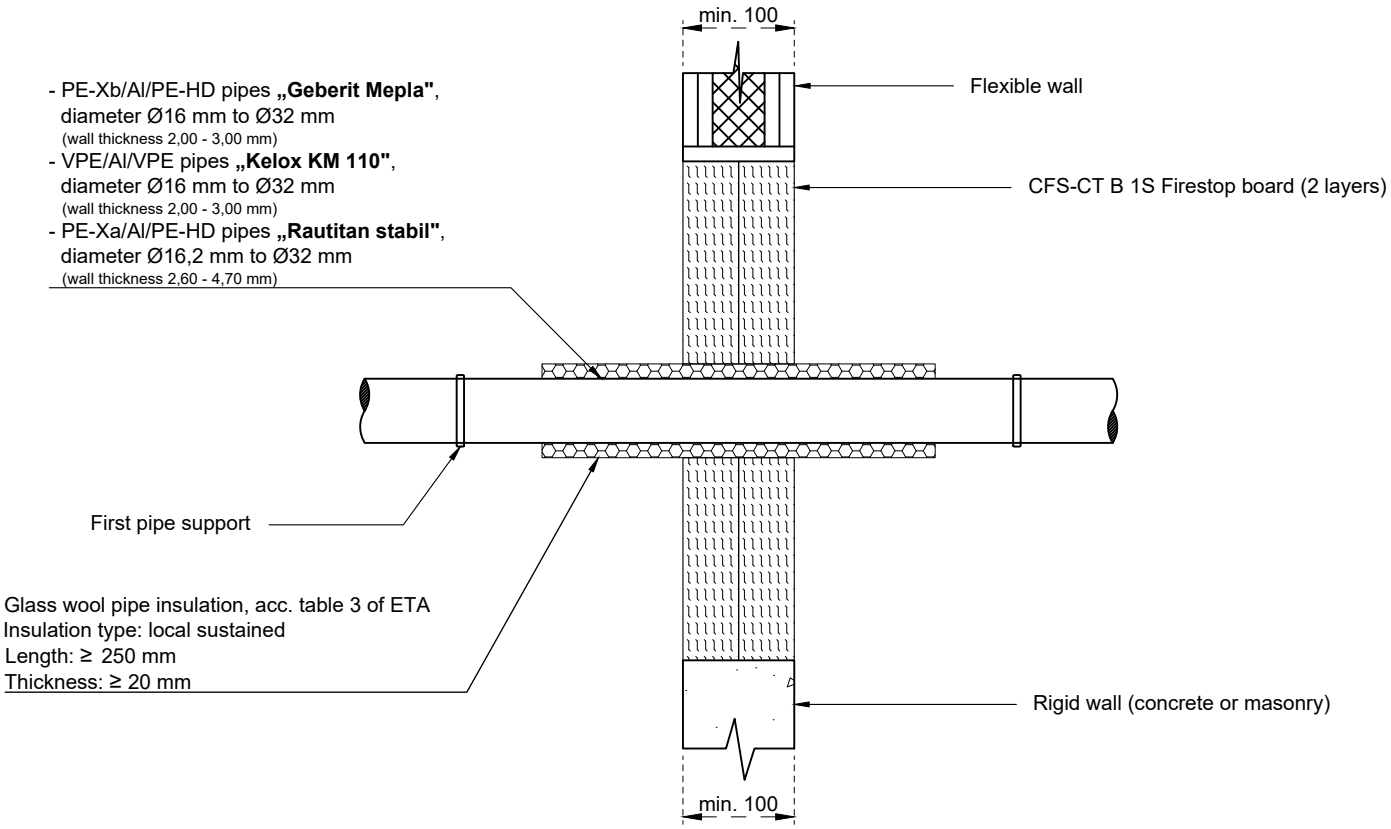
Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1S 13.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429**	**CFS-CT B 1S Firestop Board**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the wall - friction fit, the board can be placed anywhere in opening.
- Contact phase between board and support construction should be covered by a thin film of CFS-S ACR, flush with both sides of the board, width 1-5 mm.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

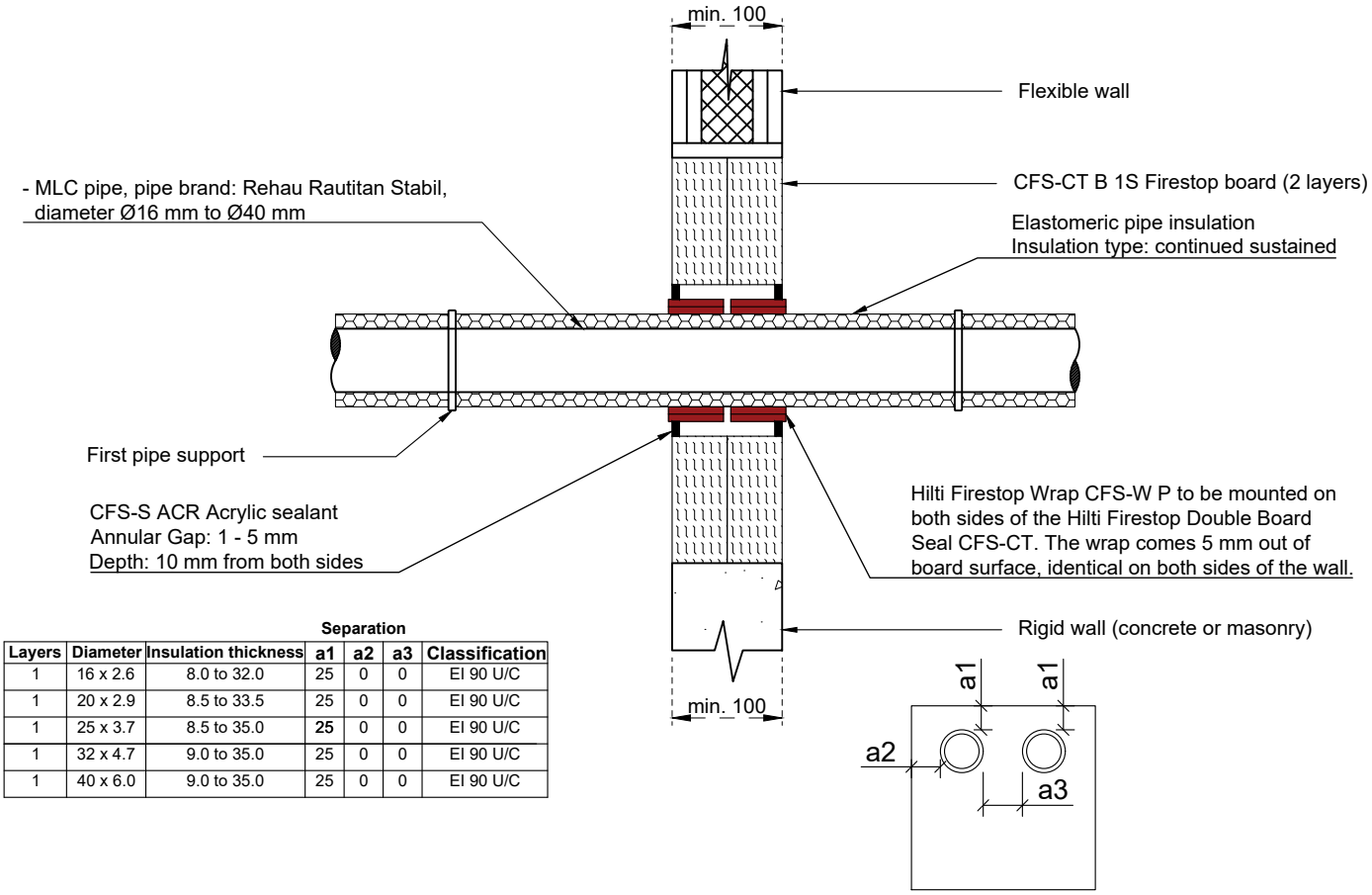
Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.

Minimum distance between services and edges is 0 mm except:
- 50 mm between cables and cable supports above them (s5)
- 3 mm between metal pipes and seal edge (s6) and upper seal edge (s7), respectively
- 17 mm between plastic pipes / pipe closure device and seal edge (s9) and upper seal edge (s10), respectively
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 3 mm between cables / cable supports and metal pipes
- 40 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1S 17.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Rehau Rautitan Stabil with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/2**



Separation

Layers	Diameter	Insulation thickness	a1	a2	a3	Classification
1	16 x 2.6	8.0 to 32.0	25	0	0	EI 90 U/C
1	20 x 2.9	8.5 to 33.5	25	0	0	EI 90 U/C
1	25 x 3.7	8.5 to 35.0	25	0	0	EI 90 U/C
1	32 x 4.7	9.0 to 35.0	25	0	0	EI 90 U/C
1	40 x 6.0	9.0 to 35.0	25	0	0	EI 90 U/C

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

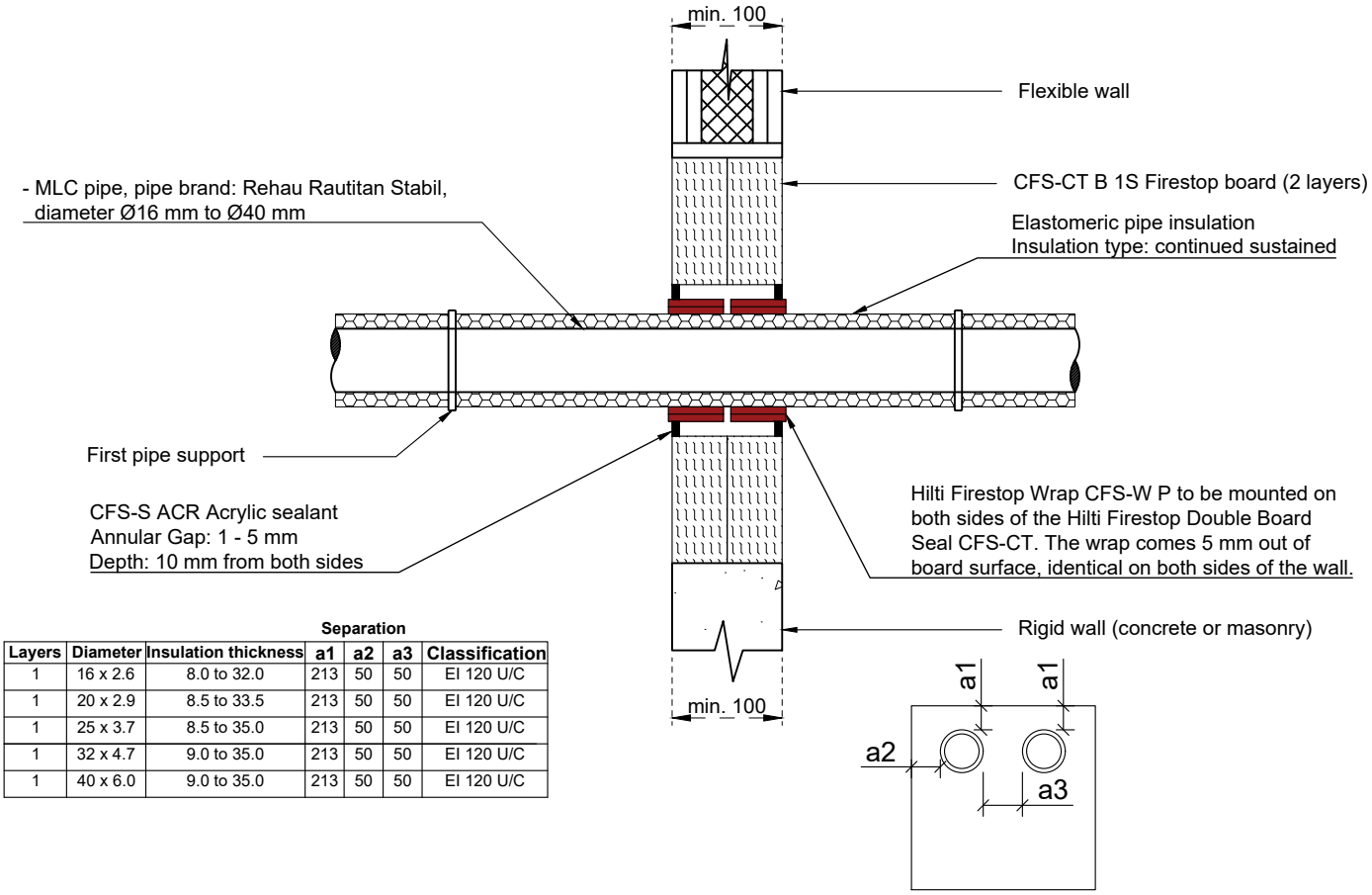
Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1S 17.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Rehau Rautitan Stabil with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 2/2**



Separation

Layers	Diameter	Insulation thickness	a1	a2	a3	Classification
1	16 x 2.6	8.0 to 32.0	213	50	50	EI 120 U/C
1	20 x 2.9	8.5 to 33.5	213	50	50	EI 120 U/C
1	25 x 3.7	8.5 to 35.0	213	50	50	EI 120 U/C
1	32 x 4.7	9.0 to 35.0	213	50	50	EI 120 U/C
1	40 x 6.0	9.0 to 35.0	213	50	50	EI 120 U/C

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
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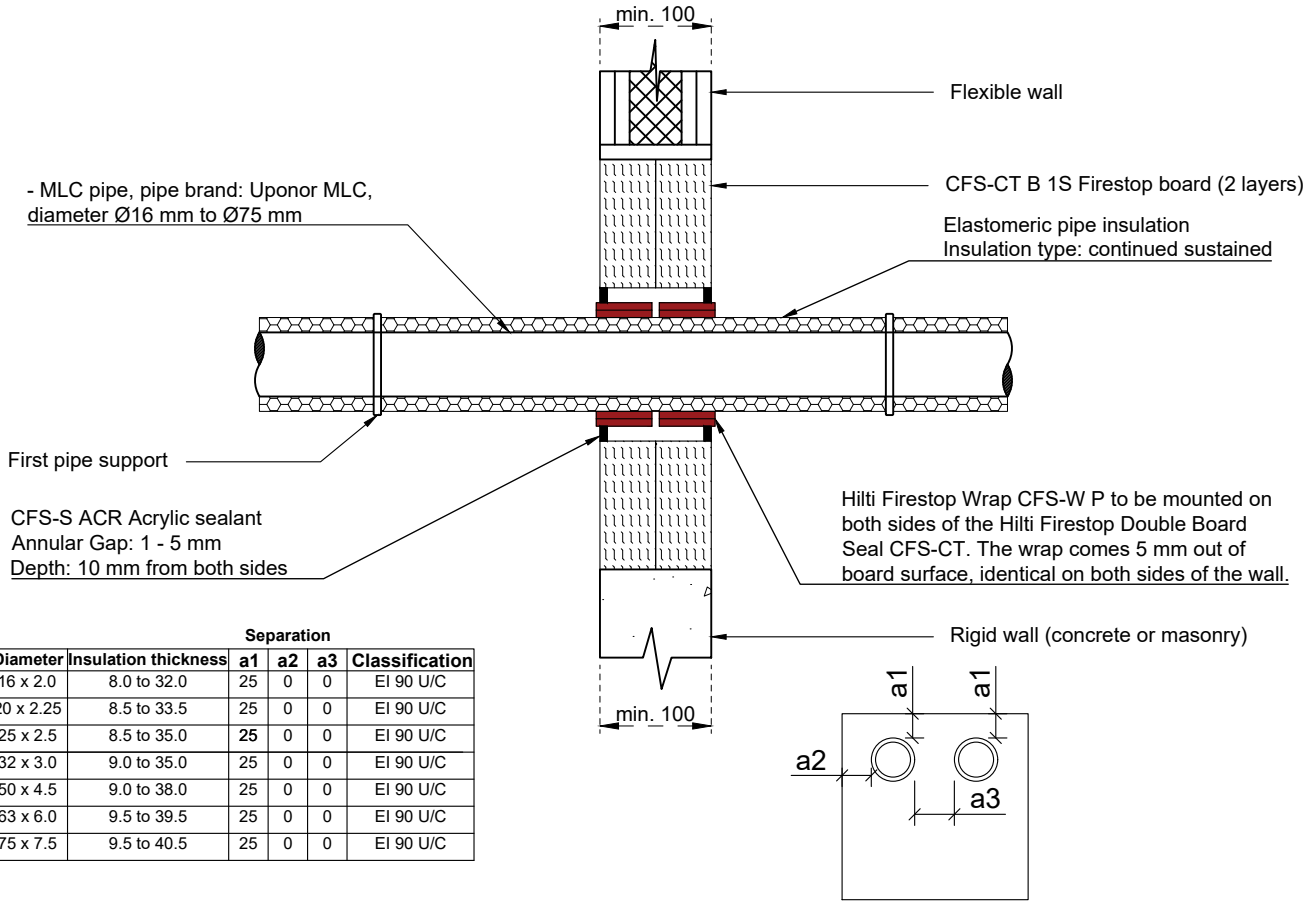
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Al-composite Pipe Penetration**	**CT B1S 17.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Uponor MLC with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/2**



Separation

Layers	Diameter	Insulation thickness	a1	a2	a3	Classification
1	16 x 2.0	8.0 to 32.0	25	0	0	EI 90 U/C
1	20 x 2.25	8.5 to 33.5	25	0	0	EI 90 U/C
1	25 x 2.5	8.5 to 35.0	25	0	0	EI 90 U/C
1	32 x 3.0	9.0 to 35.0	25	0	0	EI 90 U/C
2	50 x 4.5	9.0 to 38.0	25	0	0	EI 90 U/C
2	63 x 6.0	9.5 to 39.5	25	0	0	EI 90 U/C
2	75 x 7.5	9.5 to 40.5	25	0	0	EI 90 U/C

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

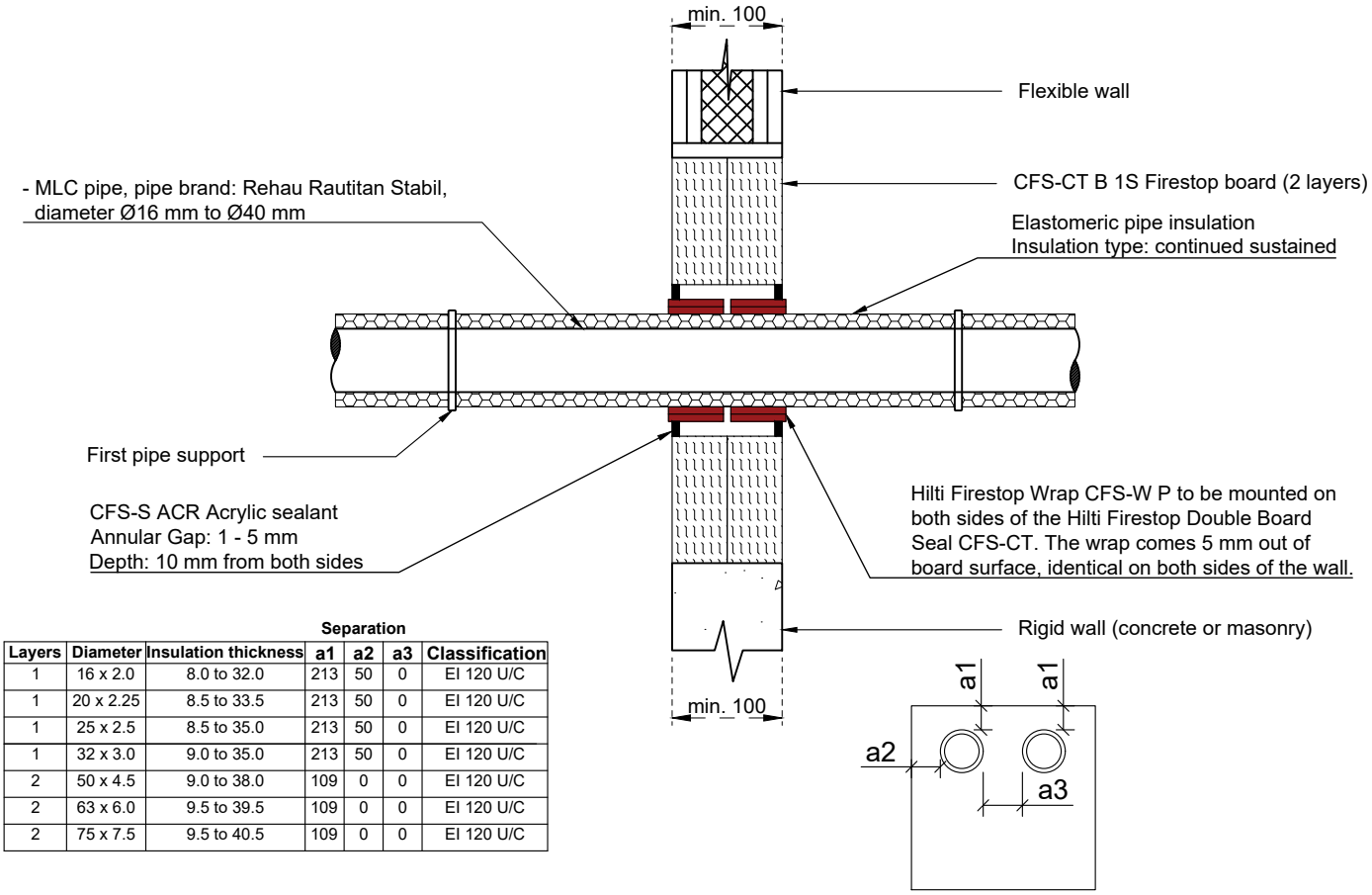
Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1S 17.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Uponor MLC with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 2/2**



Separation

Layers	Diameter	Insulation thickness	a1	a2	a3	Classification
1	16 x 2.0	8.0 to 32.0	213	50	0	EI 120 U/C
1	20 x 2.25	8.5 to 33.5	213	50	0	EI 120 U/C
1	25 x 2.5	8.5 to 35.0	213	50	0	EI 120 U/C
1	32 x 3.0	9.0 to 35.0	213	50	0	EI 120 U/C
2	50 x 4.5	9.0 to 38.0	109	0	0	EI 120 U/C
2	63 x 6.0	9.5 to 39.5	109	0	0	EI 120 U/C
2	75 x 7.5	9.5 to 40.5	109	0	0	EI 120 U/C

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

Gap seal
- Remaining gaps to be sealed completely with CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

APPLICATION:

Al-composite Pipe Penetration

CT B1S 17.v1

INFORMATION:
- **Not to scale**
- **All units are in millimetres**
- **Tested according EN 1366-3**
- **Coverage acc. ETA 11/0429**
- **4/2024**

Geberit Mepla with CFS-W P

CFS-CT REV: **01**

Fire Rating EI 90-U/C

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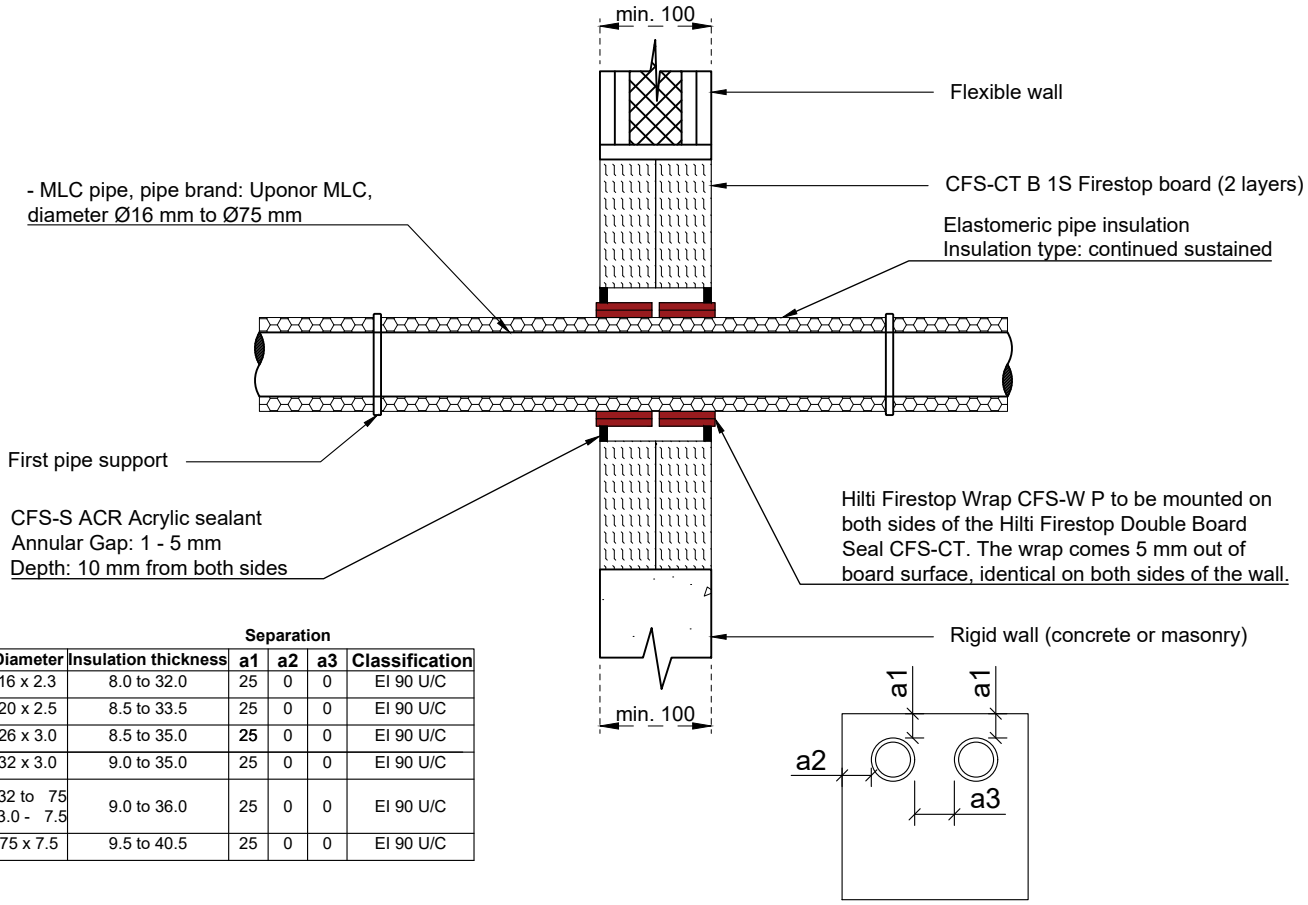


Separation

Layers	Diameter	Insulation thickness	a1	a2	a3	Classification
1	16 x 2.3	8.0 to 32.0	25	0	0	EI 90 U/C
1	20 x 2.5	8.5 to 33.5	25	0	0	EI 90 U/C
1	26 x 3.0	8.5 to 35.0	25	0	0	EI 90 U/C
1	32 x 3.0	9.0 to 35.0	25	0	0	EI 90 U/C
2	>32 to 75 >3.0 - 7.5	9.0 to 36.0	25	0	0	EI 90 U/C
2	75 x 7.5	9.5 to 40.5	25	0	0	EI 90 U/C

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

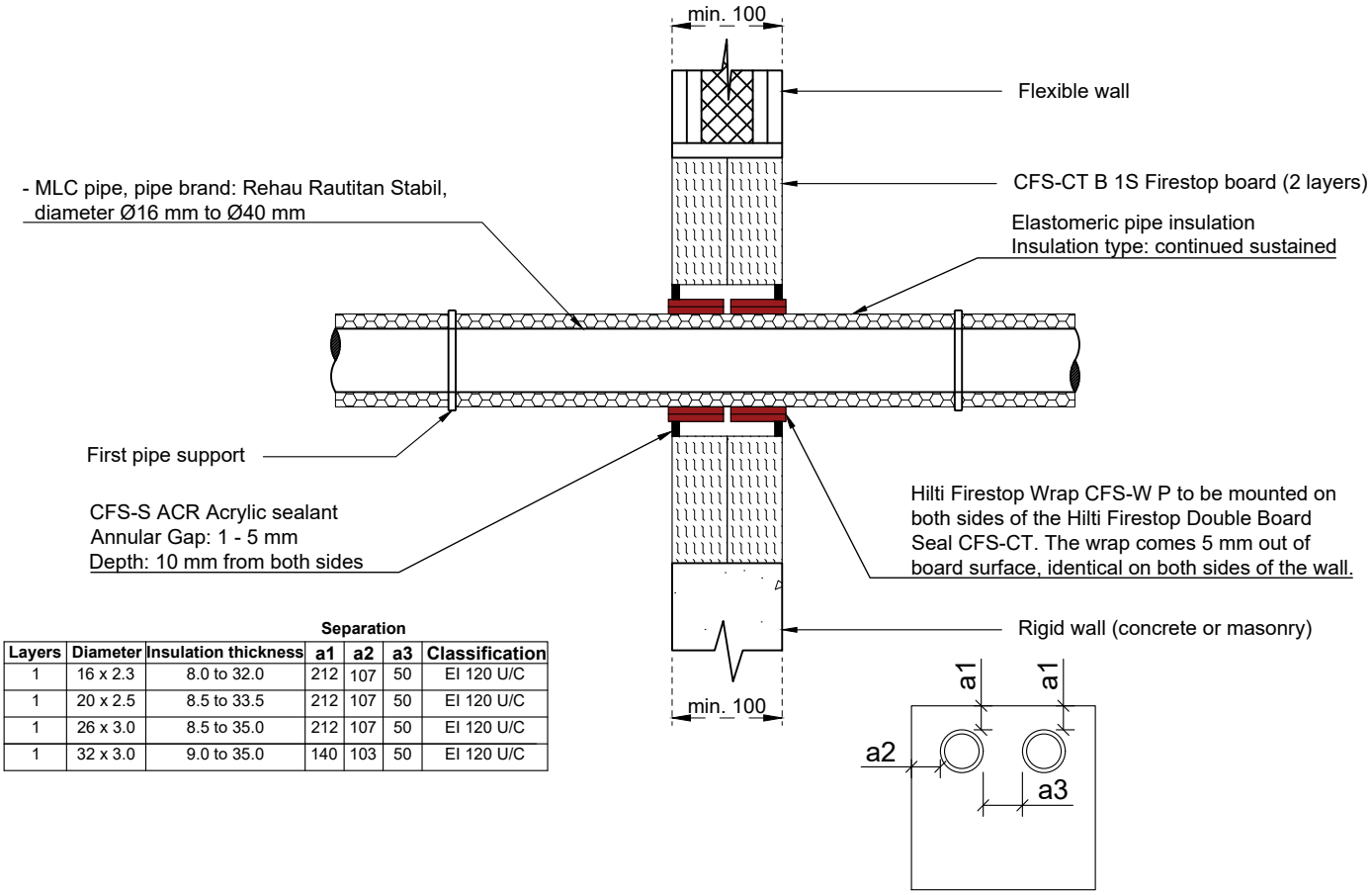
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1S 17.v1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Geberit Mepla with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 120-U/C	**Page 2/2**



Separation

Layers	Diameter	Insulation thickness	a1	a2	a3	Classification
1	16 x 2.3	8.0 to 32.0	212	107	50	EI 120 U/C
1	20 x 2.5	8.5 to 33.5	212	107	50	EI 120 U/C
1	26 x 3.0	8.5 to 35.0	212	107	50	EI 120 U/C
1	32 x 3.0	9.0 to 35.0	140	103	50	EI 120 U/C

Construction details:
- Hilti CFS-CT B 1S - The boards have to be positioned flush to the surface of the building element on each side of the wall.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size in a wall 1800 x 1200 (w x h).

Flexible and rigid walls
- Minimum thickness of 100 mm. comprises timber or steel studs.
- Lined on both faces with minimum 2 layers of minimum 12,5 mm thick board, aperture must be framed.
- Construction itself has been classified according to EN 13501-2.
- Rigid walls must have min. thickness: 100mm and must comprise of concrete, aerated concrete, masonry or brickwork of Min. density 350kg/m^3.

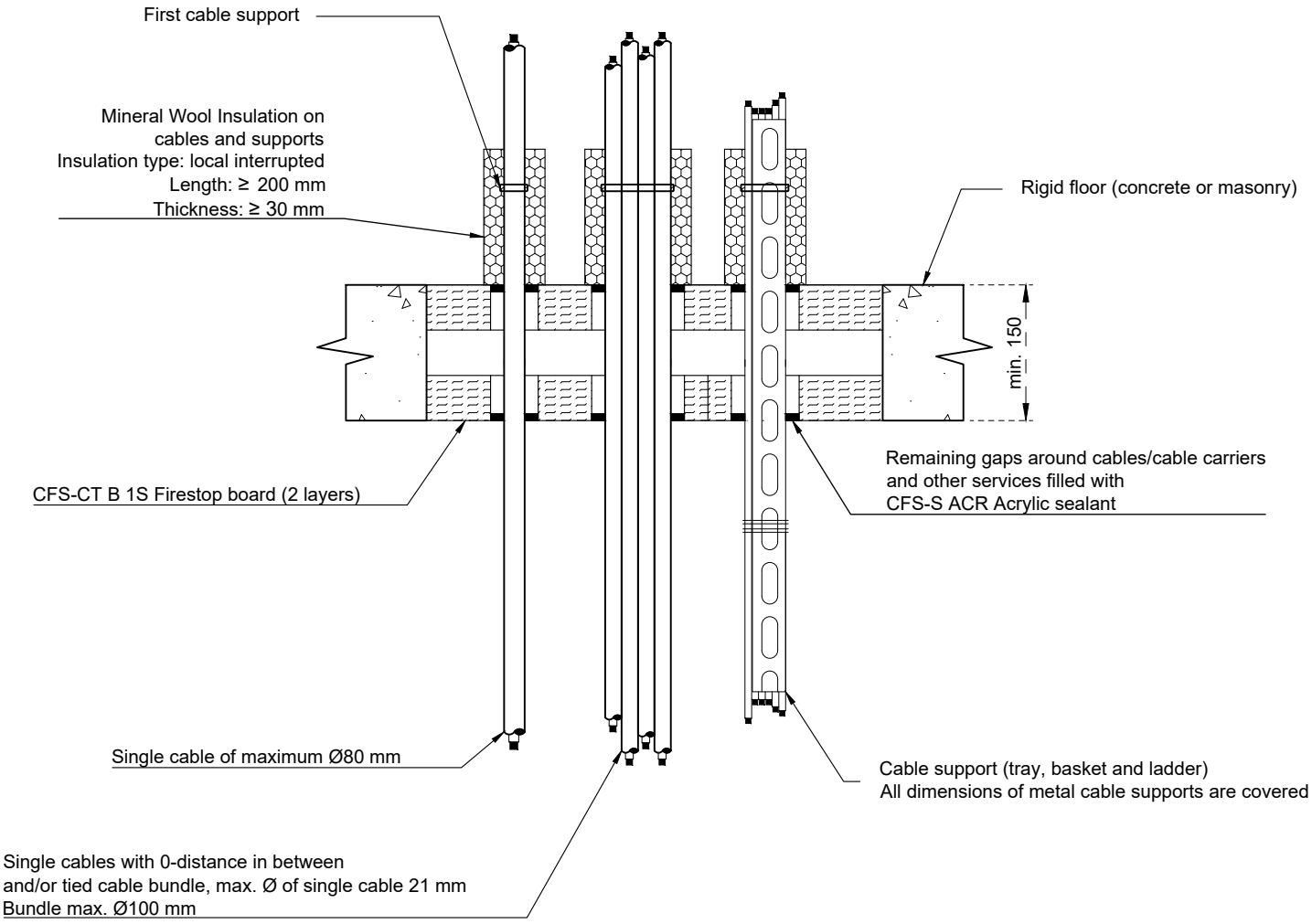
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.
- In case of a thicker wall (> 100 mm) the penetrants should be wrapped in between both boards with mineral wool (refer to ETA Annex 2, 2.1.3,AP9)

Minimum distance:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a1 – a3 in the table and detailed description in clause of ETA 11/0429.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Single Cables Penetration**	ID: **CT B1SF 1.01**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**CFS-CT B 1S Firestop Board** **Fire Rating EI 120**	**CFS-CT** REV: **01** **Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the floor, the boards have to be flush to the surface of the building element each side of the floor.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

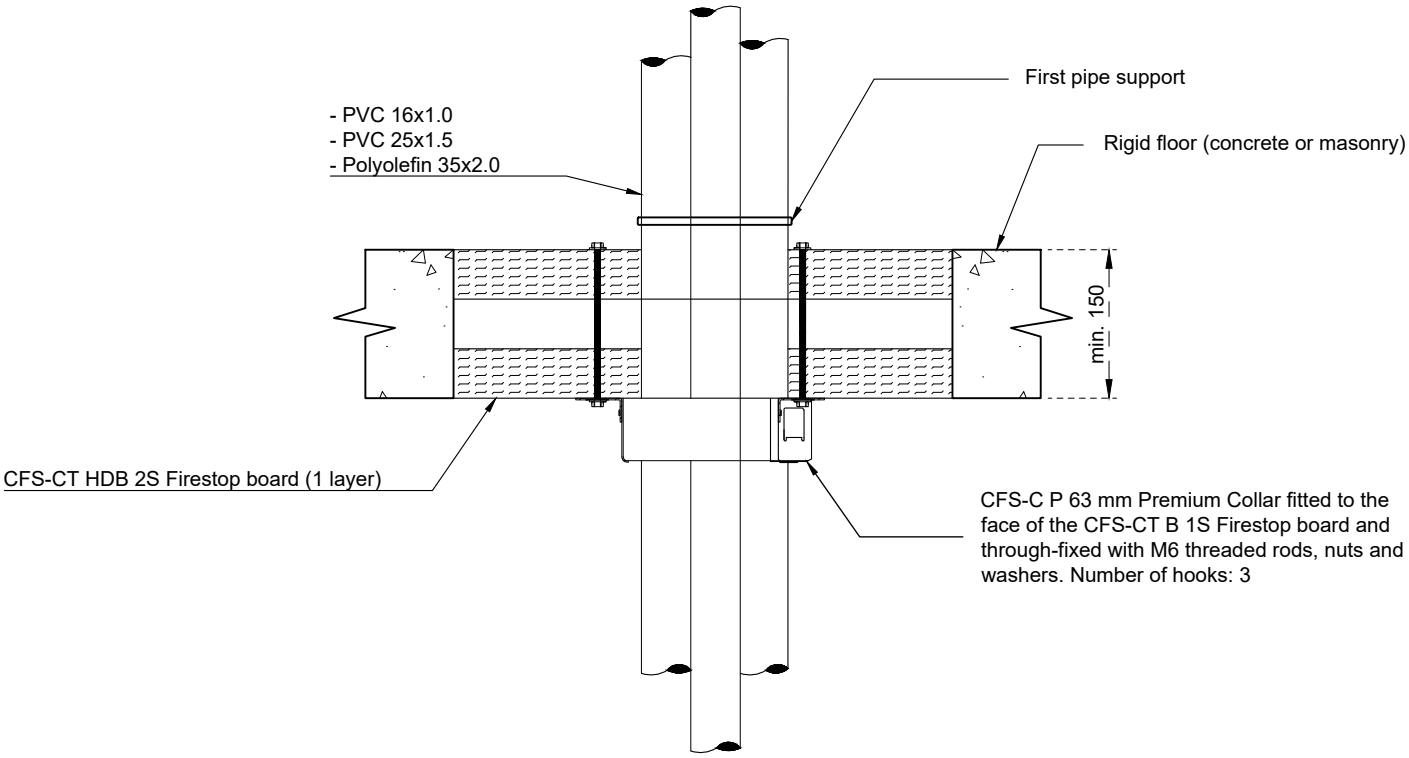
Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

Additional protection on cables and gap seal:
- Mineral wool in. acc. EN-14303, reaction to fire class in acc. EN 13501-1 A1 or A2. Density 35-45 kg/m3
- Thermal conductivity at 20c less or equal to 0.040 w/(mK)
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

First support for penetrants
- ≤ 100 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Plastic conduits penetration**	ID: **CT B1SF 1.02**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**3 plastic conduits in 1 CFS-C P collar**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/C	**Page 1/1**



Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the floor, the boards have to be flush to the surface of the building element each side of the floor.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR**.**

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

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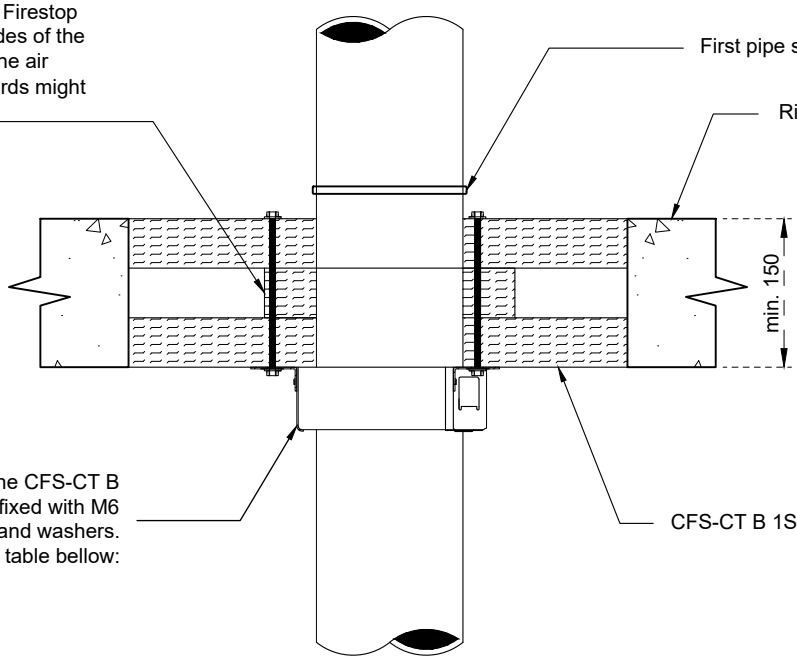
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Pipe Penetration**	ID: **CT B1SF 1.03**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**P C Pipes with CFS-C P Collar**	**CFS-CT** REV: **01**
	Fire Rating EI 120 U/U	**Page 1/1**

CFS-CT B 1S installed around the pipe in the air gap between two layers of the Hilti Firestop Double Board Seal. Distance on all sides of the pipe 100mm, depth 50mm (height of the air gap). For alternative mineral wool boards might be used see Table 1 of ETA 11/0429.



Diameter	Wall thickness	Collar si e	No. ooks	Classification
20	1.5 - 2.2	CFS-C P 50	2	EI 120 U/U
50	2.4 - 5.6	CFS-C P 50	2	EI 120 U/U
63	3.0 - 4.7	CFS-C P 63	3	EI 120 U/U
75	2.2 - 3.6	CFS-C P 75	3	EI 120 U/U
90	2.7 - 4.3	CFS-C P 90	4	EI 120 U/U
110	1.8 - 8.1	CFS-C P 110	4	EI 120 U/U
PVC-U Pipes in acc. EN 1452-2, EN 15493, EN 1329-1, EN 1453				

Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the floor, the boards have to be flush to the surface of the building element each side of the floor.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

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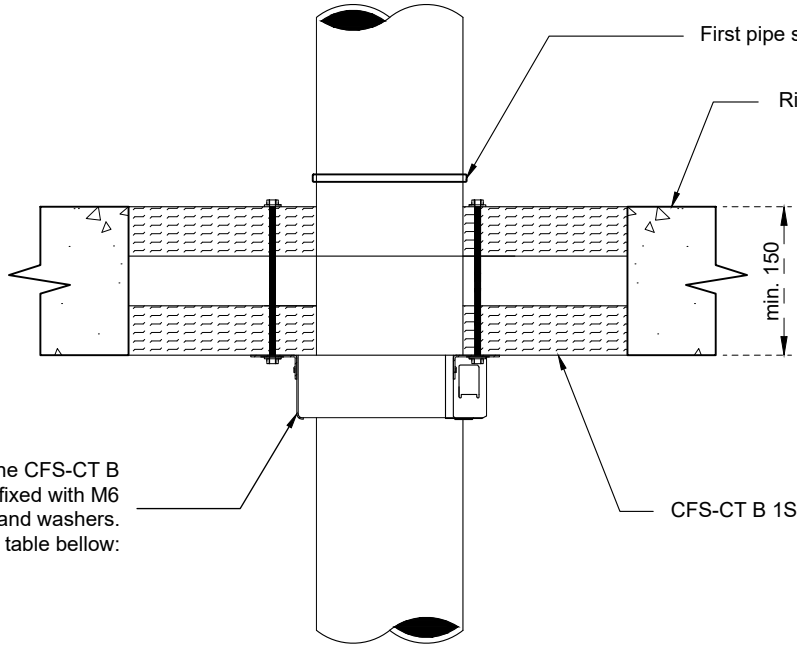
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.



Diameter	Wall thickness	Collar si e	No. ooks	Classification
50	1.8	CFS-C P 50	2	EI 120 U/C
125	3.7 - 6.0	CFS-C P 125	4	EI 120 C/U
125	3.7	CFS-C P 125	4	EI 180 C/U
160	1.8 - 11.9	CFS-C P 160	6	EI 120 U/C
160	2.5 - 11.8	CFS-C P 160	6	EI 120 C/U
PVC-U Pipes in acc. EN 1452-2, EN 15493, EN 1329-1, EN 1453				

Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the floor, the boards have to be flush to the surface of the building element each side of the floor.
- Contact phase between board and support construction should be covered by a thin film of CFS-S ACR, flush with both sides of the board, width 1-5 mm.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

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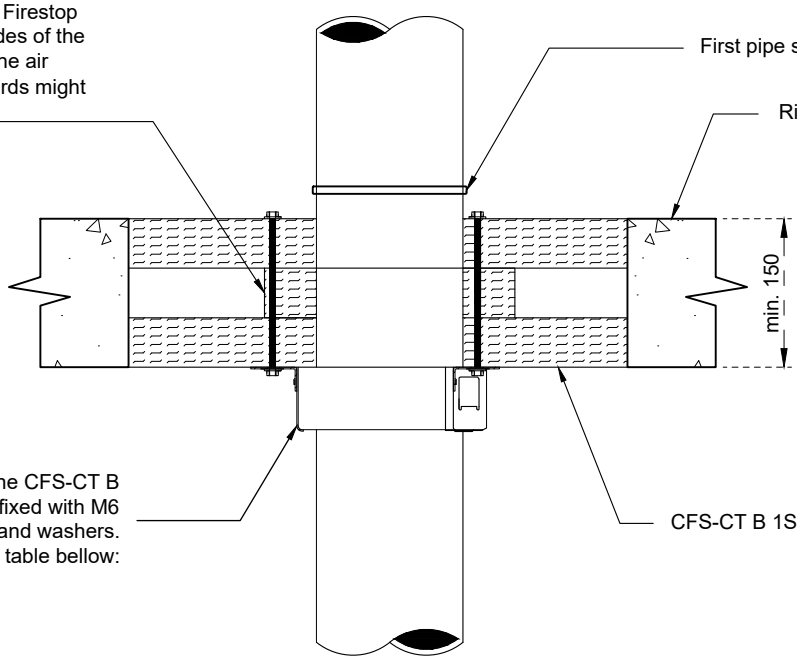
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Pipe Penetration**	ID: **CT B1SF 1.0**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE Pipes with CFS-C P Collar**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 180	**Page 1/1**

CFS-CT B 1S installed around the pipe in the air gap between two layers of the Hilti Firestop Double Board Seal. Distance on all sides of the pipe 100mm, depth 50mm (height of the air gap). For alternative mineral wool boards might be used see Table 1 of ETA 11/0429.



Diameter	Wall thickness	Collar si e	No. ooks	Classification
50	2.9 - 4.6	CFS-C P 50	2	EI 120 U/U
63	1.8 - 5.8	CFS-C P 63	3	EI 120 U/U
75	1.9 - 6.8	CFS-C P 75	3	EI 120 U/U
90	2.2 - 8.2	CFS-C P 90	4	EI 120 U/U
110	2.7 - 10.0	CFS-C P 110	4	EI 120 U/U
125	3.1 - 7.1	CFS-C P 125	4	EI 180 C/U
160	14.6	CFS-C P 160	6	EI 120 C/U
PE Pipes in acc. EN ISO 15494, DIN 8074/8075				

Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the floor, the boards have to be flush to the surface of the building element each side of the floor.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

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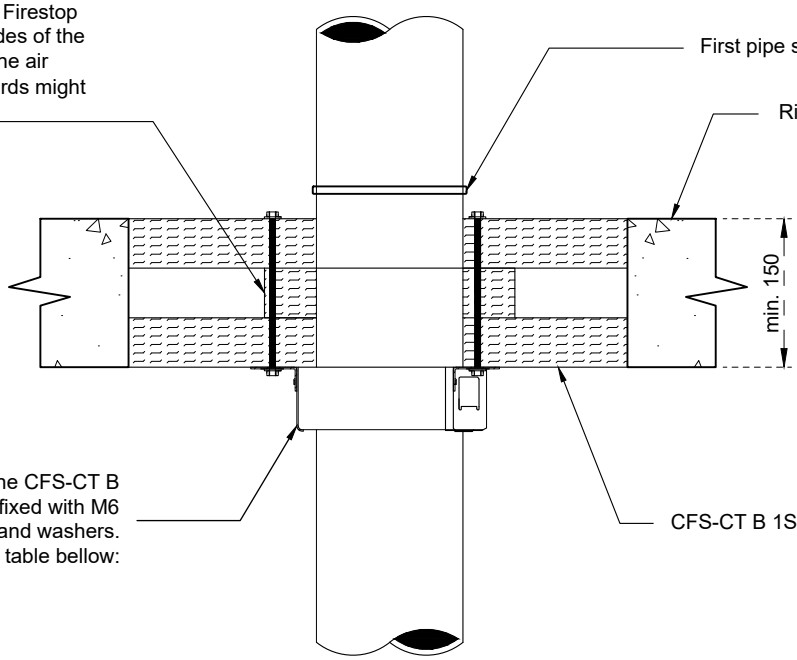
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Single Pipe Penetration**	ID: **CT B1SF 1.06**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE Pipes with CFS-C P Collar**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 180	**Page 1/1**

CFS-CT B 1S installed around the pipe in the air gap between two layers of the Hilti Firestop Double Board Seal. Distance on all sides of the pipe 100mm, depth 50mm (height of the air gap). For alternative mineral wool boards might be used see Table 1 of ETA 11/0429.



Diameter	Wall thickness	Collar si e	No. ooks	Classification
50	3.0	CFS-C P 50	2	EI 120 U/U
63	3.0	CFS-C P 63	3	EI 120 U/U
75	3.0	CFS-C P 75	3	EI 120 U/U
90	3.5	CFS-C P 90	4	EI 120 U/U
110	4.2	CFS-C P 110	4	EI 120 U/U
125	4.8	CFS-C P 125	4	EI 180 C/U
160	6.2	CFS-C P 160	6	EI 180 C/U
PE Pipes in acc. EN ISO 1519-1				

Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the floor, the boards have to be flush to the surface of the building element each side of the floor.
- Contact phase between board and support construction should be covered by a thin film of CFS-S ACR, flush with both sides of the board, width 1-5 mm.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

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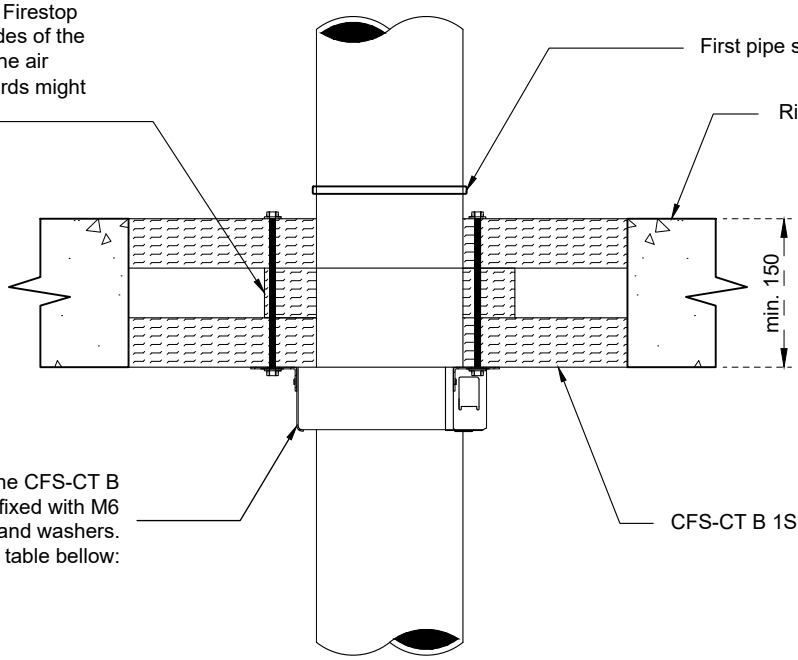
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Single Pipe Penetration**	ID: **CT B1SF 1.07**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Non-regulated PP pipes with CFS-C P**	**CFS-CT** REV: **01**
	Fire Rating EI 90-U/U	**Page 1/1**

CFS-CT B 1S installed around the pipe in the air gap between two layers of the Hilti Firestop Double Board Seal. Distance on all sides of the pipe 100mm, depth 50mm (height of the air gap). For alternative mineral wool boards might be used see Table 1 of ETA 11/0429.



Diameter	Wall thickness	Collar si e	No. ooks	Classification
50	1.8 - 2.0	CFS-C P 50	2	EI 90 U/U
58	4.0	CFS-C P 63	2	EI 90 U/U
70	4.5	CFS-C P 75	3	EI 90 U/U
75	1.9 - 3.8	CFS-C P 75	3	EI 90 U/U
78	4.5	CFS-C P 75	3	EI 90 U/U
90	2.8 - 4.5	CFS-C P 90	3	EI 90 U/U
110	2.7 - 5.3	CFS-C P 110	4	EI 90 U/U
Only pipe manufacturer and pipe type listed on page 3.				

Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the floor, the boards have to be flush to the surface of the building element each side of the floor.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

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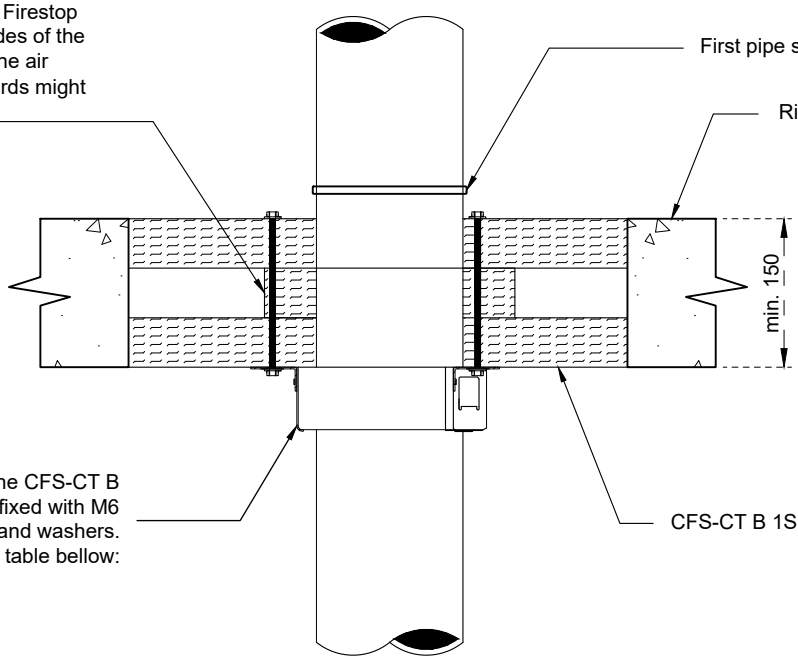
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Single Pipe Penetration**	ID: **CT B1SF 1.08**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Non-regulated PP pipes with CFS-C P**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 180-C/U	**Page 1/1**

CFS-CT B 1S installed around the pipe in the air gap between two layers of the Hilti Firestop Double Board Seal. Distance on all sides of the pipe 100mm, depth 50mm (height of the air gap). For alternative mineral wool boards might be used see Table 1 of ETA 11/0429.



Diameter	Wall thickness	Collar si e	No. ooks	Classification
110	5.3	CFS-C P 110	4	EI 120 C/U
125	3.1 - 5.3	CFS-C P 125	4	EI 180 C/U
135	5.3 - 5.8	CFS-C P 160	6	EI 180 C/U
160	3.9 - 7.5	CFS-C P 160	6	EI 180 C/U
Only pipe manufacturer and pipe type listed on page 3.				

Construction details:
- Hilti CFS-CT B 1S tightly to fit into the opening of the floor, the boards have to be flush to the surface of the building element each side of the floor.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Approved manufacturers and pipe type:
- Rehau Raupiano, Poloplast Polokal NG, Wavin Sitech, Geberit Silent PP, Coes Blue Power, Coes PhoNo Fire, Valsir Triplus, Pipelife Master 3
- Marley Silent, Poloplast Polokal 4S, Poloplast Polokal XS, Ostendorf Skolan DB, Geberit Silent Pro, Valsir Silere, Kekelit PhonEx AS, Wavin AS
- Silenta Premium, Wavin Sitech , Conel Drain Hausablfussrohr, Uponor S&W Decibel

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

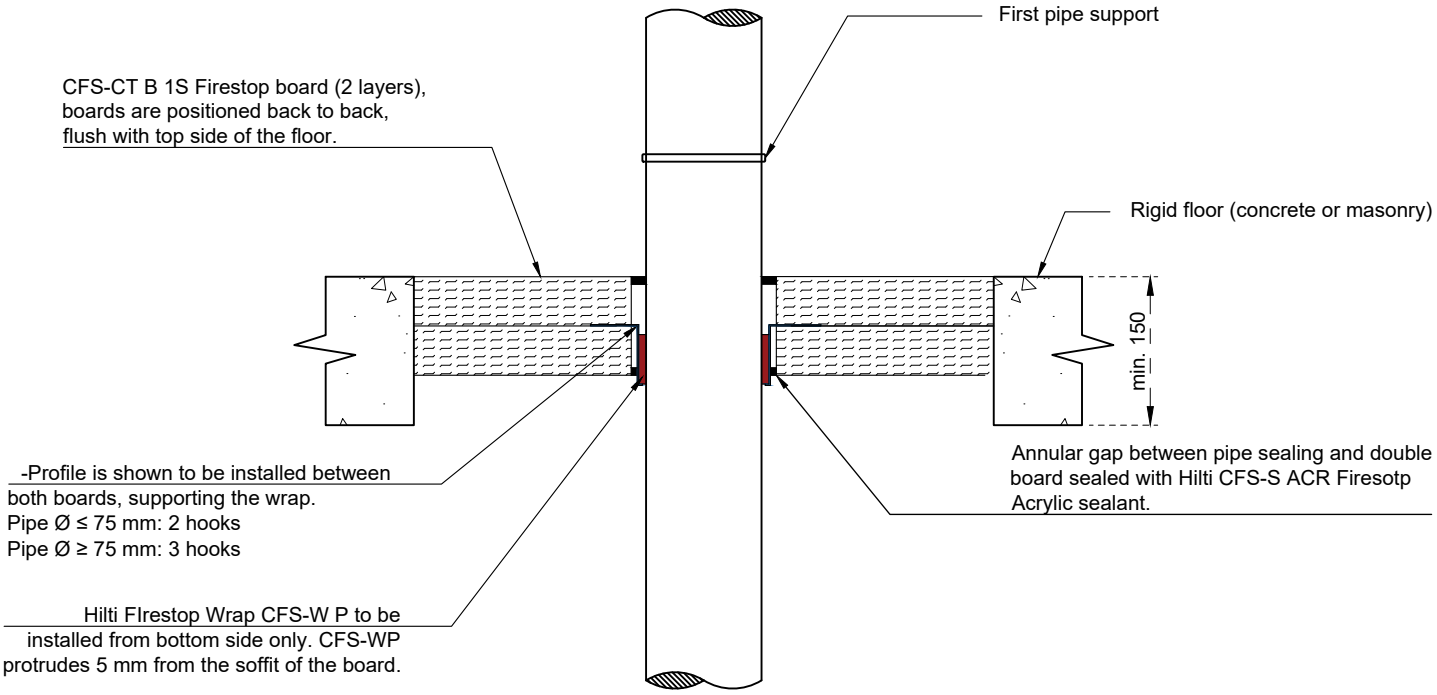
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

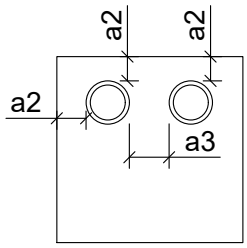
First support for penetrants
- ≤ 100 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Combustible Pipe Penetration**	ID: **CT B1SF 1.09**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE Pipe with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 90 U/C	**Page 1/1**



Layers	Diameter wall thickness	Separation A2	Separation A3	Classification
2	32 (1.8/6.9) to 50 (1.8/6.9)	25	25	EI 90 U/C
3	> 50 (1.8/6.8) to 75 (1.9/6.8)	25	25	EI 90 U/C
4	> 75 (1.9/6.8) to 90 (2.2/7.1) to 125 (3.1/7.1)	25	25	EI 90 U/C
6	> 125 (3.5/9.1) to 140 (3.5/9.1) to 160 (4.0/9.1)	25	25	EI 90 U/C
PE Pipes according to EN 15494				



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

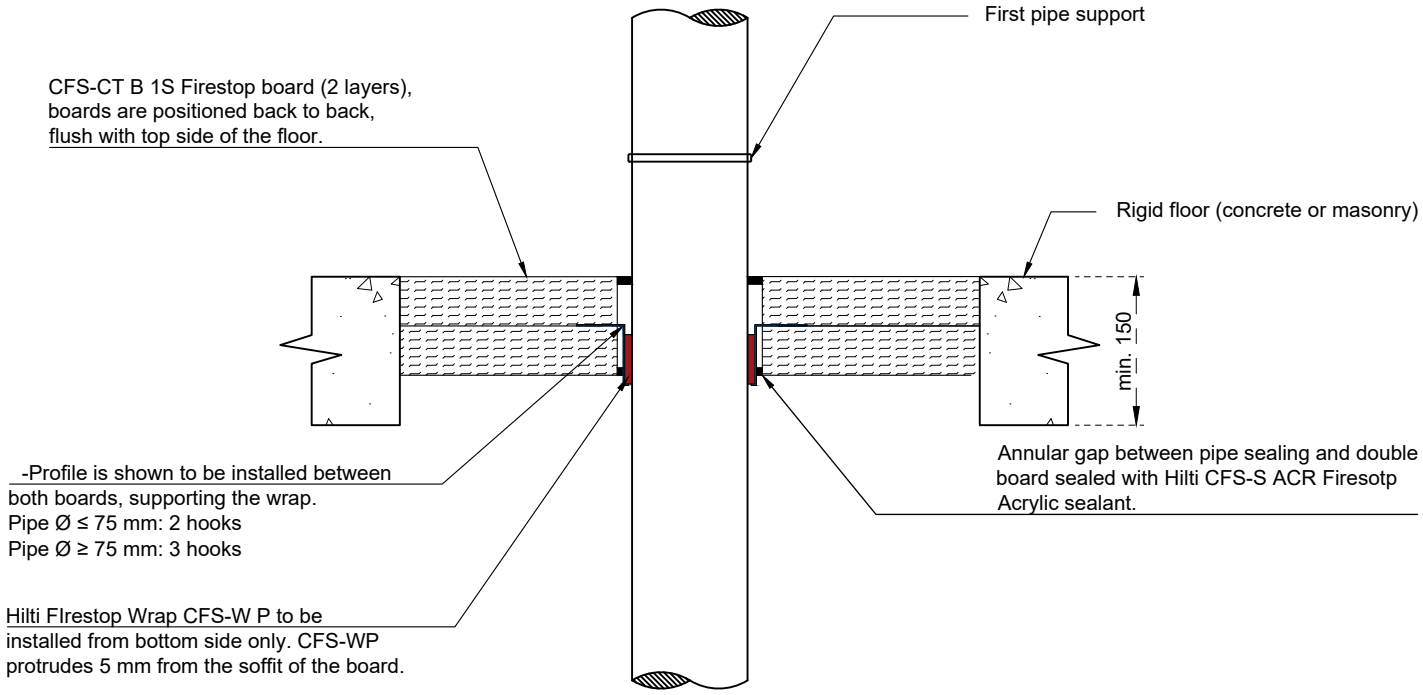
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

Gap seal
- All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

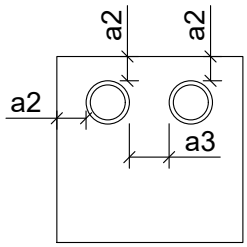
First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Combustible Pipe Penetration**	ID: **CT B1SF 1.10**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE Pipe with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 120 U/C	**Page 1/1**



Layers	Diameter wall thickness	Separation a2	Separation a3	Classification
2	32 (1.8/4.6) to 50 (1.8/4.6)	50	25	EI 120 U/C
3	> 50 (1.8/6.8) to 75 (1.9/6.8)	50	25	EI 120 U/C
4	> 75 (2.2/7.1) to 90 (2.2/7.1) to 125 (3.1/7.1)	50	25	EI 120 U/C
6	> 125 (3.5/9.1) to 140 (3.5/9.1) to 160 (9.1)	50	25	EI 120 U/C
PE Pipes according to EN 15494				



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

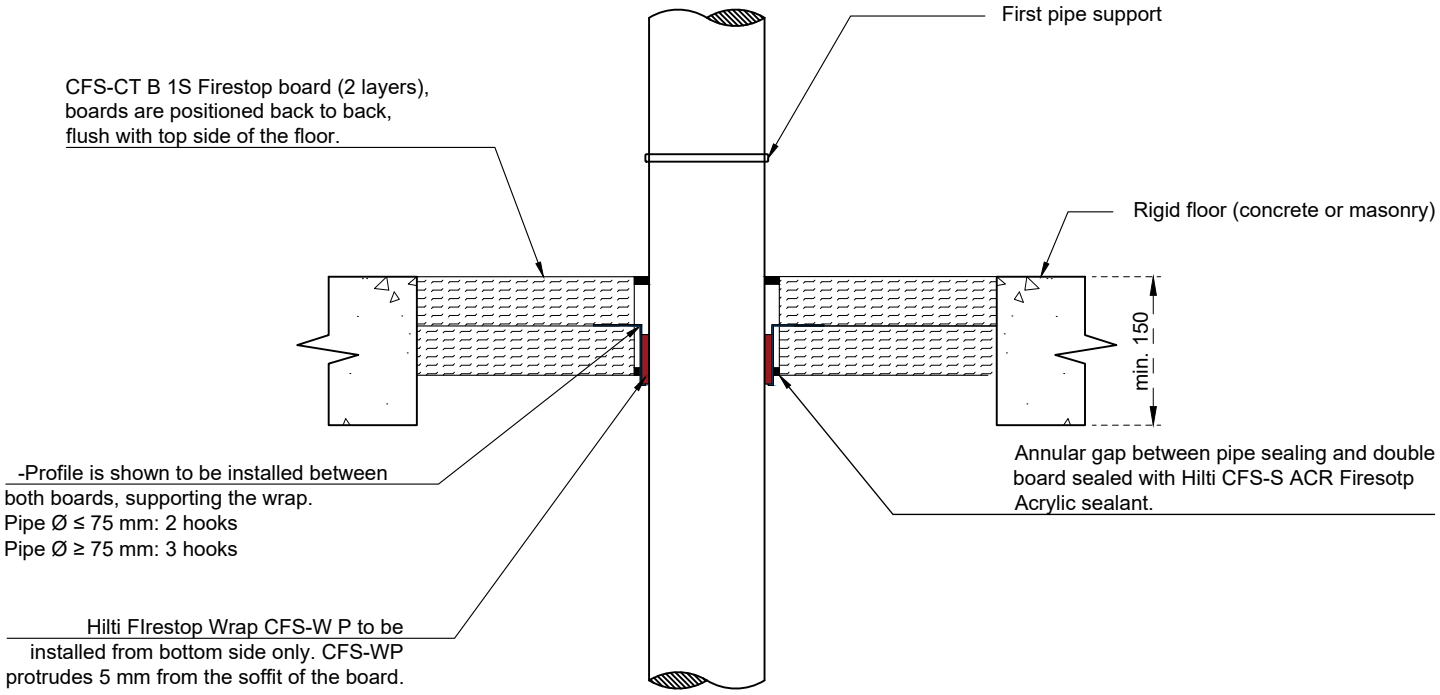
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

Gap seal
- All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

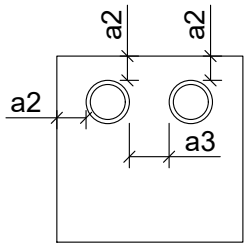
First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Combustible Pipe Penetration**	ID: **CT B1SF 1.11**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**PE Pipe with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 120 U/U	**Page 1/1**



Layers	Diameter wall thickness	Separation a2	Separation a3	Classification
2	32 (3.0) to 56 (3.0)	50	100	EI 120 U/U
2	32 (3.0) to 56 (3.0)	25	50	EI 90 U/U
3	> 56 (3.0) to 75 (3.0)	50	100	EI 120 U/U
3	> 56 (3.0) to 75 (3.0)	25	50	EI 90 U/U
4	> 75 (3.5) to 90 (3.5)	50	100	EI 120 U/U
4	> 75 (3.5) to 110 (4.2)	25	50	EI 90 U/U
PE Pipes according to EN 1519-1, EN 12666-1, EN 12201-2				



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

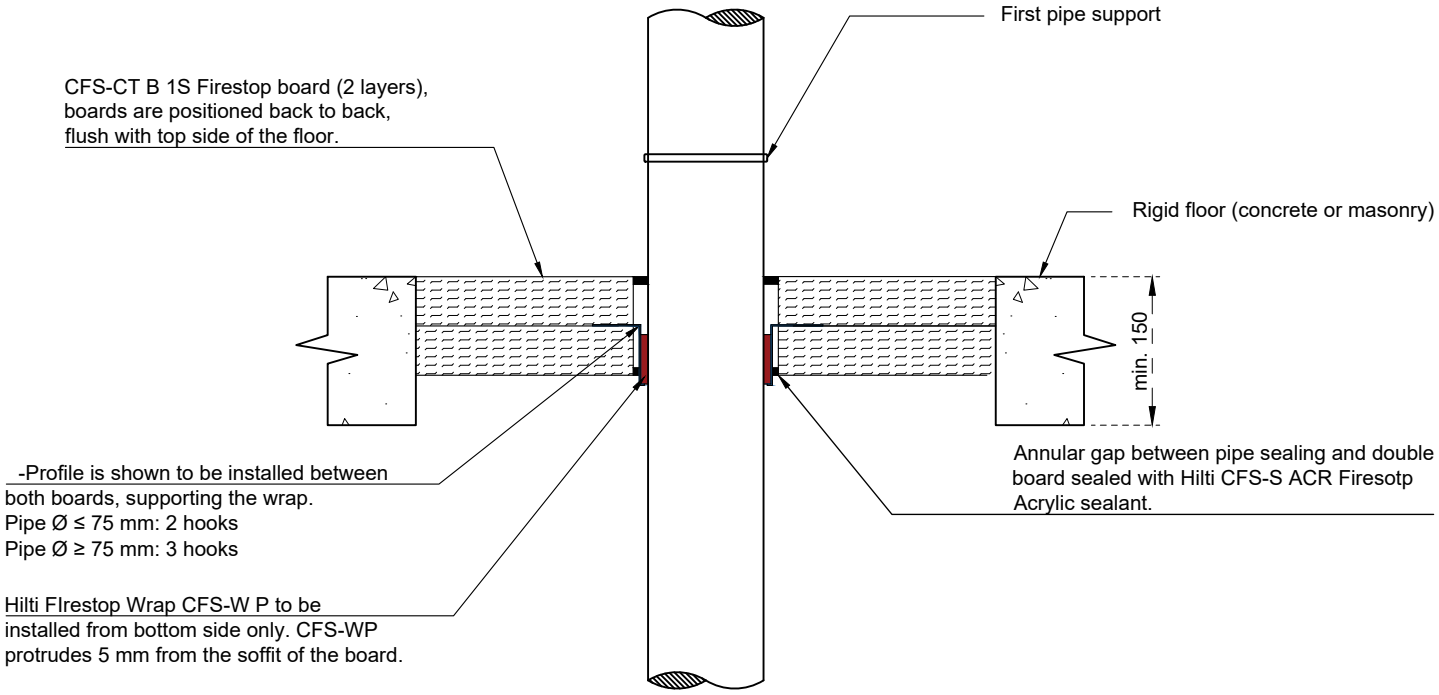
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

Gap seal
- All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

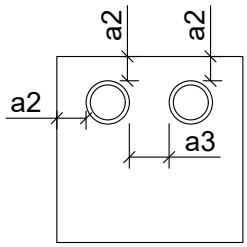
First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Combustible Pipe Penetration**	ID: **CT B1SF 1.12**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Geberit Silent dB20 - CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 120 U/C	**Page 1/1**



Layers	Diameter wall thickness	Separation a2	Separation a3	Classification
2	32 (1.8/5.6) to 50 (1.8/5.6)to 75 (2.2/5.6)	25	50	EI 120 U/C
4	>75(2.2/9.3) to 125 (2.5/9.3) to 140 (2.5/7.7) to 160 (2.5/7.7)	25	50	EI 120 U/C
Valid only for PE pipe Geberit Silent dB20				



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

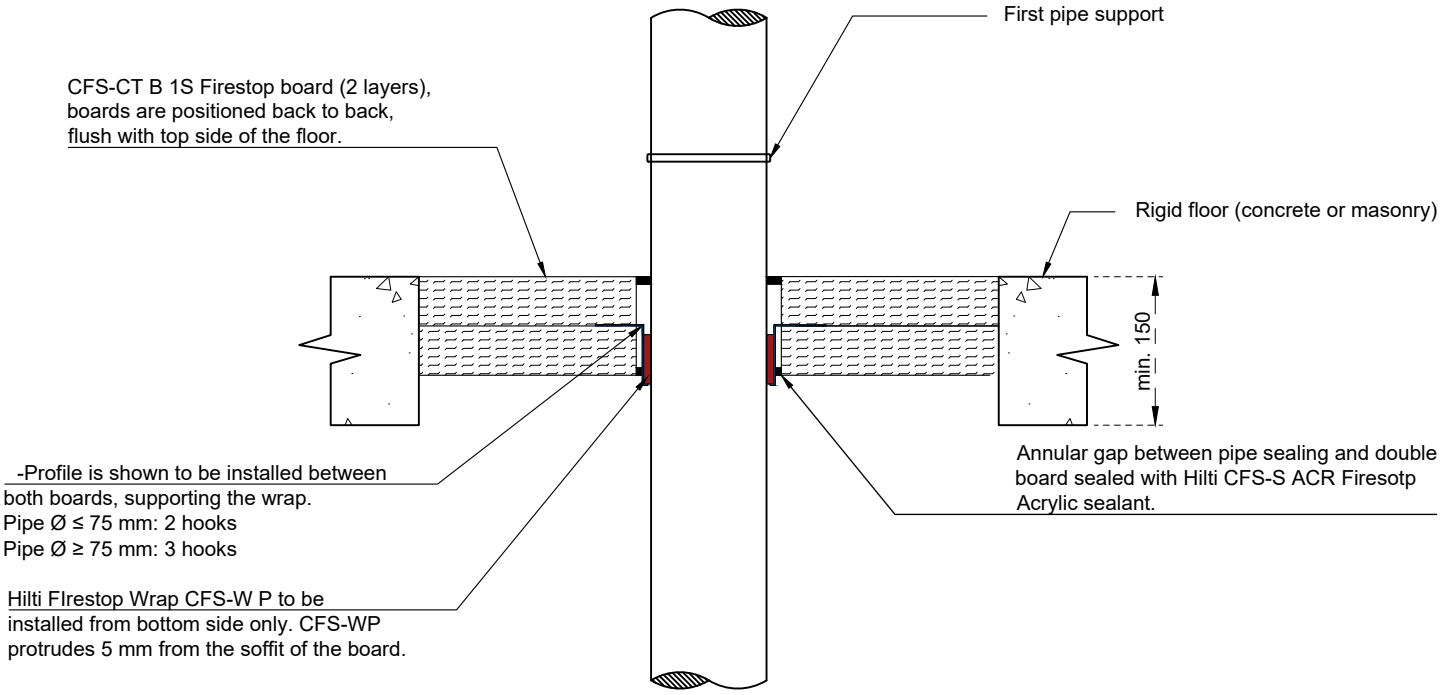
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

Gap seal
- All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

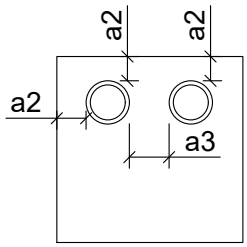
First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Combustible Pipe Penetration**	ID: **CT B1SF 1.13**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**P C Pipe with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 120 U/C	**Page 1/1**



Layers	Diameter & wall thickness	Separation a2	Separation a3	Classification
2	32 (1.8/5.6) to 50 (1.8/5.6)to 75 (2.2/5.6)	25	50	EI 120 U/C
4	>75(2.2/9.3) to 125 (2.5/9.3) to 140 (2.5/7.7) to 160 (2.5/7.7)	25	50	EI 120 U/C
PVC pipes according to EN 1452-1				



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

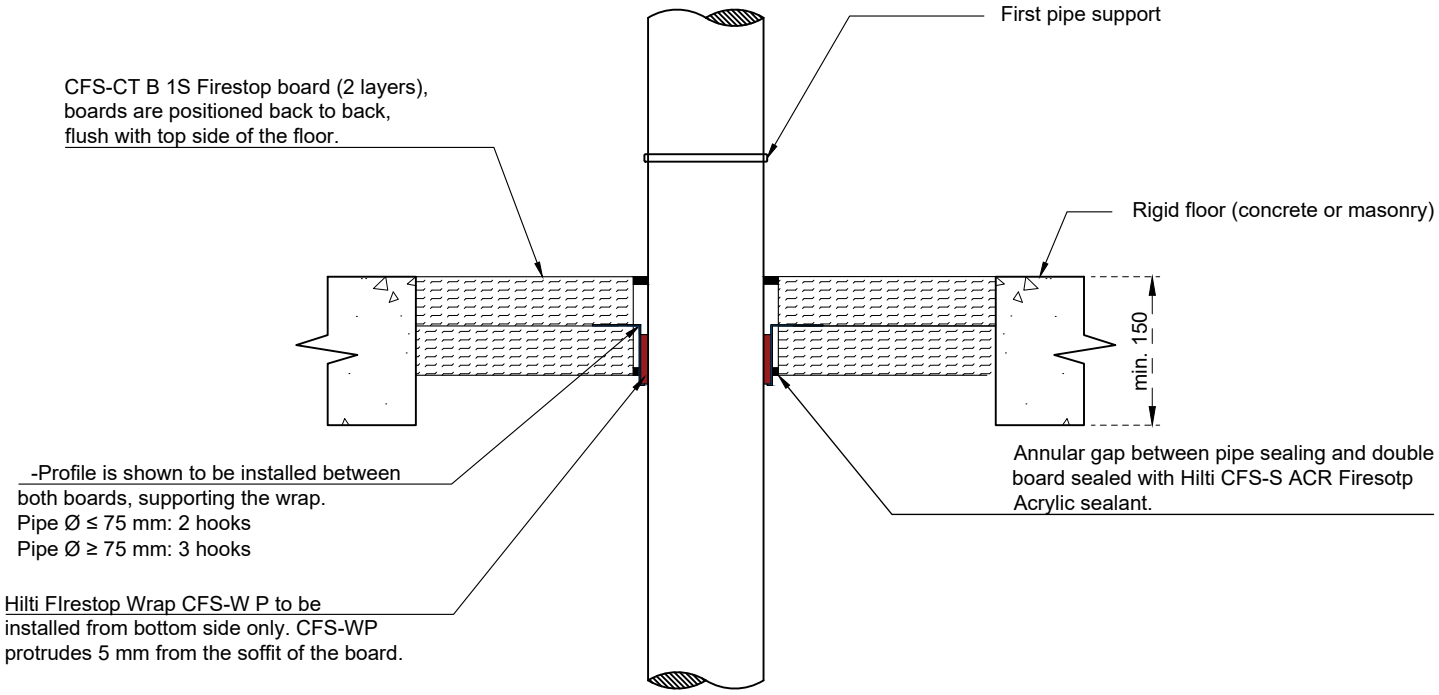
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

Gap seal
- All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

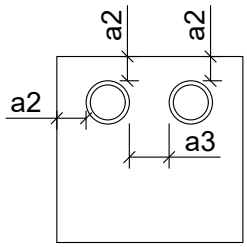
First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Combustible Pipe Penetration**	ID: **CT B1SF 1.14**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Geberit Silent dB20 with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 120 U/U	**Page 1/1**



Layers	Diameter wall thickness	Separation a2	Separation a3	Classification
2	32 (1,8/5,6) to 50 (1,8/5,6	25	50	EI 90 U/U
3	> 50 (2.2/5.6) to 75 (2.2/5.6)	25	50	EI 90 U/U
3	> 75 (2.2/9.3) to 110 (2.2/9.3)	25	50	EI 120 U/U
PVC Pipes according to EN 1452-1				



Construction details:[4]
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

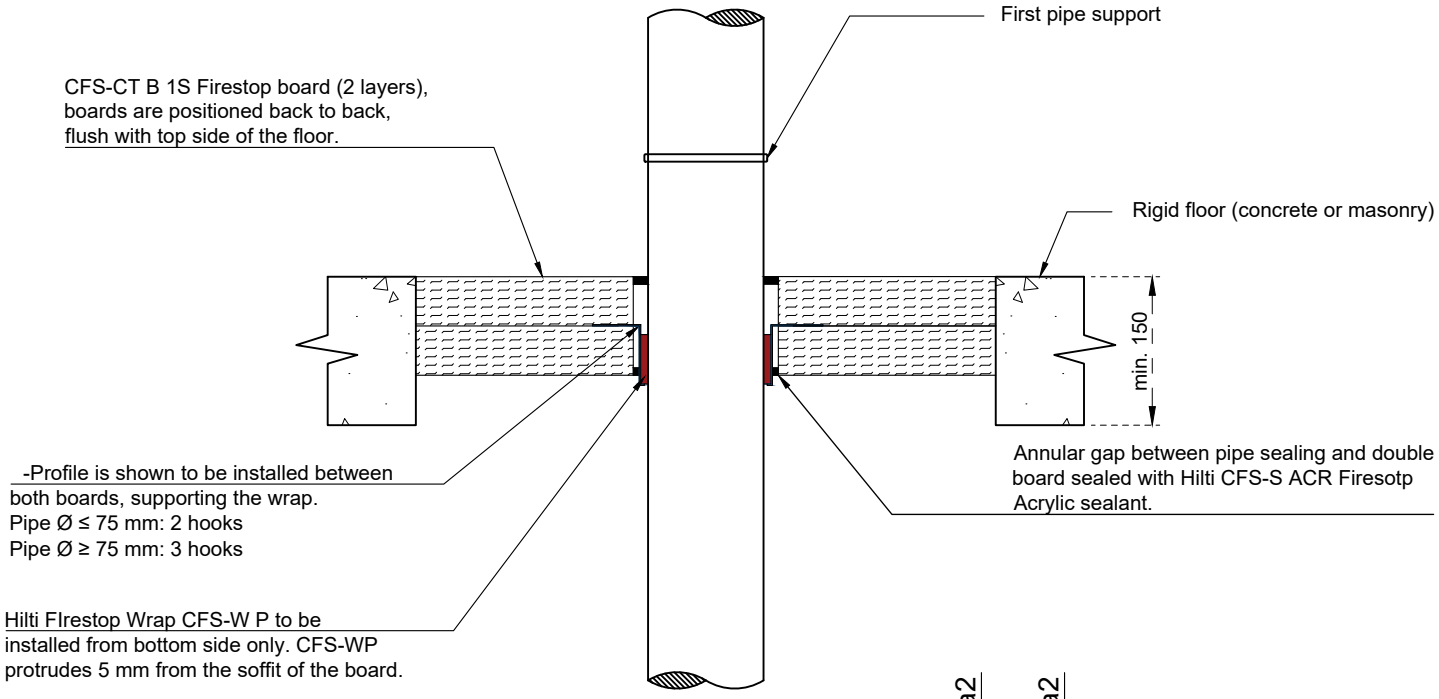
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

Gap seal
- All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

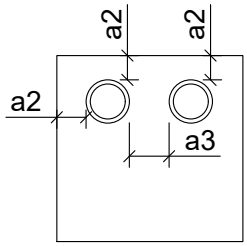
First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Combustible Pipe Penetration**	ID: **CT B1SF 1.1**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Non-regulated PP pipes with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating up-to EI 120 U/U	**Page 1/1**



Layers	Diameter wall thickness	Separation a2	Separation a3	Classification
2	32 (1.8/4.0) to 50 (1.8) to 58 (4.0)	25	50	EI 90 U/U
2	32 (1.8/4.0) to 50 (1.8) to 58 (4.0)	50	100	EI 120 U/U
3	58 (1.9/3.8) to 75 (1.9/3.8)	25	50	EI 90 U/U
3	58 (1.9/3.8) to 75 (1.9/3.8)	50	100	EI 120 U/U
4	> 75 (2.2/5.3) to 90 (2.2/5.3) to 110 (2.7/5.3)	25	50	EI 90 U/U
4		50	100	EI 120 U/U
PP acoustic pipes, non regulated.				



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Approved manufacturers and pipe type:
- Rehau Raupiano, Poloplast Polokal NG, Wavin Sitech, Geberit Silent PP, Coes Blue Power, Coes PhoNo Fire, Valsir Triplus, Pipelife Master 3
- Marley Silent, Poloplast Polokal 4S, Poloplast Polokal XS, Ostendorf Skolan DB, Geberit Silent Pro, Valsir Silere, Kekelit PhonEx AS, Wavin AS
- Silenta Premium, Wavin Sitech , Conel Drain Hausablfussrohr, Uponor S&W Decibel

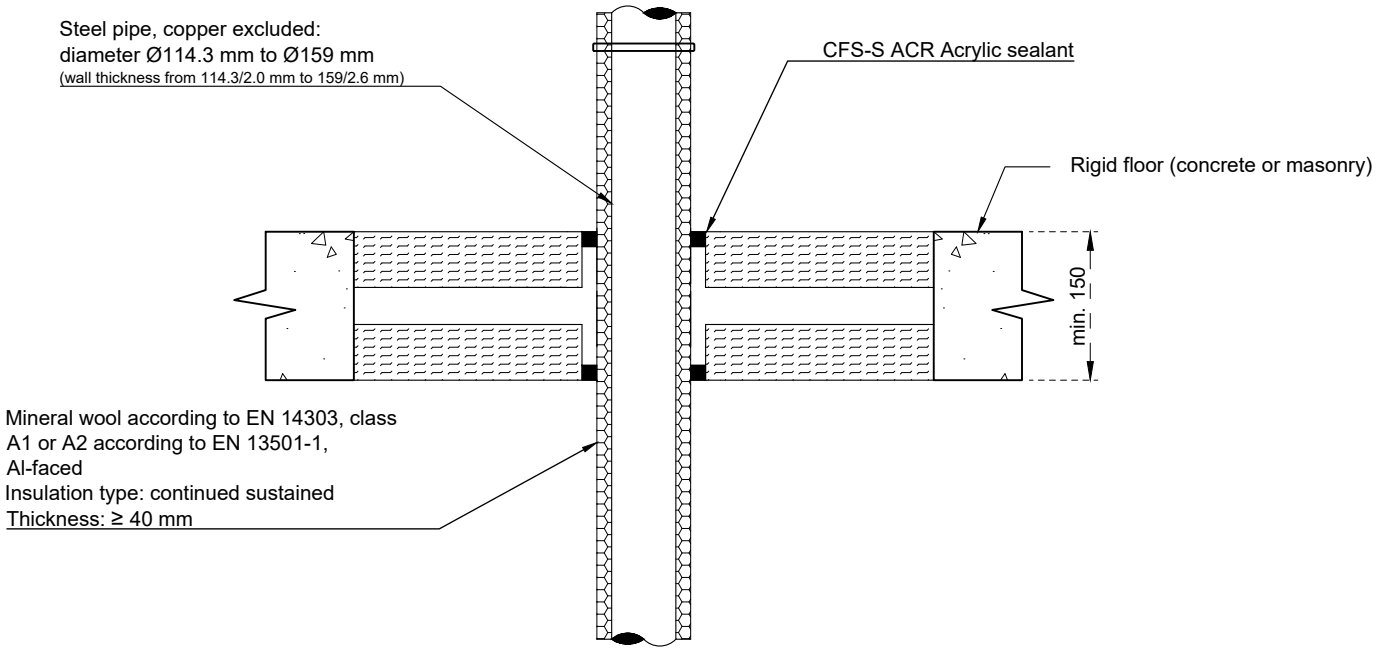
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429..
- Min. 100 mm distance to other CFS-CT B 1S openings.

Gap seal
- All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

First support for penetrants
- ≤ 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Non-Combustible Pipe Penetration**	ID: **CT B1SF 1.22**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Steel pipes with continuous sustained mineral wool insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120 U/C	**Page 1/1**



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

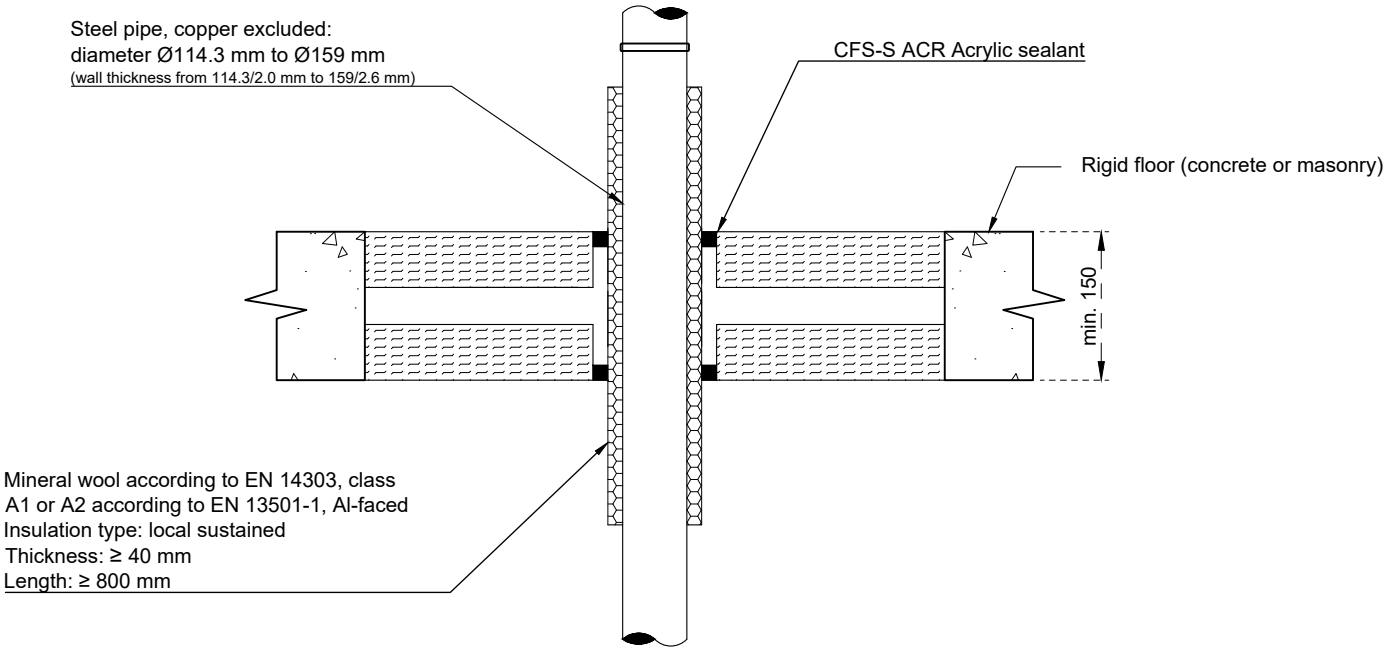
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Non-Combustible Pipe Penetration**	ID: **CT B1SF 1.2**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Steel pipes with local sustained mineral wool insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120 U/C	**Page 1/1**



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

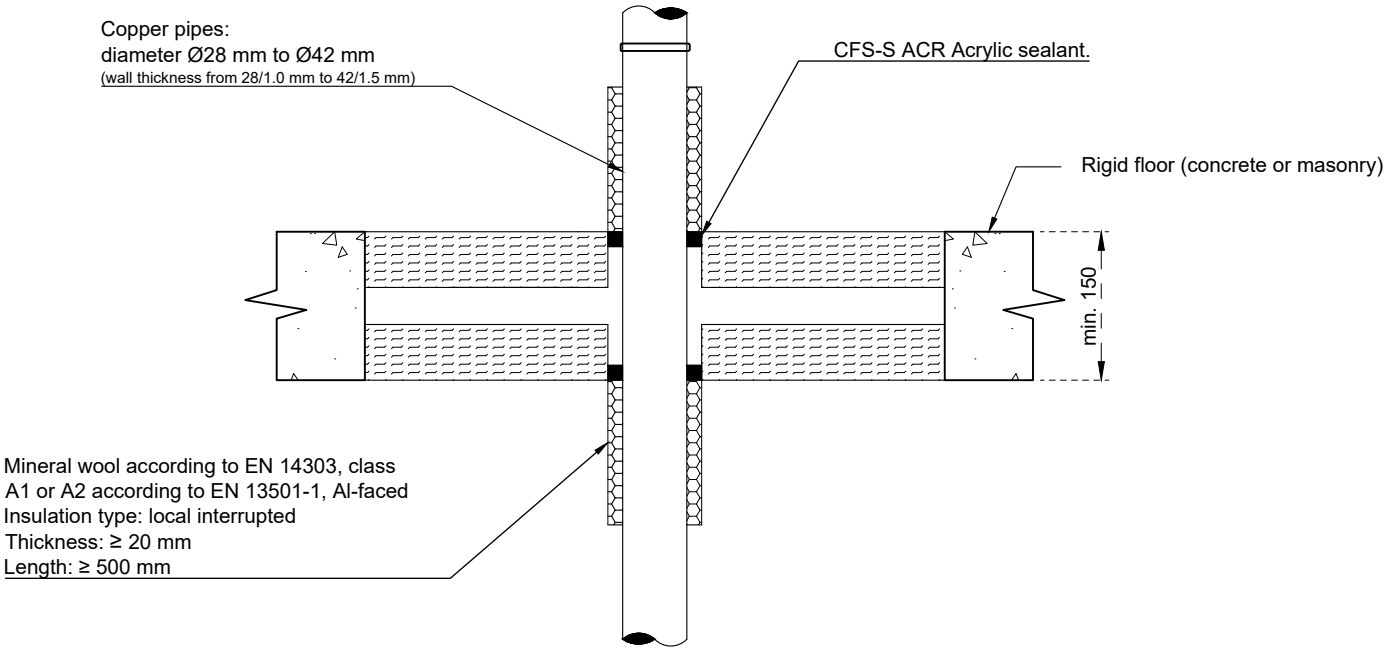
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Non-Combustible Pipe Penetration**	ID: **CT B1SF 1.24**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes with local interrupted mineral wool insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120 C/U	**Page 1/1**



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

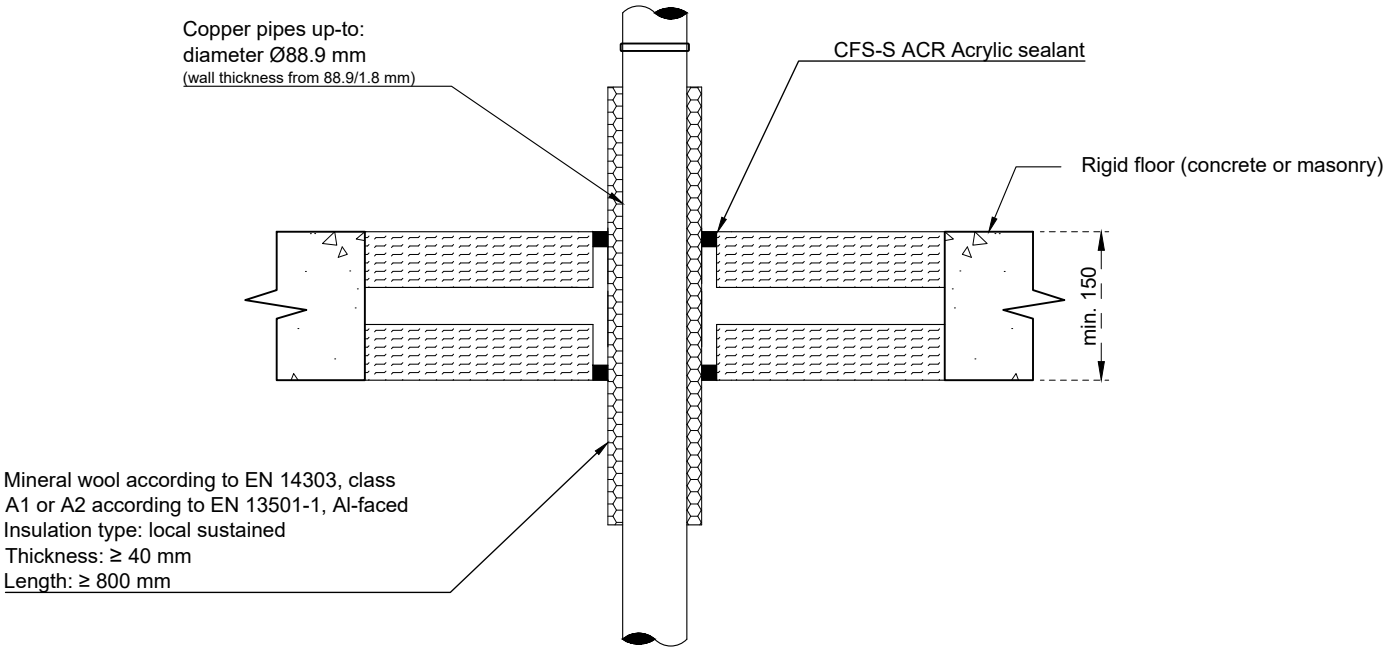
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Non-Combustible Pipe Penetration**	ID: **CT B1SF 1.26**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes with local sustained mineral wool insulation**	**CFS-CT** REV: **01**
	Fire Rating EI 120 C/U	**Page 1/1**



Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Manufacturer and product designation of mineral wool:
- Isover Coquilla AT-LR, Isover Protect BSR 90 alu, Paroc Section AluCoat T, Rockwool Conlit Pipe Sections, Rockwool Klimarock, Rockwool RS 800 Pipe sections, TP Termoprodukt TP-Protect RS 1, TP-Protect RS 105, TP-Protect RS 120, TP-Protect RS 150.

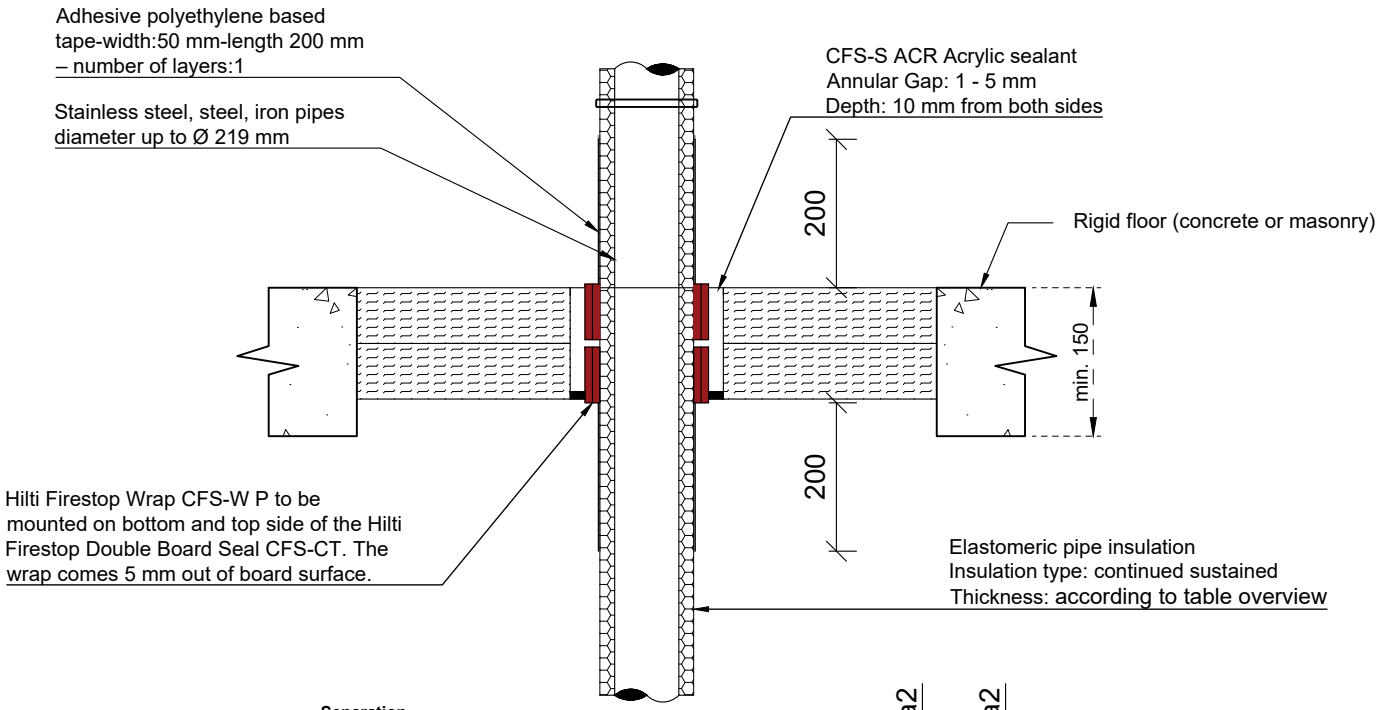
Gap seal
- Remaining gaps around cables / cable supports (trays, ladders etc.) and other services filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

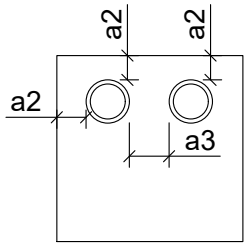
Minimum distance between services and edges is 0 mm, except:
- 50 mm between cable and cable support above them (s5)
- 10 mm between metal pipes and seal edge (s6)
- 20 mm between metal pipes
- 30 mm between metal pipes and plastic pipes / pipe closure device (s12)
- 30 mm between cables / cable supports and metal pipes
- 32 mm between cables / cable supports and plastic pipes / pipe closure device

First support for penetrants
- ≤ 100 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Non-Combustible Pipe Penetration**	ID: **CT B1SF 1.16**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Steel pipes insulated with Armafex sealed with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 90 C/U	**Page 1/1**





			Separation		
Layers	Diameter	Insulation thickness	a2	a3	Classification
1	10/1.0	7.5 to 32.0	25	50	EI 90 C/U
2	>10/1.0 to 42/1.2 to 114/3.4	7.5/9.0/15.0 to 32.0/36.0/43.0	25	50	EI 90 C/U
2	>114/3.4 to 219/6.3	15.0/19.0 to 43.0/50.0	25	50	EI 90 C/U

Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Approved manufacturers and type of FEF insulations:
- Armaflex AF, Armaflex SH, Armaflex Ultima, Armaflex XG, Armaflex NH, Armaflex HT, Insul-Tube H-Plus (nmc), Kaiflex KK plus,
- Kaiflex KK, Kaiflex HF plus, l'Isolante K-Flex ECO, l'Isolante K-Flex ST Frigo, Aeroflex HF, 3i - Isopipe HAT, Conel Flex HT, Eurobatex,
- Flexen Kälteschlauch, Isidem Coolflex AF.

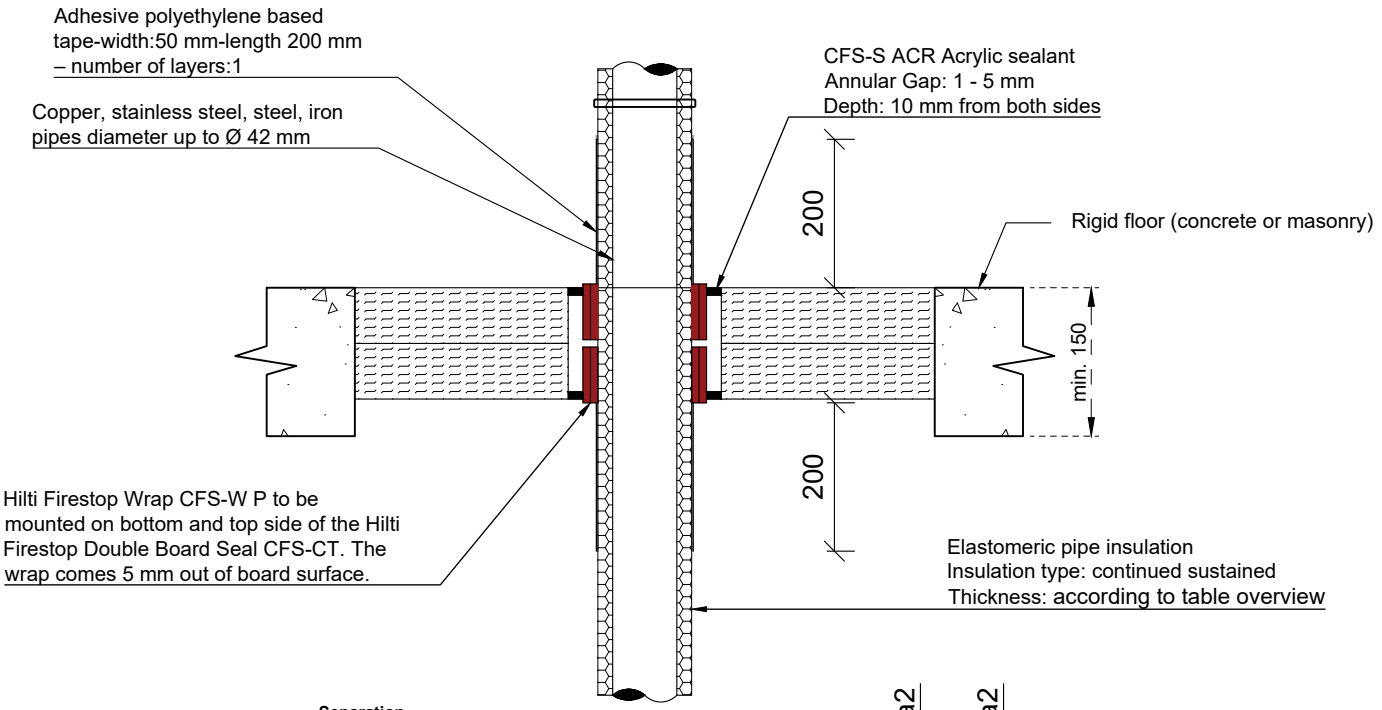
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

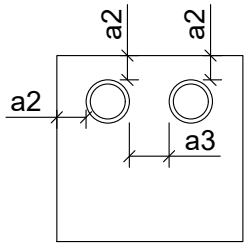
Gap seal
All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

	APPLICATION: **Non-Combustible Pipe Penetration**	ID: **CT B1SF 1.17**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Copper pipes insulated with Armafex sealed with CFS-W P**	**CFS-CT** REV: **01**
	Fire Rating EI 90 C/U	**Page 1/1**





Separation					
Layers	**Diameter**	**Insulation thickness**	**a2**	**a3**	**Classification**
1	10/1.0	7.5 to 32.0	25	50	EI 90 C/U
2	>10/1.0 to 42/1.2 to 114/3.4	7.5/9.0/15.0 to 32.0/36.0/43.0	25	50	EI 90 C/U

Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Approved manufacturers and type of FEF insulations:
- Armaflex AF, Armaflex SH, Armaflex Ultima, Armaflex XG, Armaflex NH, Armaflex HT, Insul-Tube H-Plus (nmc), Kaiflex KK plus,
- Kaiflex KK, Kaiflex HF plus, l'Isolante K-Flex ECO, l'Isolante K-Flex ST Frigo, Aeroflex HF, 3i - Isopipe HAT, Conel Flex HT, Eurobatex,
- Flexen Kälteschlauch, Isidem Coolflex AF.

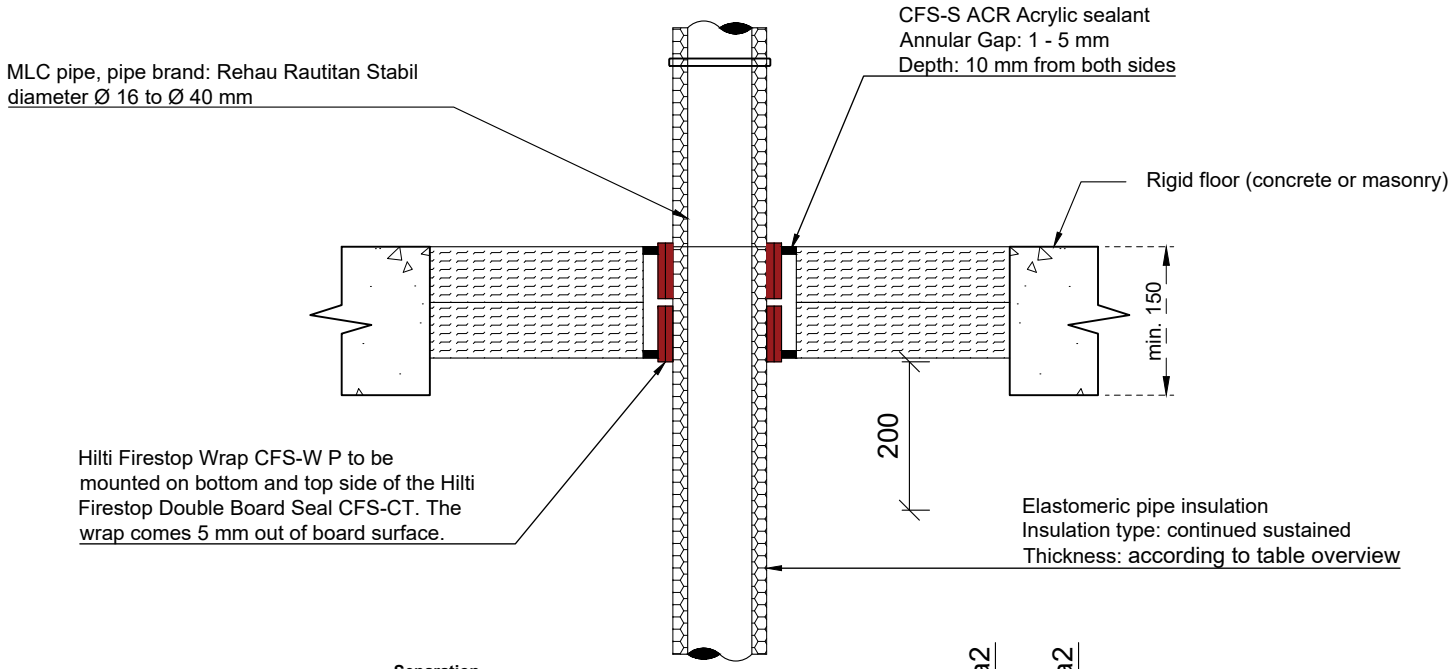
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

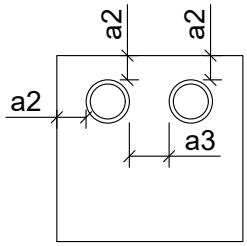
Gap seal
All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1SF 1.18**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Armaflex Insulated Rehau Rautitan Stabil**	**CFS-CT** REV: **01**
	Fire Rating EI 90 U/C	**Page 1/1**





			Separation		
Layers	**Diameter**	**Insulation thickness**	**a2**	**a3**	**Classification**
1	16 x 2.6	8.0 to 32.0	25	0	EI 90 U/C
1	20 x 2.9	8.5 to 33.5	25	0	EI 90 U/C
1	25 x 3.7	8.5 to 35.0	25	0	EI 90 U/C
1	32 x 4.7	9.0 to 35.0	25	0	EI 90 U/C
1	40 x 6.0	9.0 to 35.0	25	0	EI 90 U/C

Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Approved manufacturers and type of FEF insulations:
- Armaflex AF, Armaflex SH, Armaflex Ultima, Armaflex XG, Armaflex NH, Armaflex HT, Insul-Tube H-Plus (nmc), Kaiflex KK plus,
- Kaiflex KK, Kaiflex HF plus, l'Isolante K-Flex ECO, l'Isolante K-Flex ST Frigo, Aeroflex HF, 3i - Isopipe HAT, Conel Flex HT, Eurobatex,
- Flexen Kälteschlauch, Isidem Coolflex AF.

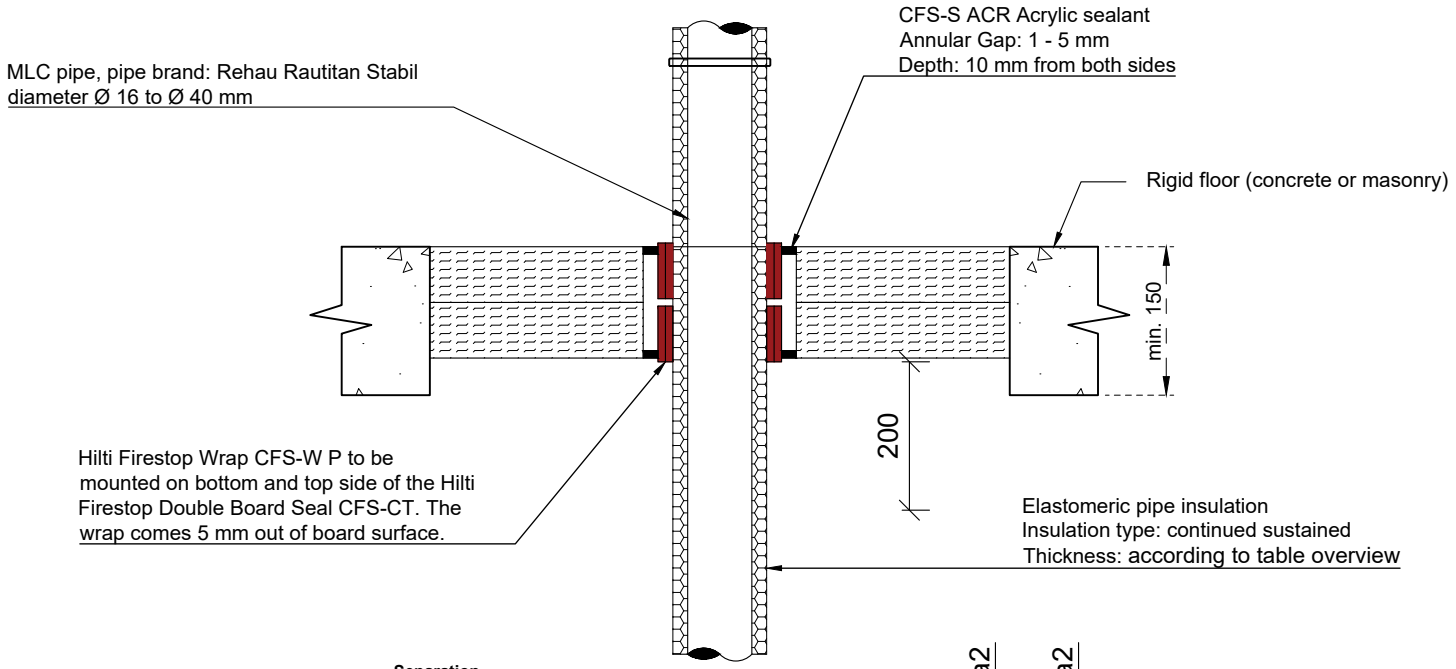
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

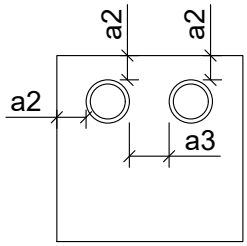
Gap seal
All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1SF 1.19**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Armaflex Insulated Rehau Rautitan Stabil**	**CFS-CT** REV: **01**
	Fire Rating EI 120 U/C	**Page 1/1**





			Separation		
Layers	**Diameter**	**Insulation thickness**	**a2**	**a3**	**Classification**
1	16 x 2.6	8.0 to 32.0	50	50	EI 120 U/C
1	20 x 2.9	8.5 to 33.5	50	50	EI 120 U/C
1	25 x 3.7	8.5 to 35.0	50	50	EI 120 U/C
1	32 x 4.7	9.0 to 35.0	50	50	EI 120 U/C
1	40 x 6.0	9.0 to 35.0	50	50	EI 120 U/C

Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Approved manufacturers and type of FEF insulations:
- Armaflex AF, Armaflex SH, Armaflex Ultima, Armaflex XG, Armaflex NH, Armaflex HT, Insul-Tube H-Plus (nmc), Kaiflex KK plus,
- Kaiflex KK, Kaiflex HF plus, l'Isolante K-Flex ECO, l'Isolante K-Flex ST Frigo, Aeroflex HF, 3i - Isopipe HAT, Conel Flex HT, Eurobatex,
- Flexen Kälteschlauch, Isidem Coolflex AF.

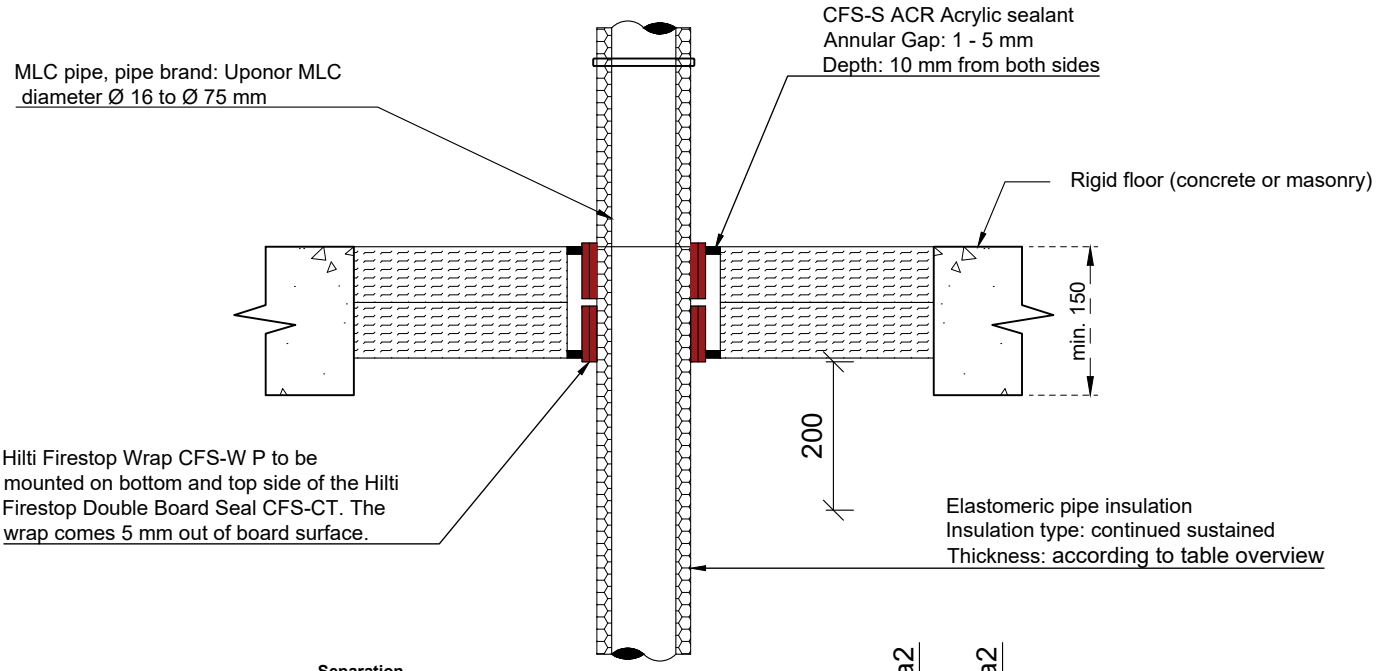
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

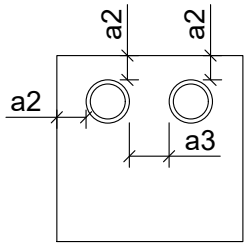
Gap seal
All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

APPLICATION: **Al-composite Pipe Penetration**		ID: **CT B1SF 1.20**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Armaflex Insulated Uponor MLC**	**CFS-CT** REV: **01**
	Fire Rating EI 90 U/C	**Page 1/1**





Layers	Diameter	Insulation thickness	Separation a2	Separation a3	Classification
1	16 x 2.0	8.0 to 32.0	25	0	EI 90 U/C
1	20 x 2.25	8.5 to 33.5	25	0	EI 90 U/C
1	25 x 2.5	8.5 to 35.0	25	0	EI 90 U/C
1	32 x 3.0	9.0 to 35.0	25	0	EI 90 U/C
2	50 x 4.5	9.0 to 38.0	25	0	EI 90 U/C
2	63 x 6.0	9.5 to 39.5	25	0	EI 90 U/C
2	75 x 7.5	9.5 to 40.5	25	0	EI 90 U/C

Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Approved manufacturers and type of FEF insulations:
- Armaflex AF, Armaflex SH, Armaflex Ultima, Armaflex XG, Armaflex NH, Armaflex HT, Insul-Tube H-Plus (nmc), Kaiflex KK plus,
- Kaiflex KK, Kaiflex HF plus, l'Isolante K-Flex ECO, l'Isolante K-Flex ST Frigo, Aeroflex HF, 3i - Isopipe HAT, Conel Flex HT, Eurobatex,
- Flexen Kälteschlauch, Isidem Coolflex AF.

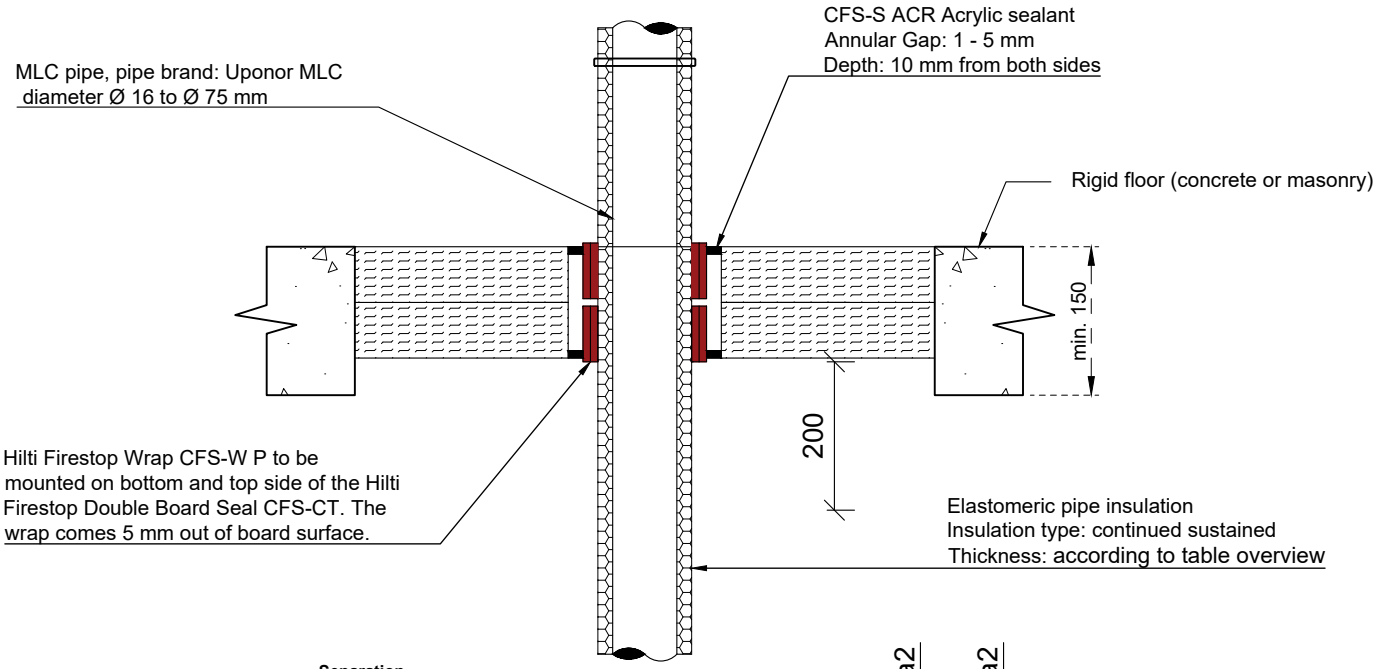
Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

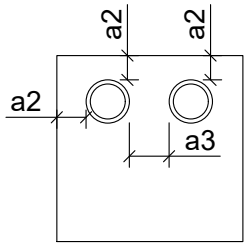
Gap seal
All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

HILTI	APPLICATION: **Al-composite Pipe Penetration**	ID: **CT B1SF 1.21**
INFORMATION: **- Not to scale** **- All units are in millimetres** **- Tested according EN 1366-3** **- Coverage acc. ETA 11/0429** **- 4/2024**	**Armaflex Insulated Uponor MLC**	**CFS-CT** REV: **01**
	Fire Rating EI 120 U/C	**Page 1/1**





Separation					
Layers	Diameter	Insulation thickness	a2	a3	Classification
1	16 x 2.0	8.0 to 32.0	50	50	EI 120 U/C
1	20 x 2.25	8.5 to 33.5	50	50	EI 120 U/C
1	25 x 2.5	8.5 to 35.0	50	50	EI 120 U/C
1	32 x 3.0	9.0 to 35.0	50	50	EI 120 U/C
2	50 x 4.5	9.0 to 38.0	25	0	EI 120 U/C
2	63 x 6.0	9.5 to 39.5	25	0	EI 120 U/C

Construction details:
- CFS-CT B 1S tightly to fit into the opening of the floor, placed against each other, installed flush with the floor surface at the top side only.
- All cut edges of boards sealed with Hilti Firestop Acrylic Sealant CFS-S ACR.
- Maximum seal size is 600 x 1000 w x h (mm x mm), or alternative length to width ratio, see general part of this document.

Rigid floors
- Min. thickness: 150 mm, must comprise of concrete, aerated concrete or masonry. Min. density 550 kg/m^3.

Approved manufacturers and type of FEF insulations:
- Armaflex AF, Armaflex SH, Armaflex Ultima, Armaflex XG, Armaflex NH, Armaflex HT, Insul-Tube H-Plus (nmc), Kaiflex KK plus,
- Kaiflex KK, Kaiflex HF plus, l'Isolante K-Flex ECO, l'Isolante K-Flex ST Frigo, Aeroflex HF, 3i - Isopipe HAT, Conel Flex HT, Eurobatex,
- Flexen Kälteschlauch, Isidem Coolflex AF.

Distances:
- General distance rules given in chapter 2.2 of ETA 11/0429 are not valid for Wrap CFS-W P.
- Single and multiple penetrations, reffer to separations a2 – a3 in the table and detailed description in clause of ETA 11/0429.
- Min. 100 mm distance to other CFS-CT B 1S openings.

Gap seal
All cut edges and remaining gaps filled with Hilti Firestop Acrylic Sealant CFS-S ACR.

First support for penetrants
- > 250 mm

1. The application limits on this detail are for guidance purposes only. For more detailed information based on the full range of available test results please contact the Hilti Technical Advisory Service.
2. The product and application has been assessed as a minimum to the BS 476 standard. It may have additional European and worldwide testing. Please contact Hilti for further information.
3. All installations should be carried out in accordance with Hilti's installation instructions and by competent & experienced installers using Hilti branded products.
4. All services are to be correctly and adequately supported to prevent collapse and distortion.

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