CFS-IS: FIRESTOP INTUMESCENT SEALANT

Product pack

ETA – 10/0406

TECHNICAL DATA

APPLICATIONS

CHANGE LOG

Revision 01 – 10/2024

FIRESTOP INTUMESCENT SEALANT CFS-IS

A water-based acrylic intumescent firestop sealant for small to medium-sized cable and conduit penetration.

APPLICATIONS

- Fire seal for single cables and bundles
- Sealing of conduits
- Sealing of blank openings
- Sealing of irregular openings

ADVANTAGES

- Solvent free sealant, easy to clean up
- Simple adding of cables later on
- Low shrinkage of sealant
- Paintable with most paints
- Impermeable to air, N_2, CO_2 and CH_4

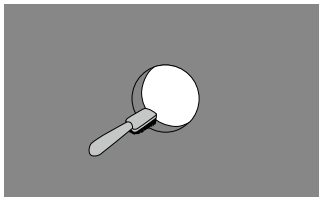
The European Technical Approval (ETA) and the technical data sheet can be obtained via your local Hilti contact.

Technical data

Chemical basis	Water-based acrylic sealant
Volume shrinkage	10-20 %
Intumescent	Yes
Cure Time (at 23°C/50% r.H)	~ 3 mm / 72 h
Application temperature range	5°C - 40°C
Storage and transportation temperature – range	5 °C - 25 °C
Shelf life (@73°F/23°C and 50% relative humidity)	12 month(s)
Reaction to fire classification according to EN 13501-1	Class E
Approvals	ETA-10 / 0406

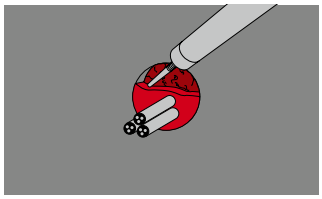
Packaging	Volume	Colour	Order designation	Sales quantity	Item number
Cartridge	310 ml	Anthracite	Firestop intumescent sealant CFS-IS	1 pc	02025238
Cartridge	310 ml	Anthracite	Firestop intumescent sealant CFS-IS	1 pc	02004613
Cartridge	310 ml	Anthracite	Firestop intumescent sealant CFS-IS	1 pc	02004614
Cartridge	310 ml	Anthracite	Firestop intumescent sealant CFS-IS	1 pc	02004615

INSTALLATION INSTRUCTIONS

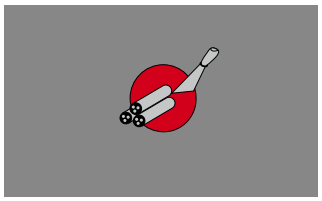


Clean the opening to be sealed. The material around the opening must be dry, in sound condition and free from dust or grease.

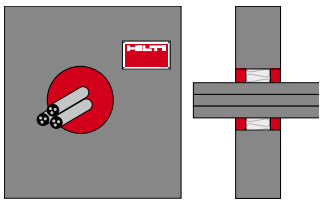
Pack mineral wool. Leave sufficient depth for applying CFS-IS.

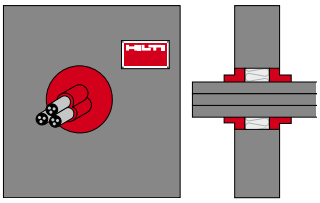


Apply CFS-IS. Apply to the required depth in order to obtain the desired fire rating. Making sure CFS-IS contacts all surfaces to provide maximum adhesion.



Smooth CFS-IS. Smooth before the skin forms using water and a spatula. Leave completed seal undisturbed for 48 hours.





For maintenance reasons, a penetration seal could be permanently marked with an installation plate. For special seal types with additional sealant CFS-IS along the cables/conduits see ETA-10/0406 and/or specific standard detail within this pack for more information.

Loose mineral wool products suitable for being used as backfilling material of Hilti Firestop Acrylic Sealant CFS-S ACR: Heralan LS (Knauf Insulation), Isover loose wool SL (Saint-Gobain Isover), Isover Universal-Stopfwolle (Saint-Gobain Isover), Rockwool RL (Rockwool), Paroc Pro Loose Wool (Paroc OY AB).

ADDITIONAL ATTRIBUTES

Characteristics	Assessment of characteristics	Norm, standard, test
Health and the environment Air permeability (gas thightness)	Impermeable for air, Nitrogen (N2), CO2 and Methane (CH4) determined for 50 mm thickness of CFS-IS	EN 1026
Dangerous substances	CFS-IS is in compliance concerning the registration, evaluation, authorization and restriction of Chemicals (REACH). The product specification has been compared with the list of dangerous substances of the European Commission to verify that it does not contain such substances above the acceptable limits.	Material safety data sheet
Durability and serviceability	Use category $Y_{2, (-5/+70)° C}$ (suitable for penetration seals intended for use at temperatures between -5° C and +70° C, no exposure to rain or UV).	ETAG 026-2
Electrical properties	Volume resistivity 164 x 1010 ± 55 x 1010 Ohm Surface resistivity 318 x 106 ± 84 x 106 Ohm	DIN IEC 60093 (VDE 0303 Part 30)
Reaction to fire	Class E	EN 13501-1

APPLICATION INFORMATION

FOR PIPES/CABLE DIAMETERS

S = Single pipe/cable*

B = pipe/cable Bundle

*For pipes, if no S or B, assume single pipe.

FOR INSULATION

N-C = Non-Combustible (e.g., stone wool etc.)

C = Combustible (e.g., Armaflex, phenolic etc.)

None = No insulation

LS = Local Sustained

LI = Local Interrupted

CS = Continuous Sustained

CI = Continuous Interrupted

Please note, in many cases details have numerous pages. Please check all pages for the necessary information as differing insulation layouts might be on differing pages (e.g., LS one page 1 and LI on page 2 etc.).

PENETRATION TYPE

Single = penetration seal intended for penetrations with only one service passing through

Multi = penetration seal intended for penetrations where more than one service of the same type (e.g. cables) or pipe material group pass through

Mixed = penetration seal intended for penetrations where more than one type of services (e.g. cables and pipes or pipes of different pipe material groups) pass through

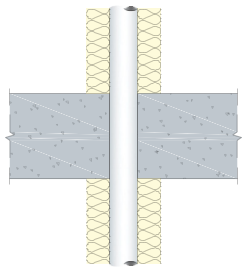
CLASSIFICATION

Classification will give the best-case EI value possible. As such, check each specific detail as there may be instances where a higher I value is possible or another sized service within the application may attain a lower value (e.g., 110mm pipe achieves EI 120 but a 160mm pipe achieves EI 90).

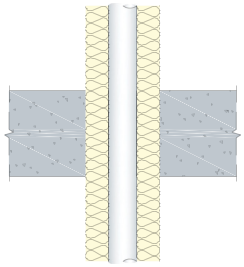
PRODUCT/DETAIL

Full product name first/Detail ID (See specific detail for the full ID).

Please note, in many cases details have numerous pages. Please check all pages for the necessary information.



Continued Interrupted (CI)



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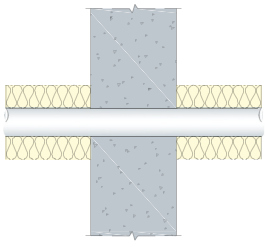

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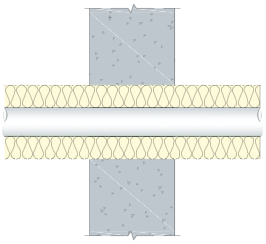
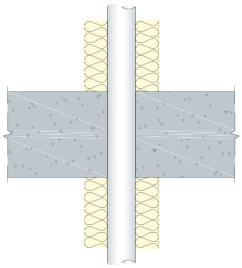
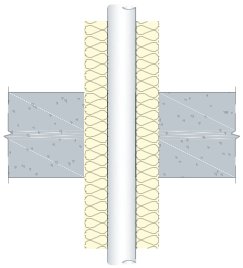


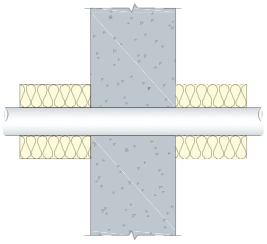
Continued Sustained (CS)



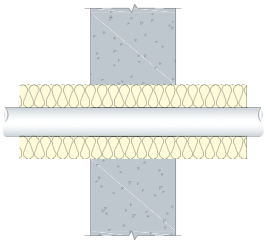
Local Interrupted (LI)



Local Sustained (LS)



Local Interrupted (LI)



Local Sustained (LS)

Min. base material thickness	Pipes		Insulation			Penetration type			Classification	Product/Detail
	Material	Size	N/C	C	None	Single	Multi	Mixed		
≥ 100	PE-XD	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-XB	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-HD	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-Al	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-RT	Ø ≥ 16 – 40		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-XD	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PE-XB	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PE-HD	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PE-Al	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PE-RT	Ø ≥ 16 – 40			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PP	Ø ≥ 32 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PVC	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-03
≥ 110	Copper	Ø ≥ 10 – 89	LS			✓			EI 120	CFS-IS:FW/RW-M-04
≥ 110	Steel	Ø ≥ 10 – 89	LS			✓			EI 120	CFS-IS:FW/RW-M-04
≥ 110	Copper	Ø ≥ 10 – 89		CS		✓			EI 120	CFS-IS:FW/RW-M-04
≥ 110	Steel	Ø ≥ 10 – 89		CS		✓			EI 120	CFS-IS:FW/RW-M-04

Min. base material thickness	Pipes		Insulation			Penetration type			Classification	Product/Detail
	Material	Size	N/C	C	None	Single	Multi	Mixed		
≥ 100	PE-XD	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-XB	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-HD	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-Al	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-RT	Ø ≥ 16 – 40		LS		✓			EI 120	CFS-IS:FW/RW-M-01
≥ 100	PE-XD	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PE-XB	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PE-HD	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PE-Al	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PE-RT	Ø ≥ 16 – 40			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PP	Ø ≥ 32 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-02
≥ 100	PVC	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:FW/RW-M-03
≥ 110	Copper	Ø ≥ 10 – 89	LS			✓			EI 120	CFS-IS:FW/RW-M-04
≥ 110	Steel	Ø ≥ 10 – 89	LS			✓			EI 120	CFS-IS:FW/RW-M-04
≥ 110	Copper	Ø ≥ 10 – 89		CS		✓			EI 120	CFS-IS:FW/RW-M-04
≥ 110	Steel	Ø ≥ 10 – 89		CS		✓			EI 120	CFS-IS:FW/RW-M-04
≥ 150	PVC	Ø ≥ 32 – 50			✓	✓			EI 180	CFS-IS:RW-M-01

Min. base material thickness	Pipes		Insulation			Penetration type			Classification	Product/Detail
	Material	Size	N/C	C	None	Single	Multi	Mixed		
≥ 150	PE-XD	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:RF-M-01
≥ 150	PE-XB	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:RF-M-01
≥ 150	PE-HD	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:RF-M-01
≥ 150	PE-Al	Ø ≥ 16 – 50		LS		✓			EI 120	CFS-IS:RF-M-01
≥ 150	PE-RT	Ø ≥ 16 – 40		LS		✓			EI 120	CFS-IS:RF-M-01
≥ 150	PE-XD	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:RF-M-02
≥ 150	PE-XB	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:RF-M-02
≥ 150	PE-HD	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:RF-M-02
≥ 150	PE-Al	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:RF-M-02
≥ 150	PE-RT	Ø ≥ 16 – 40			✓	✓			EI 120	CFS-IS:RF-M-02
≥ 150	PP	Ø ≥ 32 – 50			✓	✓			EI 120	CFS-IS:RF-M-02
≥ 150	PVC	Ø ≥ 16 – 50			✓	✓			EI 120	CFS-IS:RF-M-03
≥ 150	Copper	Ø ≥ 10 – 89	LS			✓			EI 120	CFS-IS:RF-M-04
≥ 150	Steel	Ø ≥ 10 – 89	LS			✓			EI 120	CFS-IS:RF-M-04
≥ 150	Copper	Ø ≥ 10 – 89		CS		✓			EI 120	CFS-IS:RF-M-04
≥ 150	Steel	Ø ≥ 10 – 89		CS		✓			EI 120	CFS-IS:RF-M-04

Min. base material thickness	Electrical service					Penetration type			Classification	Product/Detail
	Cables	Tray	Conduit	NC or C conduit	Trunking	Single	Multi	Mixed		
≥ 100	S = Ø ≤ 80 B = Ø ≤ 100					✓	✓		EI 120	CFS-IS:FW/RW-E-01
≥ 100			S = Ø ≤ 16-32	C		✓	✓		EI 120	CFS-IS:FW/RW-E-02
≥ 100			S = Ø ≤ 16	NC		✓	✓		EI 120	CFS-IS:FW/RW-E-02
≥ 110			S = Ø ≤ 80	C		✓	✓		EI 120	CFS-IS:FW/RW-E-02

Min. base material thickness	Electrical service					Penetration type			Classification	Product/Detail
	Cables	Tray	Conduit	NC or C conduit	Trunking	Single	Multi	Mixed		
≥ 100	S = Ø ≤ 80 B = Ø ≤ 100					✓	✓		EI 120	CFS-IS:FW/RW-E-01
≥ 100			S = Ø ≤ 16-32	C		✓	✓		EI 120	CFS-IS:FW/RW-E-02
≥ 100			S = Ø ≤ 16	NC		✓	✓		EI 120	CFS-IS:FW/RW-E-02
≥ 110			S = Ø ≤ 80	C		✓	✓		EI 120	CFS-IS:FW/RW-E-02
≥ 150	S = Ø ≤ 80 B = Ø ≤ 100					✓	✓		EI 120	CFS-IS:RW-E-01
≥ 150	S = Ø ≤ 80					✓	✓		EI 180	CFS-IS:RW-E-01

Min. base material thickness	Electrical service					Penetration type			Classification	Product/Detail
	Cables	Tray	Conduit	NC or C conduit	Trunking	Single	Multi	Mixed		
≥ 150	S = Ø ≤ 80 B = Ø ≤ 100					✓	✓		EI 120	CFS-IS:RF-E-01
≥ 150			S = Ø ≤ 16	C&NC		✓	✓		EI 120	CFS-IS:RF-E-02
≥ 150			S = Ø ≤ 16-32	NC		✓	✓		EI 120	CFS-IS:RF-E-03

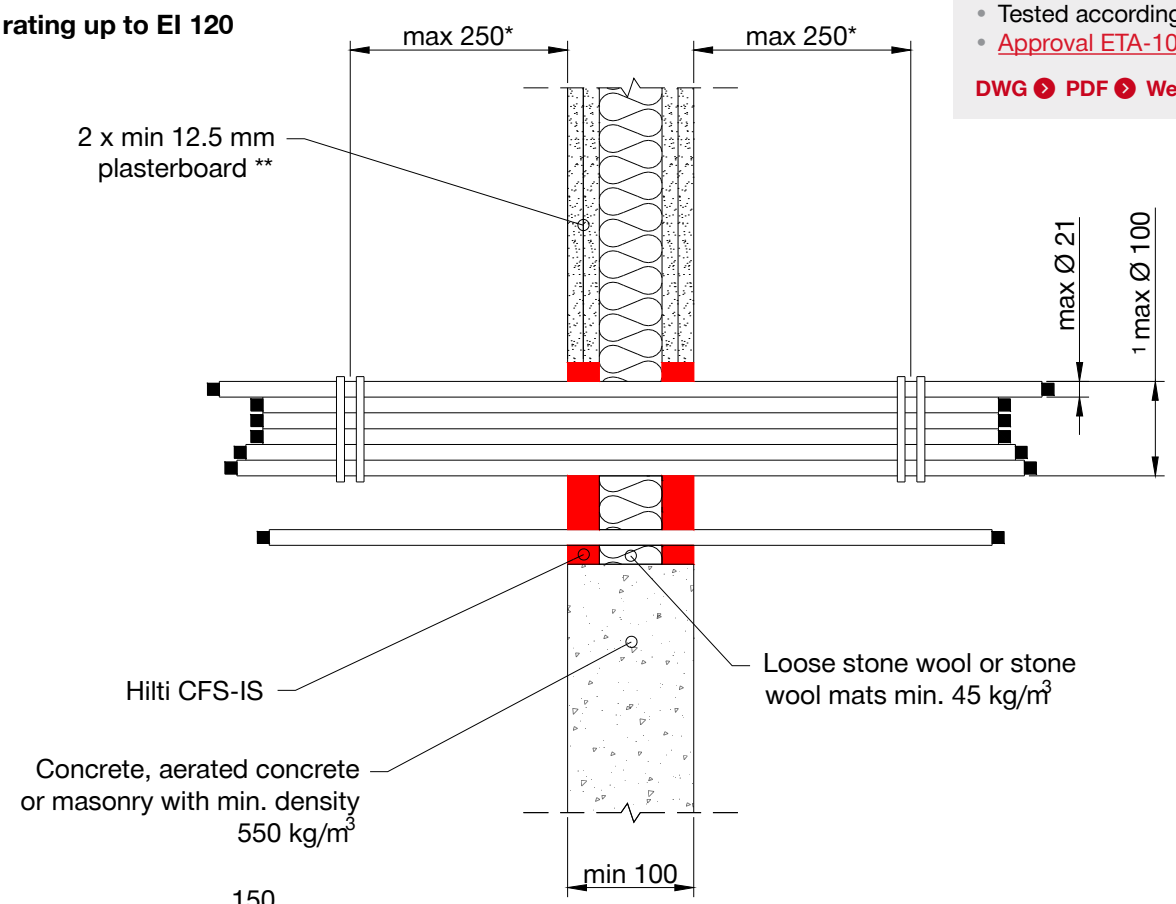
IS: SP-FW/RW-E-01

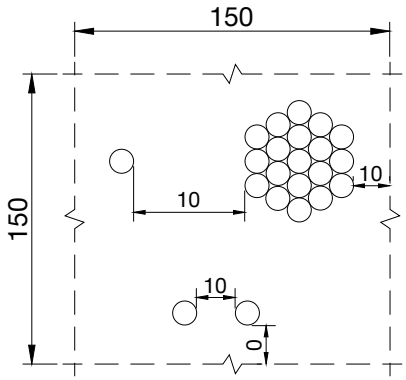
CABLES WITHIN FLEXIBLE & RIGID WALLS

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web





Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

Cable Type / Ø	Classification
Max. Ø21	EI 120
21 ≤ Ø 80	EI 60 EI 120
[1] Tied cable bundle of max. Ø100, with max. single cable Ø21	EI 90 EI 120

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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 (Gt. Britain) Limited | No 1, Circle Square | 3 Symphony Park | Manchester | M1 7FS Freephone: 0800 886 100 | Website: www.hilti.co.uk

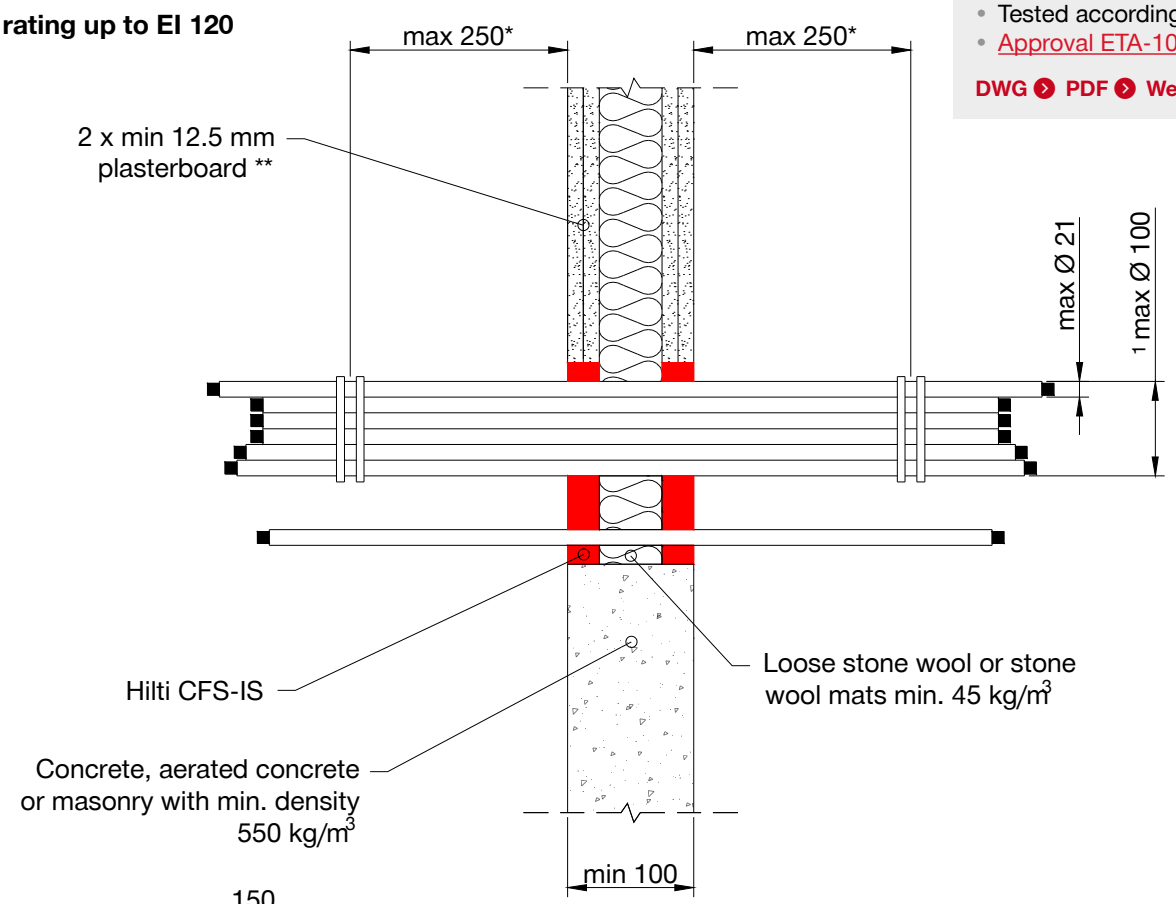
IS: SP-FW/RW-E-01

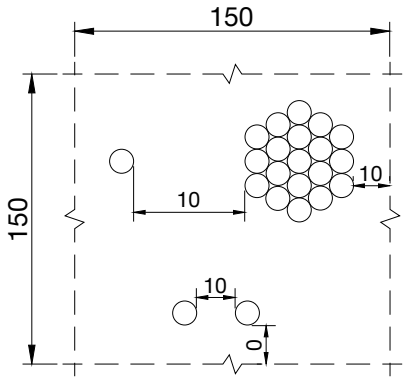
CABLES WITHIN FLEXIBLE & RIGID WALLS

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web





Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

Cable Type / Ø	Classification
Max. Ø21	EI 120
21 ≤ Ø 80	EI 60 EI 120
[1] Tied cable bundle of max. Ø100, with max. single cable Ø21	EI 90 EI 120

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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

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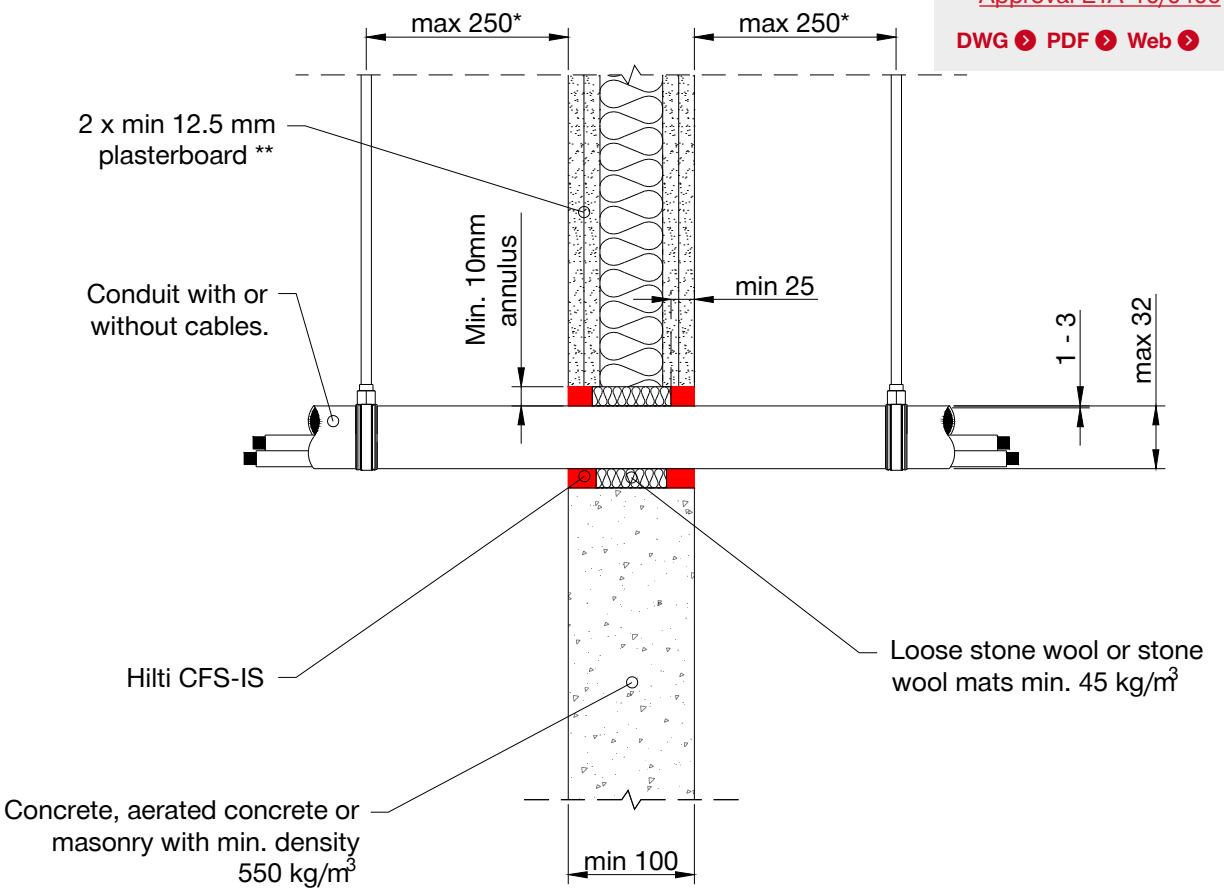
IS: SP-FW/RW-E-02

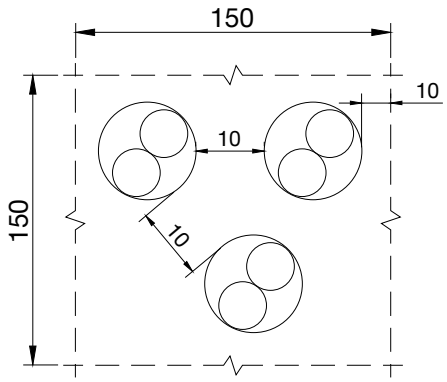
MULTIPLE CONDUITS WITHIN FLEXIBLE AND RIGID WALLS

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web





Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm
Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

Multiple Conduits

Conduit Type / Ø	Classification
Small Steel ≤ Ø16, arranged linear	EI 120 C/U
Small Steel ≤ Ø16, arranged linear	EI 120-U/C
Plastic, diameter 16 ≤ Ø 16 ≤ 32, wall thickness 1-3, arranged linear or in cluster	EI 120-U/C

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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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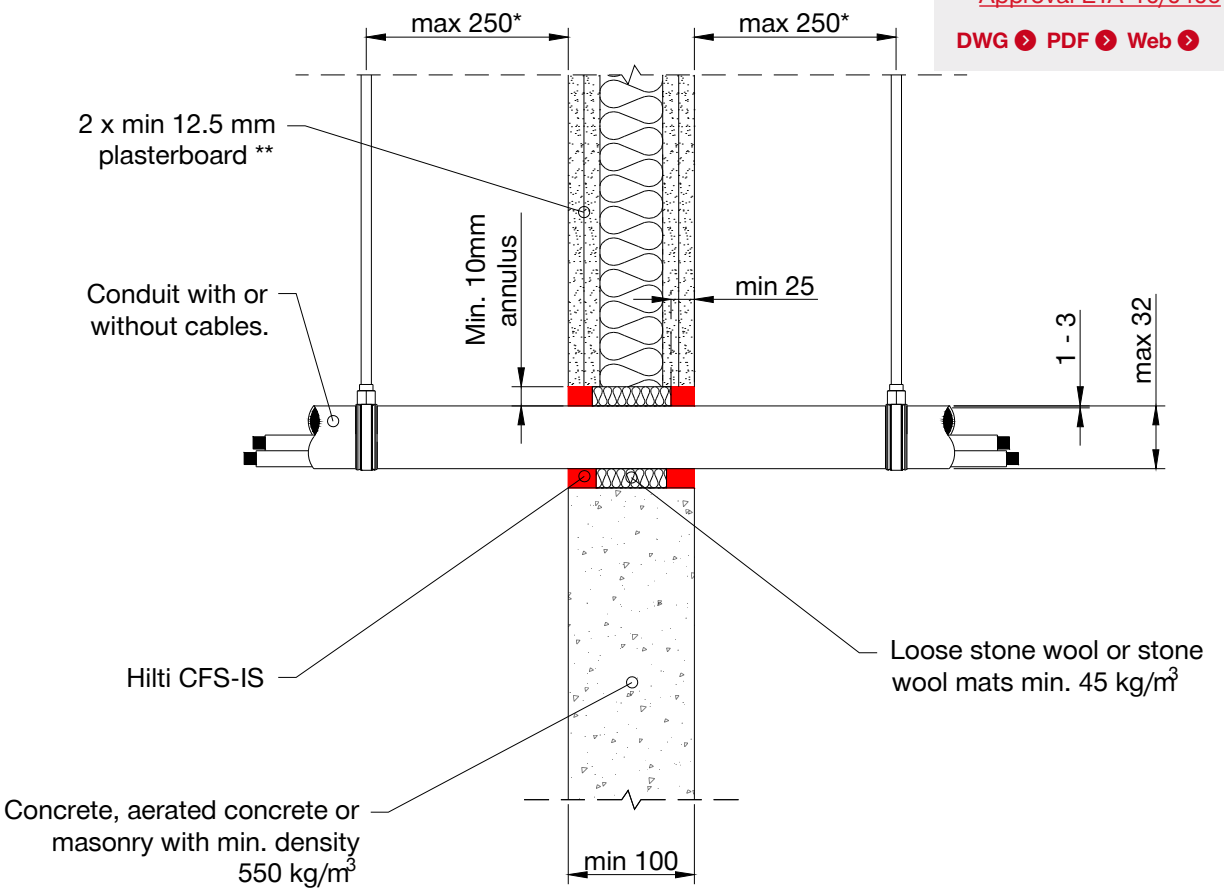
IS: SP-FW/RW-E-02

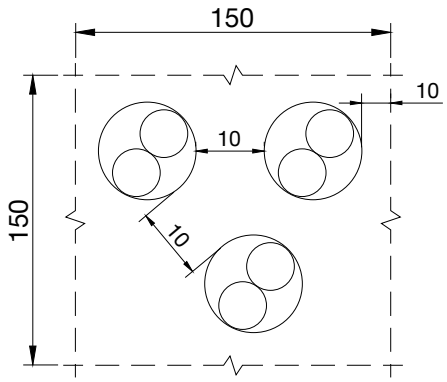
MULTIPLE CONDUITS WITHIN FLEXIBLE AND RIGID WALLS

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web





Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm
Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

Multiple Conduits

Conduit Type / Ø	Classification
Small Steel ≤ Ø16, arranged linear	EI 120 C/U
Small Steel ≤ Ø16, arranged linear	EI 120-U/C
Plastic, diameter 16 ≤ Ø 16 ≤ 32, wall thickness 1-3, arranged linear or in cluster	EI 120-U/C

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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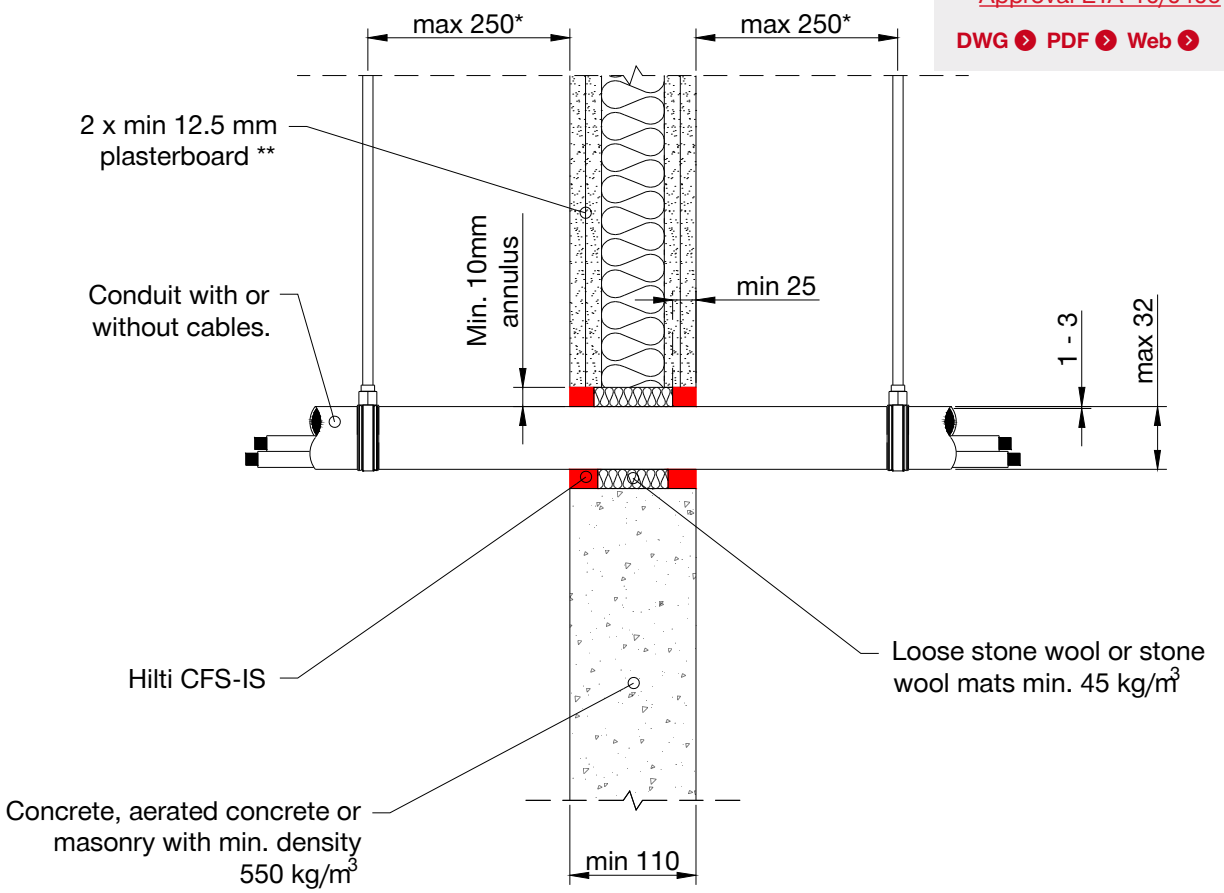
IS: SP-FW/RW-E-02

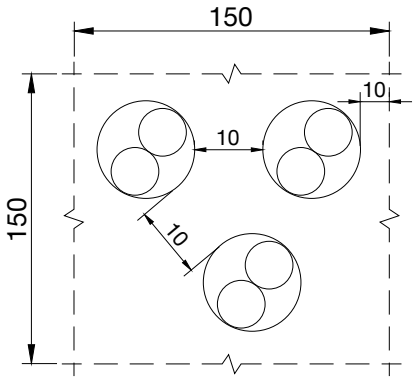
MULTIPLE CONDUITS WITHIN FLEXIBLE AND RIGID WALLS

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web





Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm
Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

Ridgid, flexible and pliable plastic conduits	Classification
Rigid, flexible and pliable plastic conduit up to Ø 40 mm with or without cables and conduits used pairwise up to Ø 80 mm; Flexible PVC conduit or PO conduit, wavehight 4,5 mm	EI 120 U/U
Rigid, flexible and pliable plastic conduit up to Ø 40 mm with or without cables and conduits used pairwise up to Ø 80 mm	EI 120 U/U

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

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MULTIPLE CONDUITS WITHIN FLEXIBLE AND RIGID WALLS

Fire rating up to EI 120

Information
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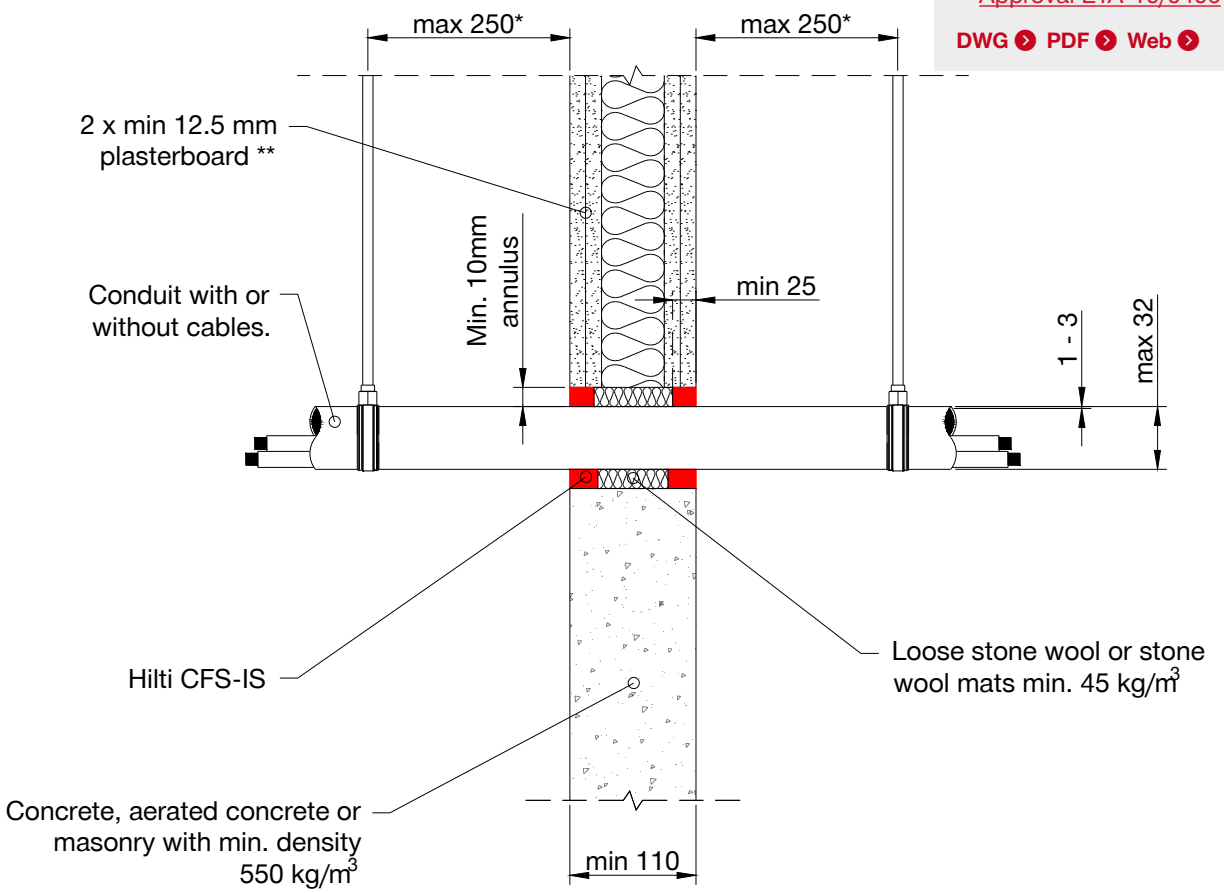
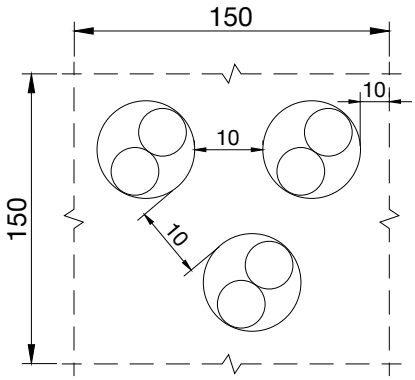
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web





Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm
Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

Ridgid, flexible and pliable plastic conduits	Classification
Rigid, flexible and pliable plastic conduit up to Ø 40 mm with or without cables and conduits used pairwise up to Ø 80 mm; Flexible PVC conduit or PO conduit, wavehight 4,5 mm	EI 120 U/U
Rigid, flexible and pliable plastic conduit up to Ø 40 mm with or without cables and conduits used pairwise up to Ø 80 mm	EI 120 U/U

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

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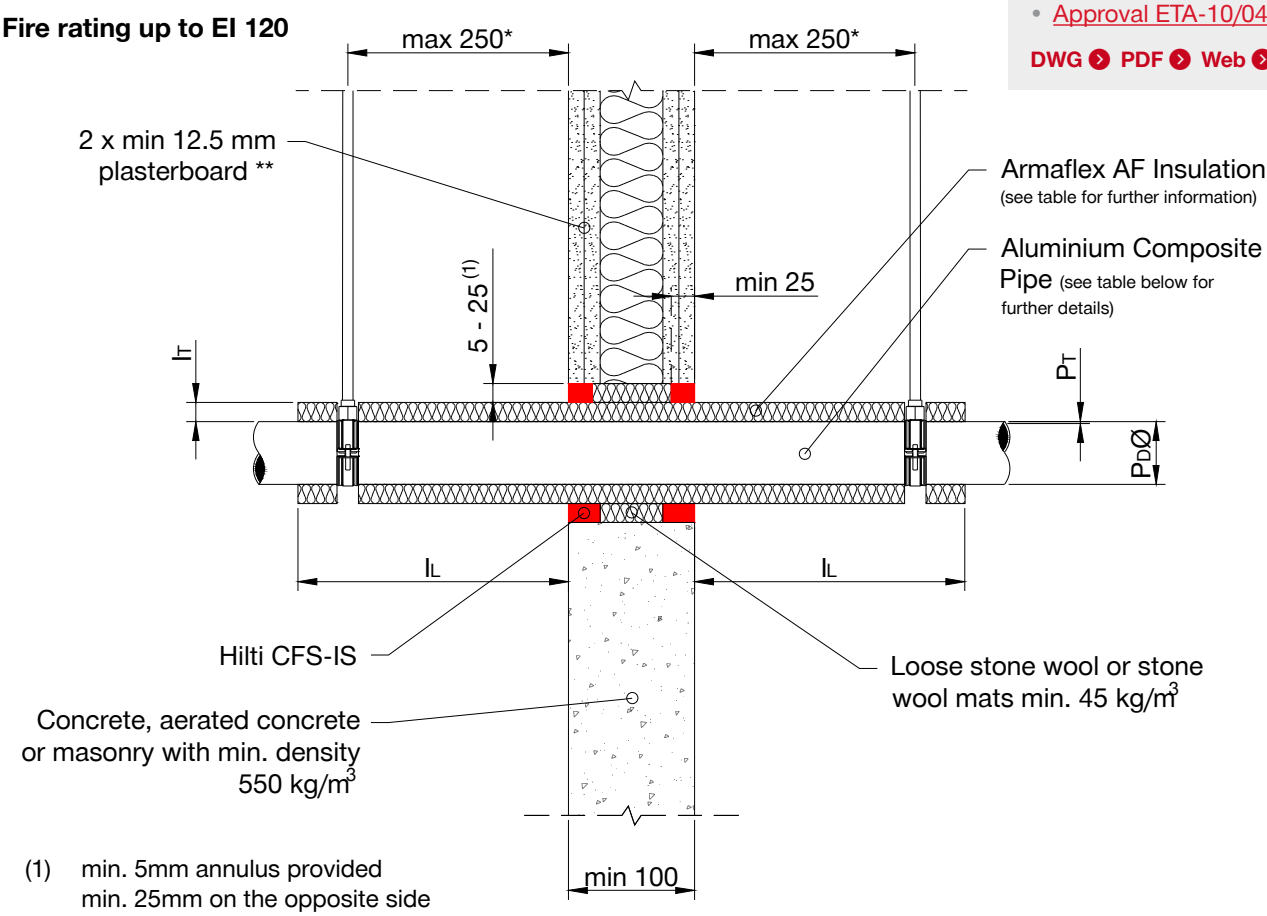
IS: SP-FW/RW-M-01

ALUMINIUM COMPOSITE PIPES WITH LOCAL SUSTAINED INSULATION

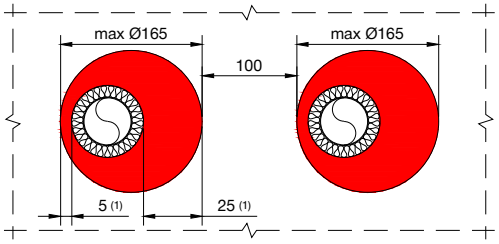
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



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** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

Pipe		Insulation		Classification
$P_D Ø$	P_T	I_T	I_L	
Geberit Mepla (PE-XD/Al/PE-HD)***				
≥ 16-50	2.25-4.0	8-21	≥ 250	EI 90 U/C
Kelkelit Kelox (PE-XB/Al)***				
16	2.0	8-17	≥ 250	EI 120 U/C
≥ 16-50	2.0-4.0	8-21	≥ 250	EI 90 U/C
LK Schewnden (PE-RT/AL/PE-RT)***				
16-40	2.0-3.5	8-21	≥ 250	EI 90 U/C
Uponor Uni Pipe Plus (PE-RT/Al)***				
≥ 16-32	2.0-3.5	8-19.5	≥ 250	EI 90 U/C
The above LS Insulation parameters are also valid for CS				
***All Insulation is Armaflex AF Insulation				

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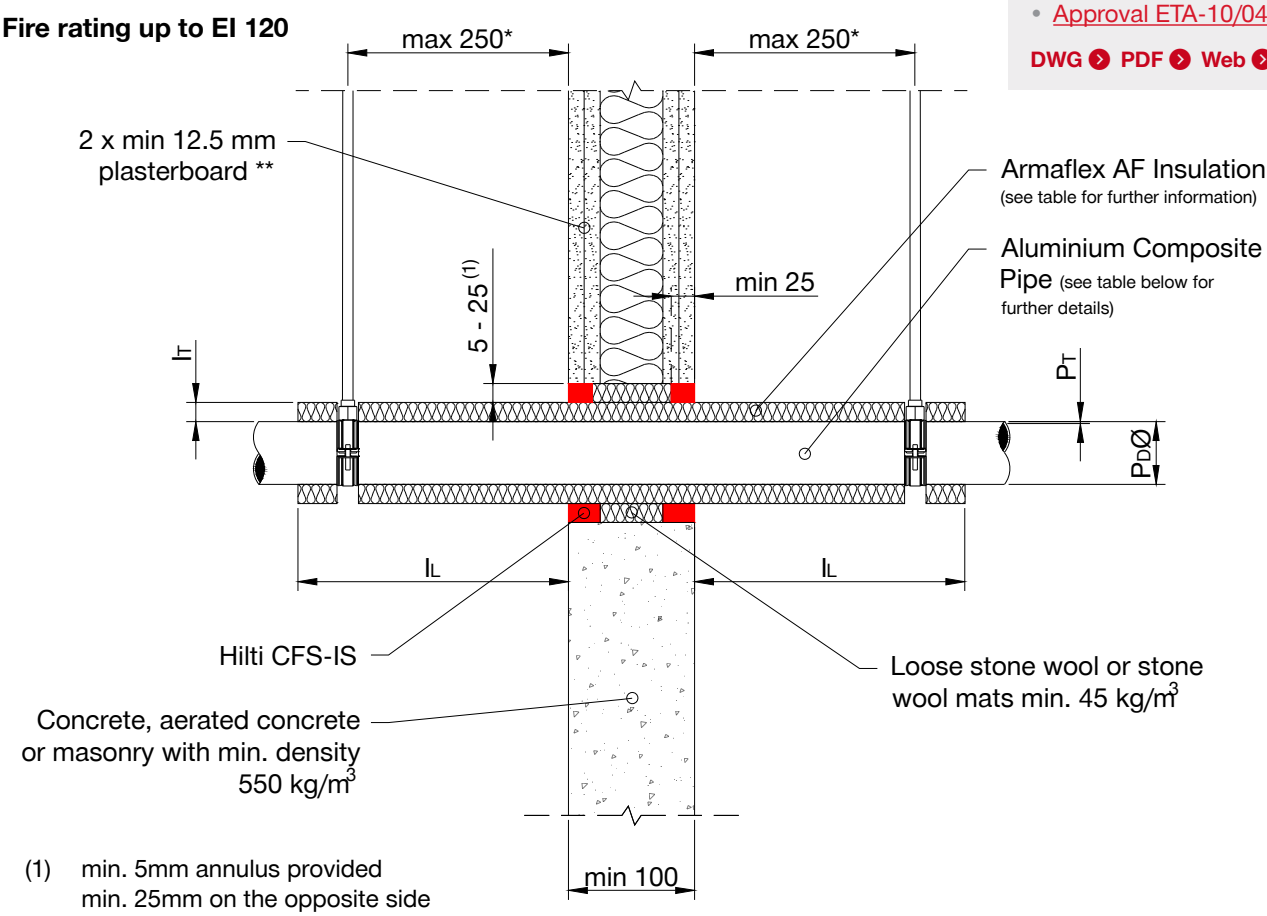
IS: SP-FW/RW-M-01

ALUMINIUM COMPOSITE PIPES WITH LOCAL SUSTAINED INSULATION

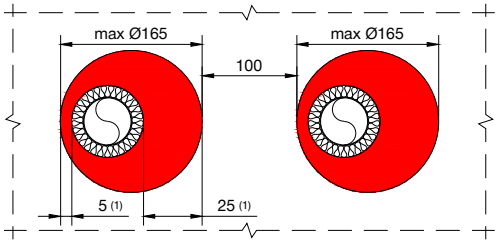
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

Pipe		Insulation		Classification
$P_D Ø$	P_T	I_T	I_L	
Geberit Mepla (PE-XD/Al/PE-HD)***				
≥ 16-50	2.25-4.0	8-21	≥ 250	EI 90 U/C
Kelkelit Kelox (PE-XB/Al)***				
16	2.0	8-17	≥ 250	EI 120 U/C
≥ 16-50	2.0-4.0	8-21	≥ 250	EI 90 U/C
LK Schewnden (PE-RT/AL/PE-RT)***				
16-40	2.0-3.5	8-21	≥ 250	EI 90 U/C
Uponor Uni Pipe Plus (PE-RT/Al)***				
≥ 16-32	2.0-3.5	8-19.5	≥ 250	EI 90 U/C
The above LS Insulation parameters are also valid for CS				
***All Insulation is Armaflex AF Insulation				

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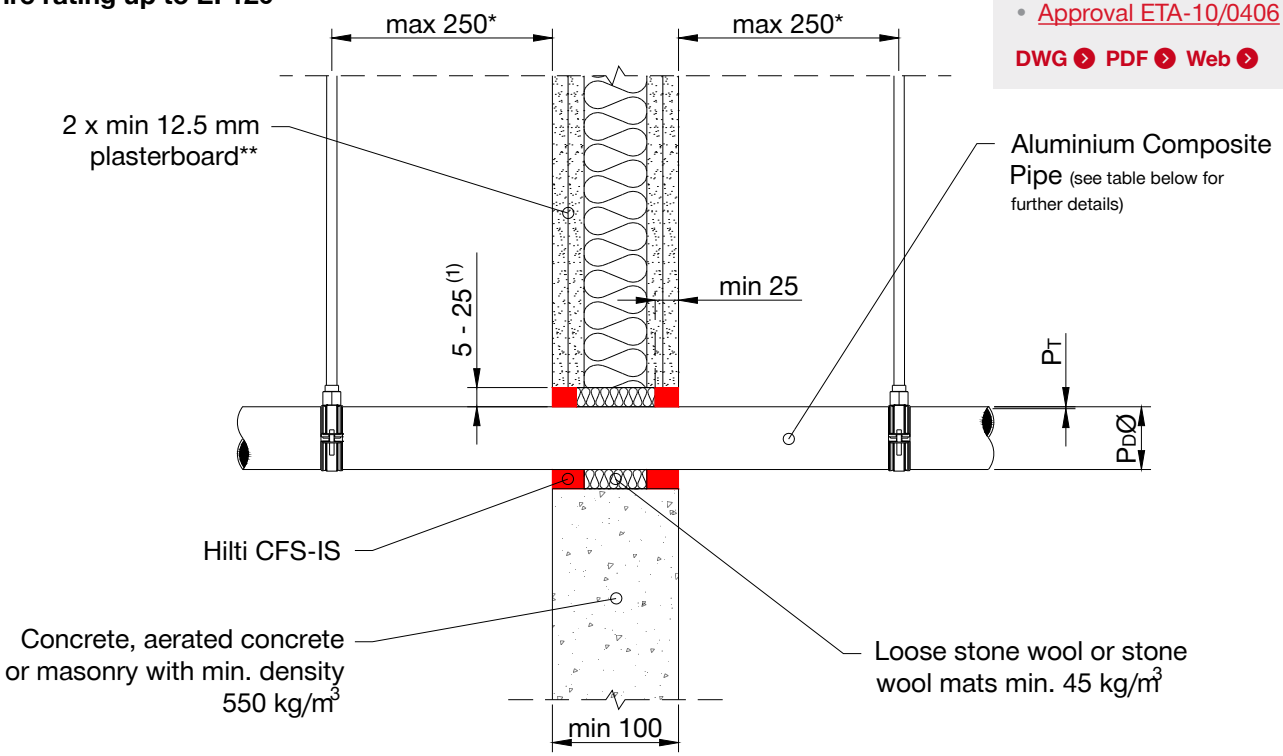
IS: SP-FW/RW-M-02

ALUMINIUM COMPOSITE PIPES WITH NO INSULATION

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



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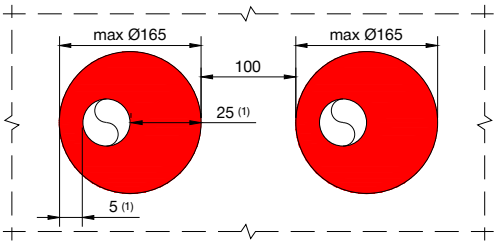
min. 25mm on the opposite side



Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

Pipe		Classification
PDØ	PT	
Geberit Mepla (PE-XD/Al/PE-HD)		
≥ 16-50	2.25-4.0	EI 60 U/C
Geberit Silent (PP-C/P-MD)		
≥ 32-50	2.0	EI 90 U/C
Kelkelit Kelox (PE-XB/AL/PE-XB)		
16	2.0	EI 120 U/C
≥ 16-50	2.0-4.0	EI 90 U/C
LK Schewnden (PE-RT/AL/PE-RT)		
16-40	2.0-3.5	EI 60 U/C
Uponor Uni Pipe Plus (PE-RT/Al)		
≥ 16-32	2.0-3.5	EI 60 U/C
PP Life Master 3 (MM-CO/PP-MV, EN1451-1)		
≥ 32-40	1.8	EI 120 U/U
50	1.8	EI 90 U/C

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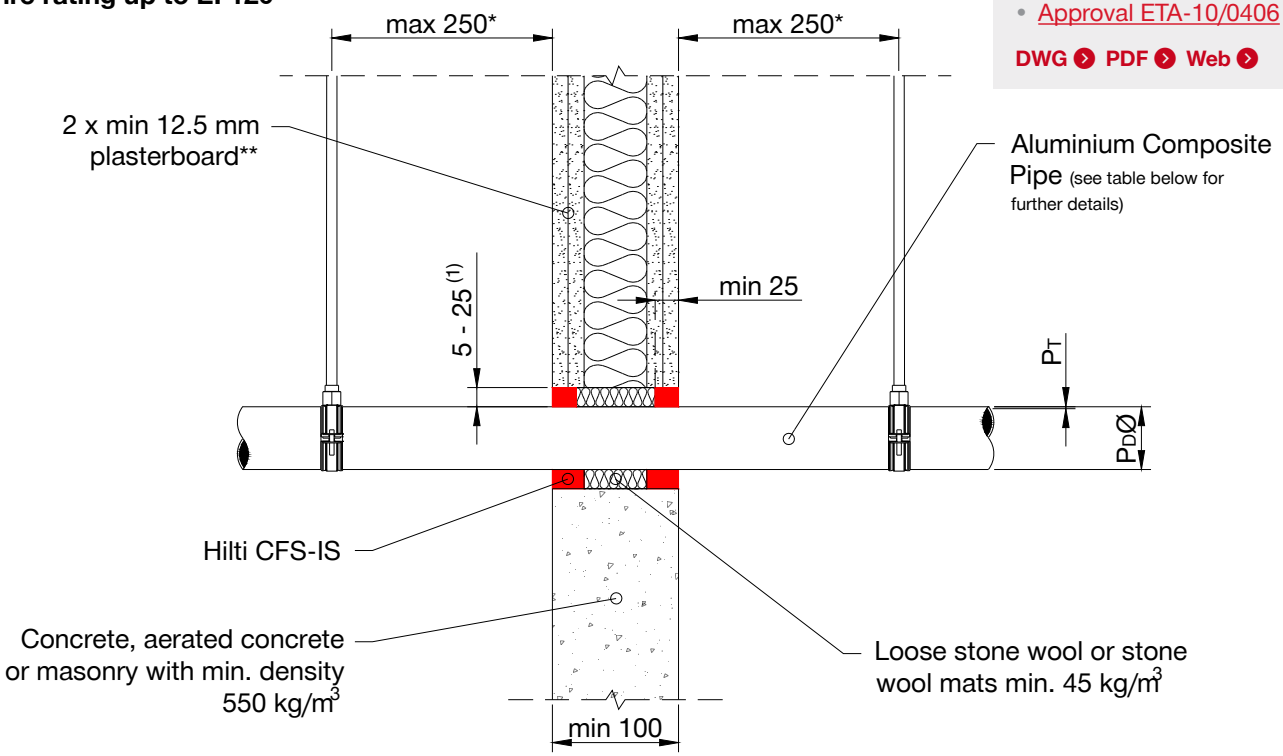
IS: SP-FW/RW-M-02

ALUMINIUM COMPOSITE PIPES WITH NO INSULATION

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



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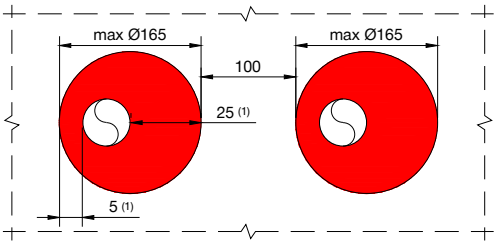
min. 25mm on the opposite side



Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

Pipe		Classification
PDØ	PT	
Geberit Mepla (PE-XD/Al/PE-HD)		
≥ 16-50	2.25-4.0	EI 60 U/C
Geberit Silent (PP-C/P-MD)		
≥ 32-50	2.0	EI 90 U/C
Kelkelit Kelox (PE-XB/AL/PE-XB)		
16	2.0	EI 120 U/C
≥ 16-50	2.0-4.0	EI 90 U/C
LK Schewnden (PE-RT/AL/PE-RT)		
16-40	2.0-3.5	EI 60 U/C
Uponor Uni Pipe Plus (PE-RT/Al)		
≥ 16-32	2.0-3.5	EI 60 U/C
PP Life Master 3 (MM-CO/PP-MV, EN1451-1)		
≥ 32-40	1.8	EI 120 U/U
50	1.8	EI 90 U/C

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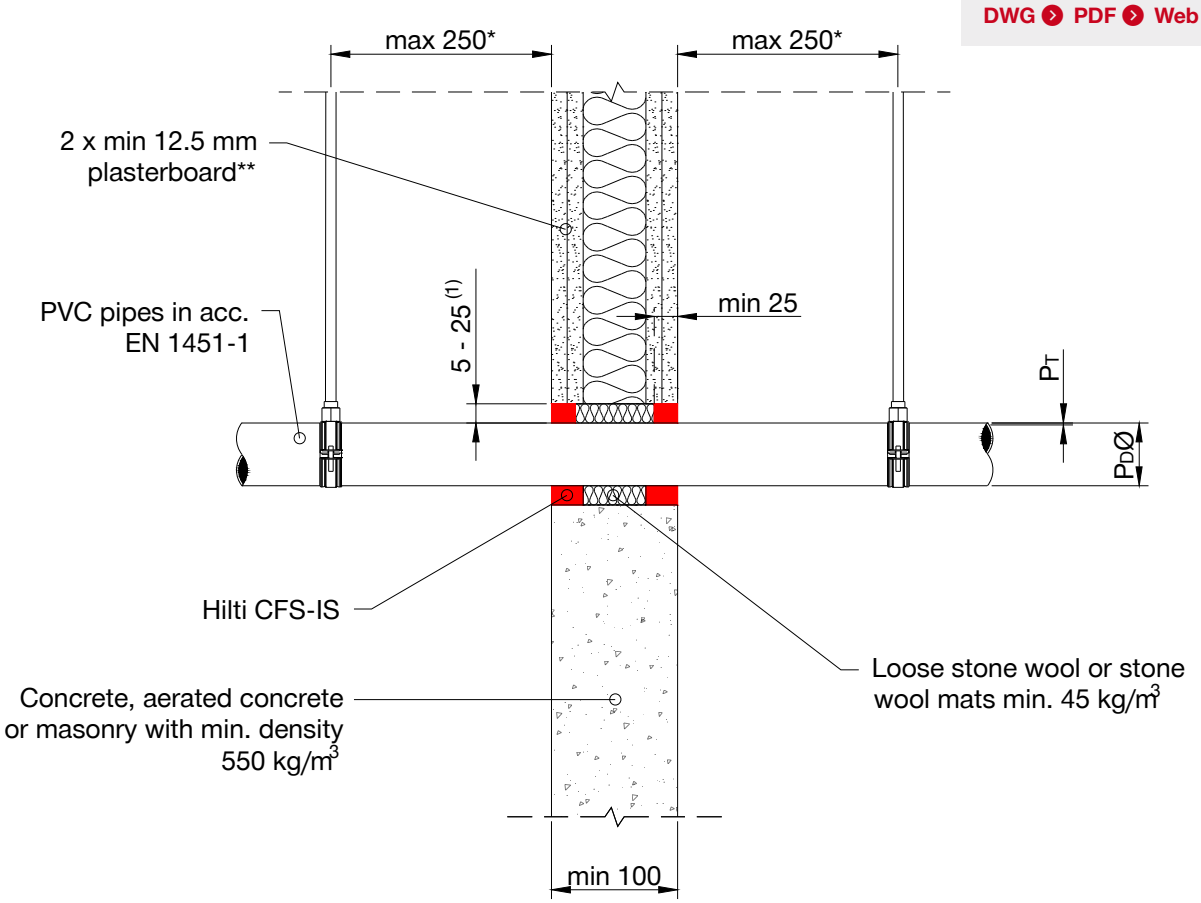
IS: SP-FW/RW-M-03

PVC PIPES WITH NO INSULATION

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



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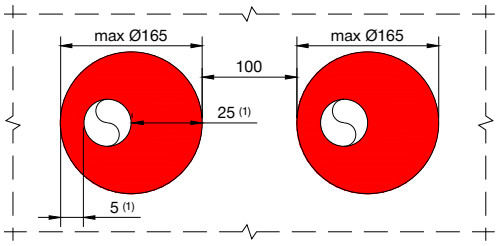
min. 25mm on the opposite side



PVC pipe		
PDØ	**PT**	**Classification**
≥ Ø16 – 20	1.8-2.2	EI 120 U/U
32	1.8-3.6	EI 60 U/U
≥ Ø34 – 40	1.9-3.6	EI 90 U/U
≥ Ø40 – 50	1.9-3.7	EI 90 U/C

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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IS: SP-FW/RW-M-03

PVC PIPES WITH NO INSULATION

Fire rating up to EI 120

Information
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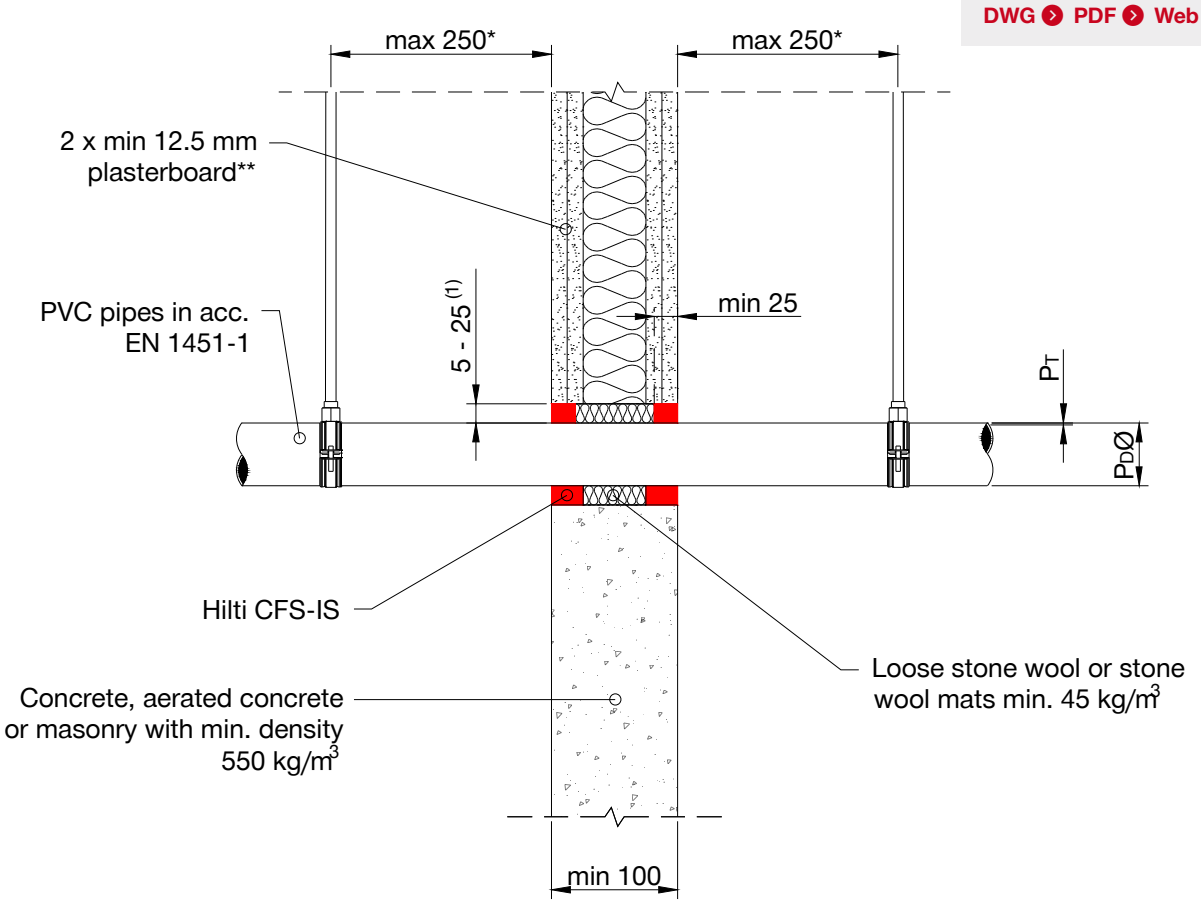
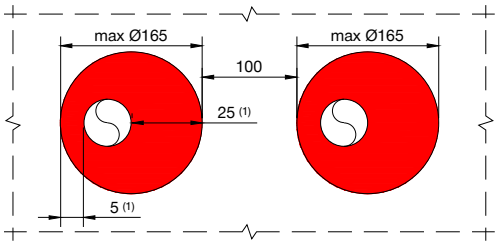
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



PVC pipe		
PDØ	**PT**	**Classification**
≥ Ø16 – 20	1.8-2.2	EI 120 U/U
32	1.8-3.6	EI 60 U/U
≥ Ø34 – 40	1.9-3.6	EI 90 U/U
≥ Ø40 – 50	1.9-3.7	EI 90 U/C

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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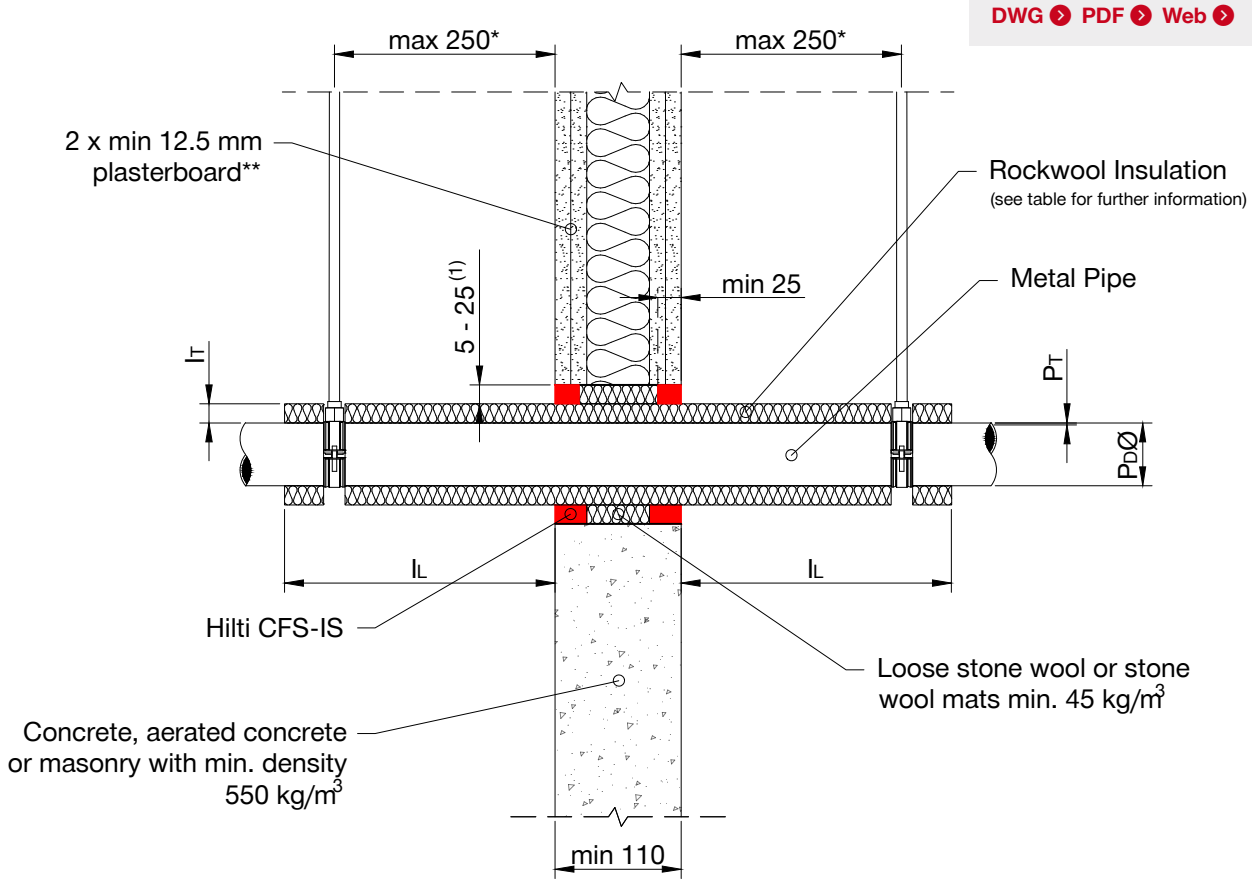
IS: SP-FW/RW-M-04

METAL PIPES WITH LOCALLY SUSTAINED INSULATION

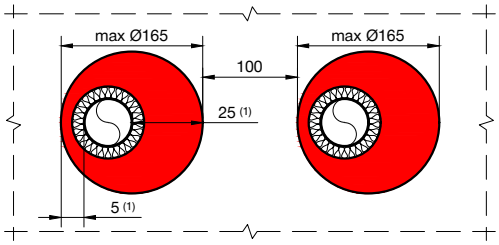
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Pipe		Insulation		Classification
PDØ	PT	IT	IL	
Copper/Steel Pipes (LS) with Rockwool RS 800				
≥ 10-42	1.0 / 1.2-14.2	20	≥ 700	EI 120 C/U
≥ 42-89	1.0 / 1.2-14.2	40	≥ 925	EI 120 C/U

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

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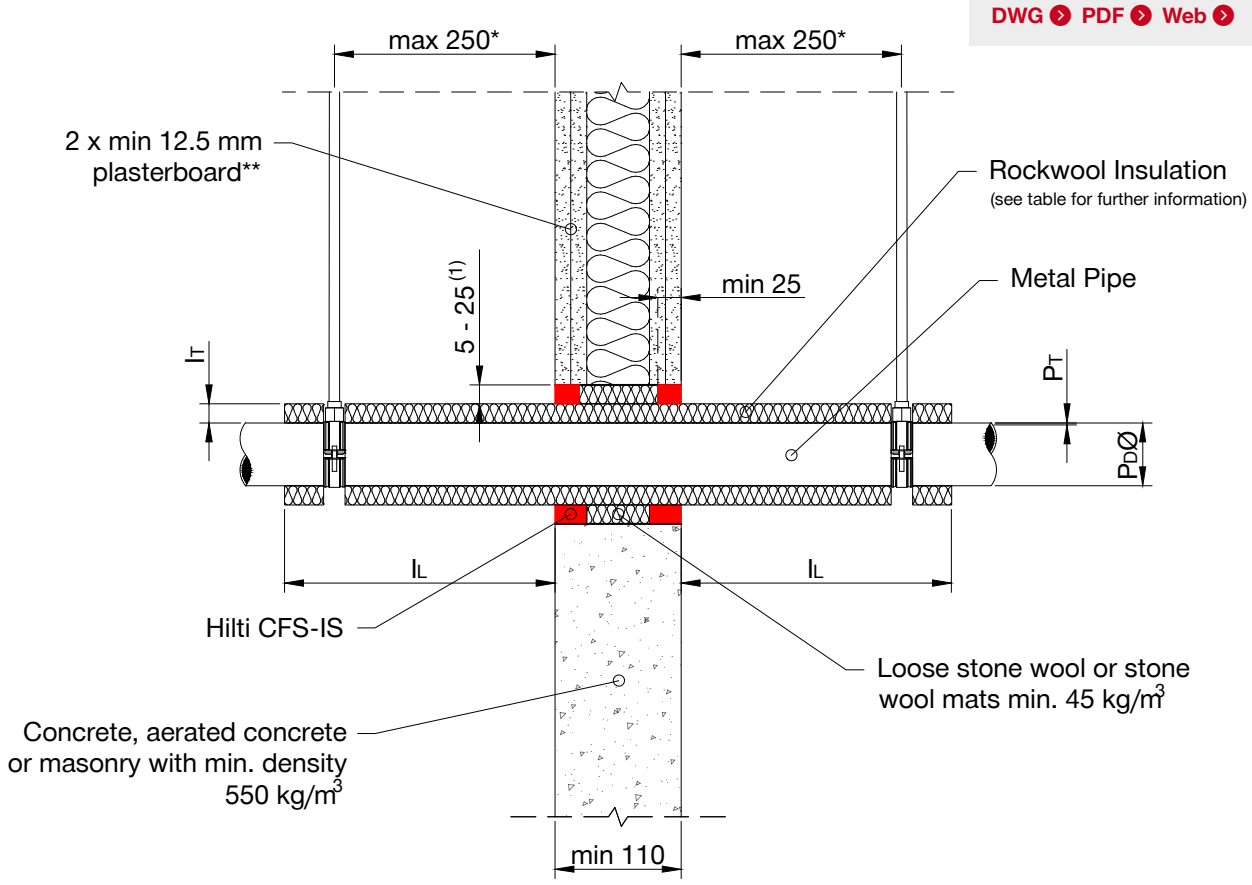
IS: SP-FW/RW-M-04

METAL PIPES WITH LOCALLY SUSTAINED INSULATION

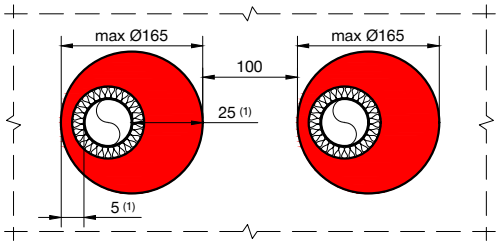
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Pipe		Insulation		Classification
PDØ	PT	IT	IL	
Copper/Steel Pipes (LS) with Rockwool RS 800				
≥ 10-42	1.0 / 1.2-14.2	20	≥ 700	EI 120 C/U
≥ 42-89	1.0 / 1.2-14.2	40	≥ 925	EI 120 C/U

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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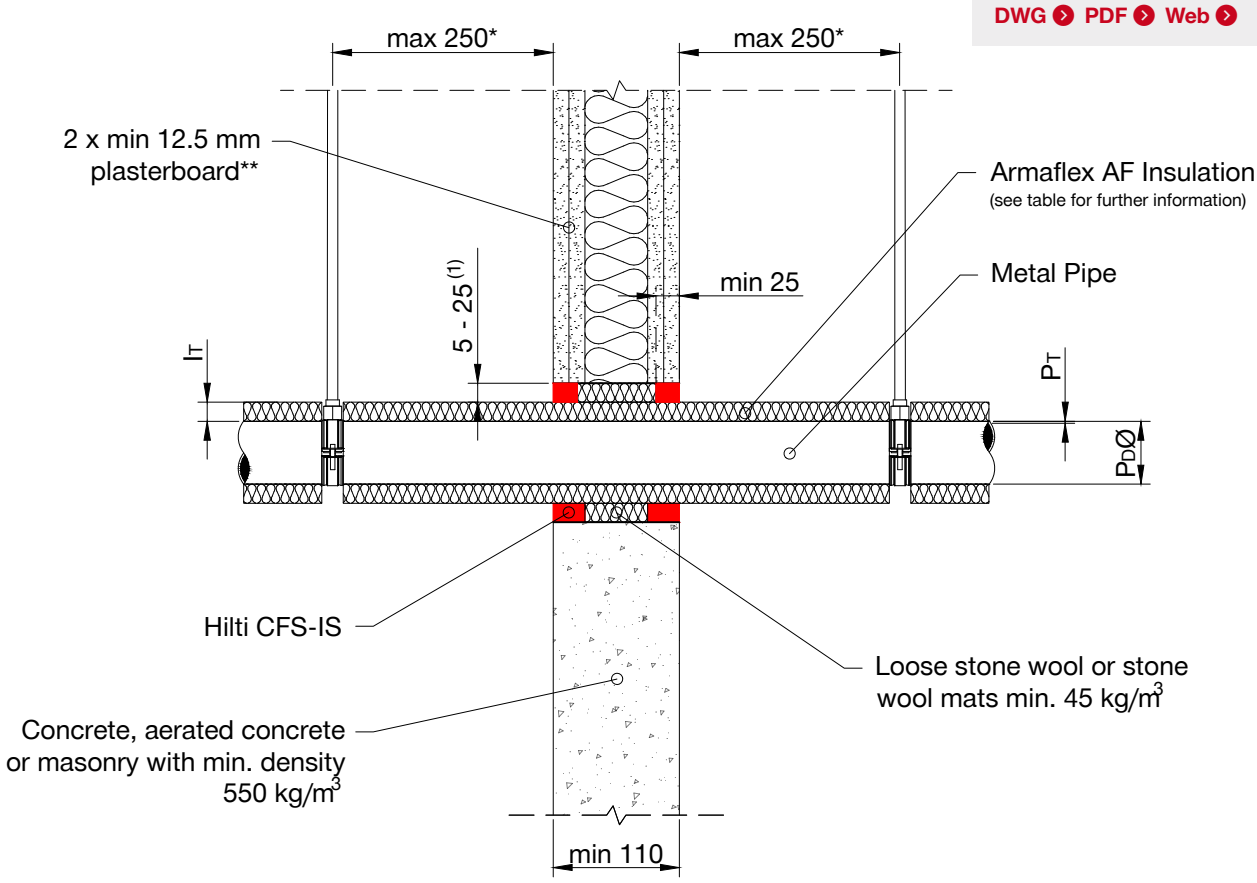
IS: SP-FW/RW-M-04

METAL PIPES WITH CONTINUOUS SUSTAINED INSULATION

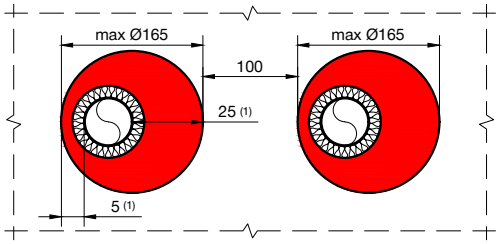
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Pipe PDØ	PT	Insulation IT	Classification
Copper/Steel Pipes (CS) with Armaflex AF			
≥ 10-42	1.0 / 1.2-14.2	7.5-20.5	EI 120 C/U
≥ 42-89	1.0 / 1.2-14.2	14.5-22.5	EI 60 C/U

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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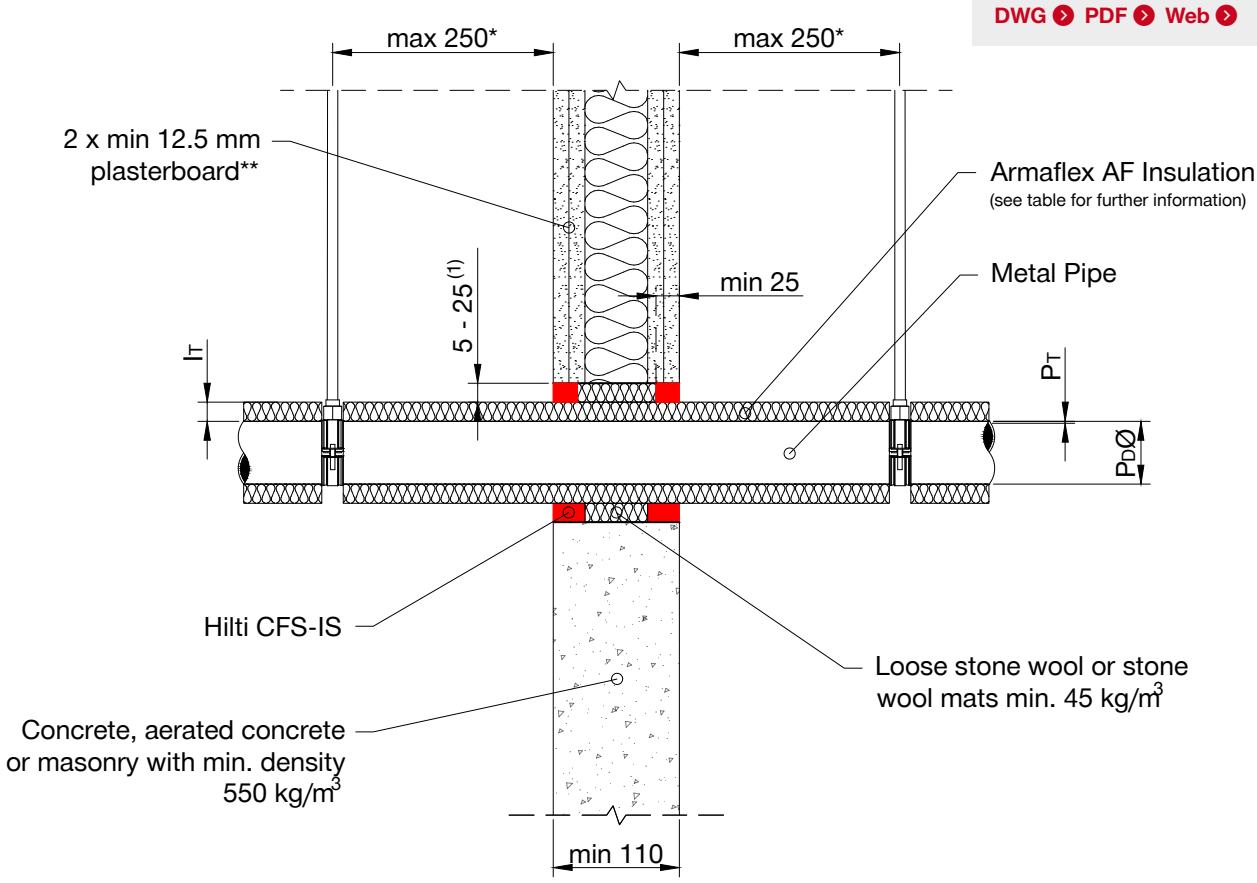
METAL PIPES WITH CONTINUOUS SUSTAINED INSULATION

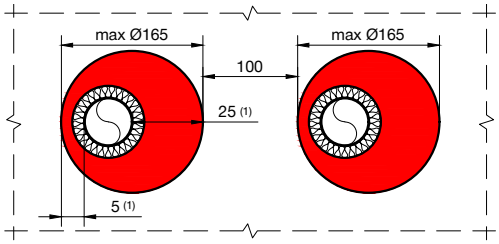
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Pipe PDØ	PT	Insulation IT	Classification
Copper/Steel Pipes (CS) with Armaflex AF			
≥ 10-42	1.0 / 1.2-14.2	7.5-20.5	EI 120 C/U
≥ 42-89	1.0 / 1.2-14.2	14.5-22.5	EI 60 C/U

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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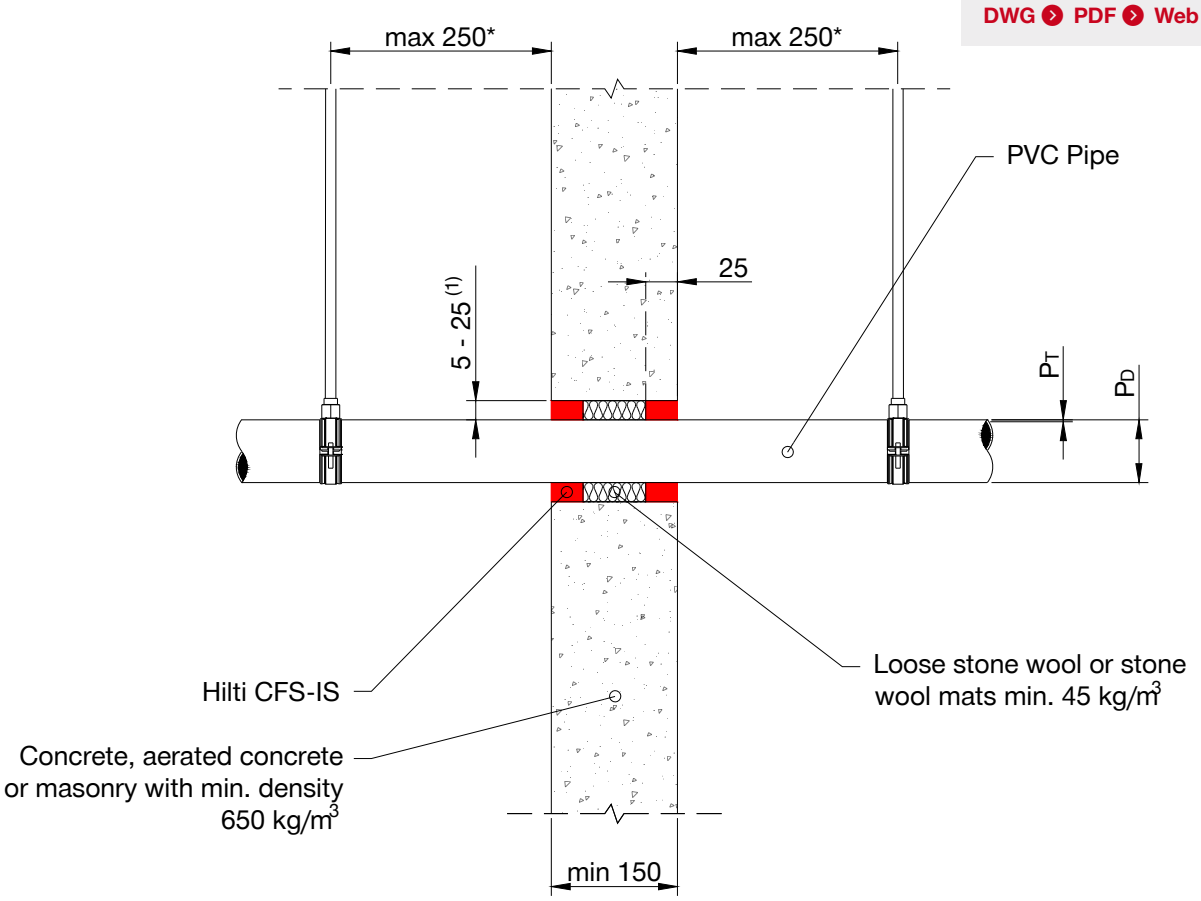
IS: SP-RW-M-01

PVC PIPES WITH NO INSULATION

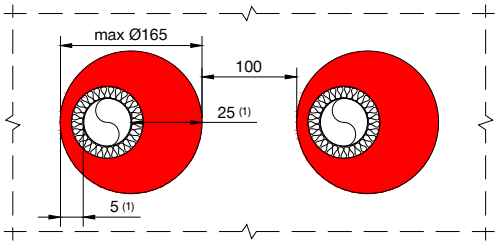
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



PVC pipe (EN1451-1)		
PDØ	**PT**	**Classification**
≥ Ø32 – 50	1.8-2.2-6.4	EI 180 U/U

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

** Comprising of timber or steel studs. Wall construction itself has been classified according to EN 13501-2.

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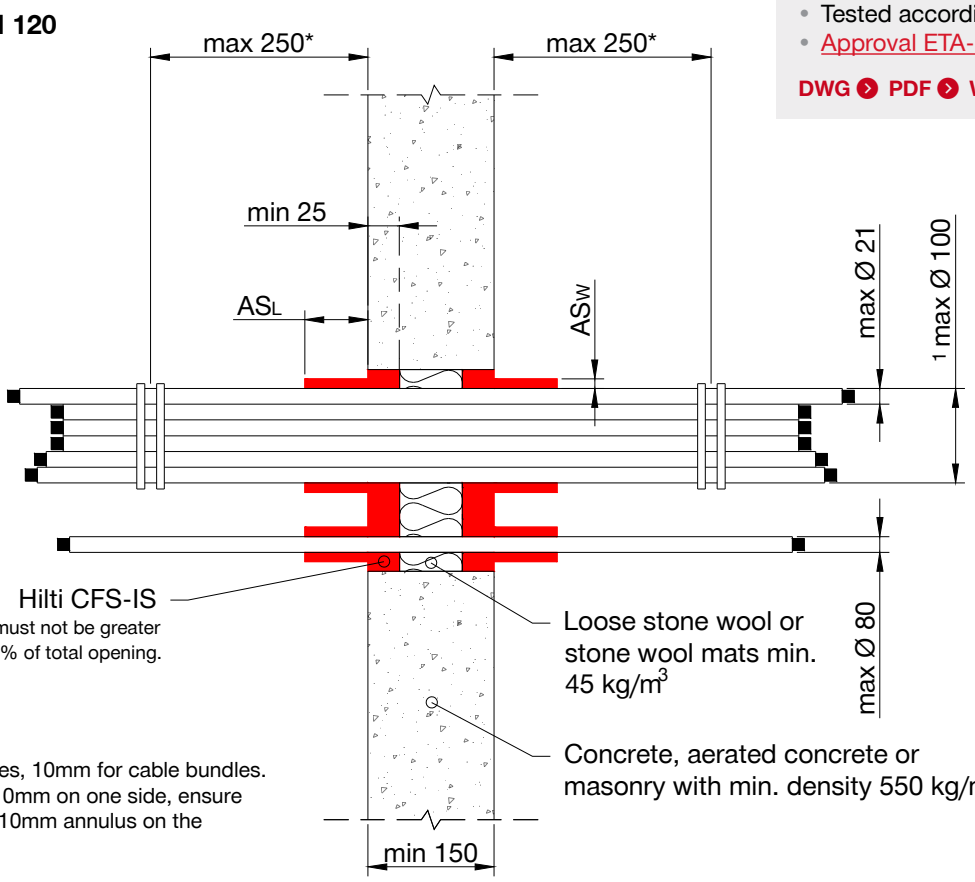
IS: SP-RW-E-01

CABLES WITHIN RIGID WALLS

Fire rating up to EI 120

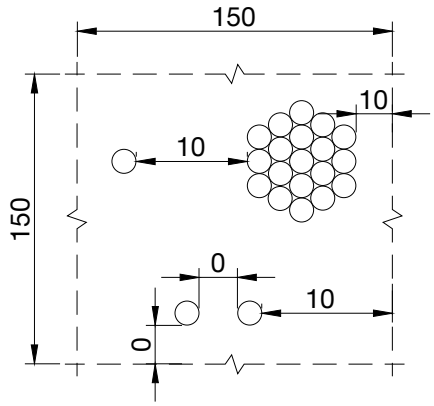
Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



Annular gap note:

- 0mm for single cables, 10mm for cable bundles.
- If the annular gap is 0mm on one side, ensure there is a minimum 10mm annulus on the opposite side.



Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations and timber studs.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

Cable Type / Ø	ASW	ASL	Classification
Max. Ø21	10	50	EI 120
	10	100	EI 120
21 ≤ Ø 80	10	50	EI 120
	10	100	EI 120
[1] Tied cable bundle of max. Ø100, with max. single cable Ø21	10	50	EI 120
	10	100	EI 120

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

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IS: SP-RW-E-01

CABLES WITHIN RIGID WALLS

Fire rating up to EI 120

Information
- Not to scale
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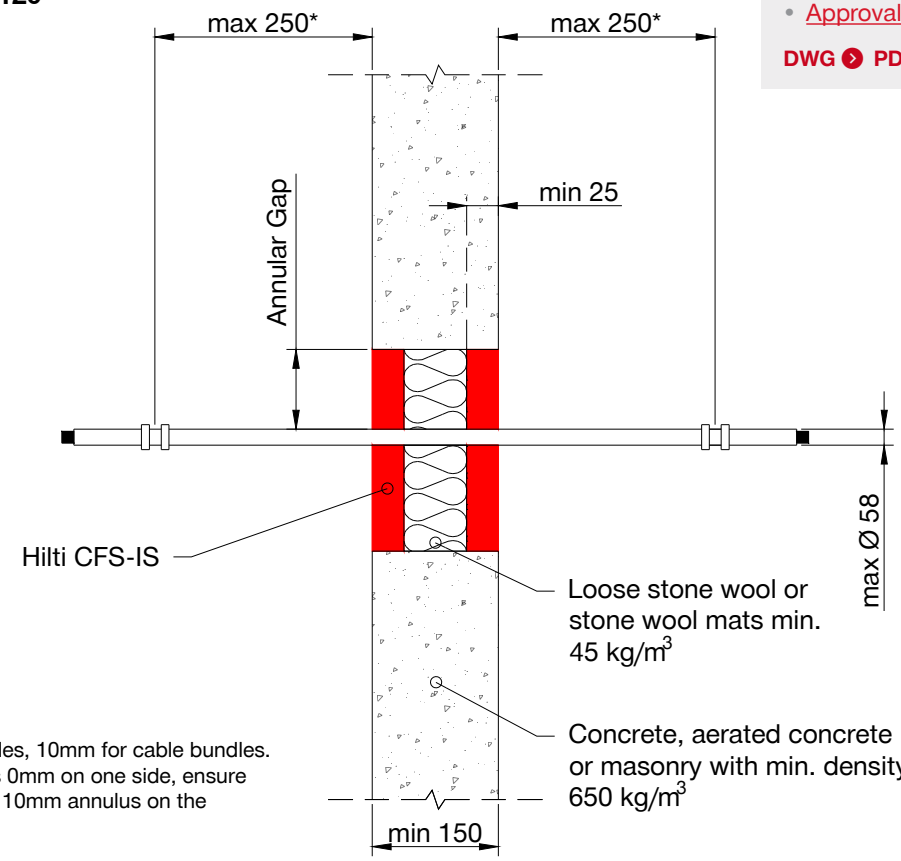
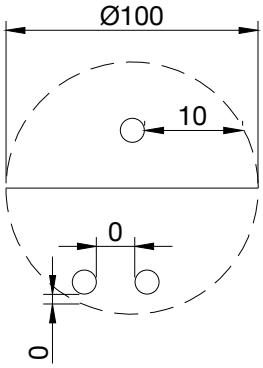
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



Annular gap note:

- 0mm for single cables, 10mm for cable bundles.
- If the annular gap is 0mm on one side, ensure there is a minimum 10mm annulus on the opposite side.



Max opening size Ø 100mm.

Min. 100mm distance to other firestopping penetrations and timber studs.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

Cable Type / Ø (mm)	Classification
All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre) with a max. Ø 13.8mm	EI 180
Diameter Max Ø58	EI 90 EI 180

* First support and ancillary products should be capable of achieving the same fire performance as the seal and supporting structure.

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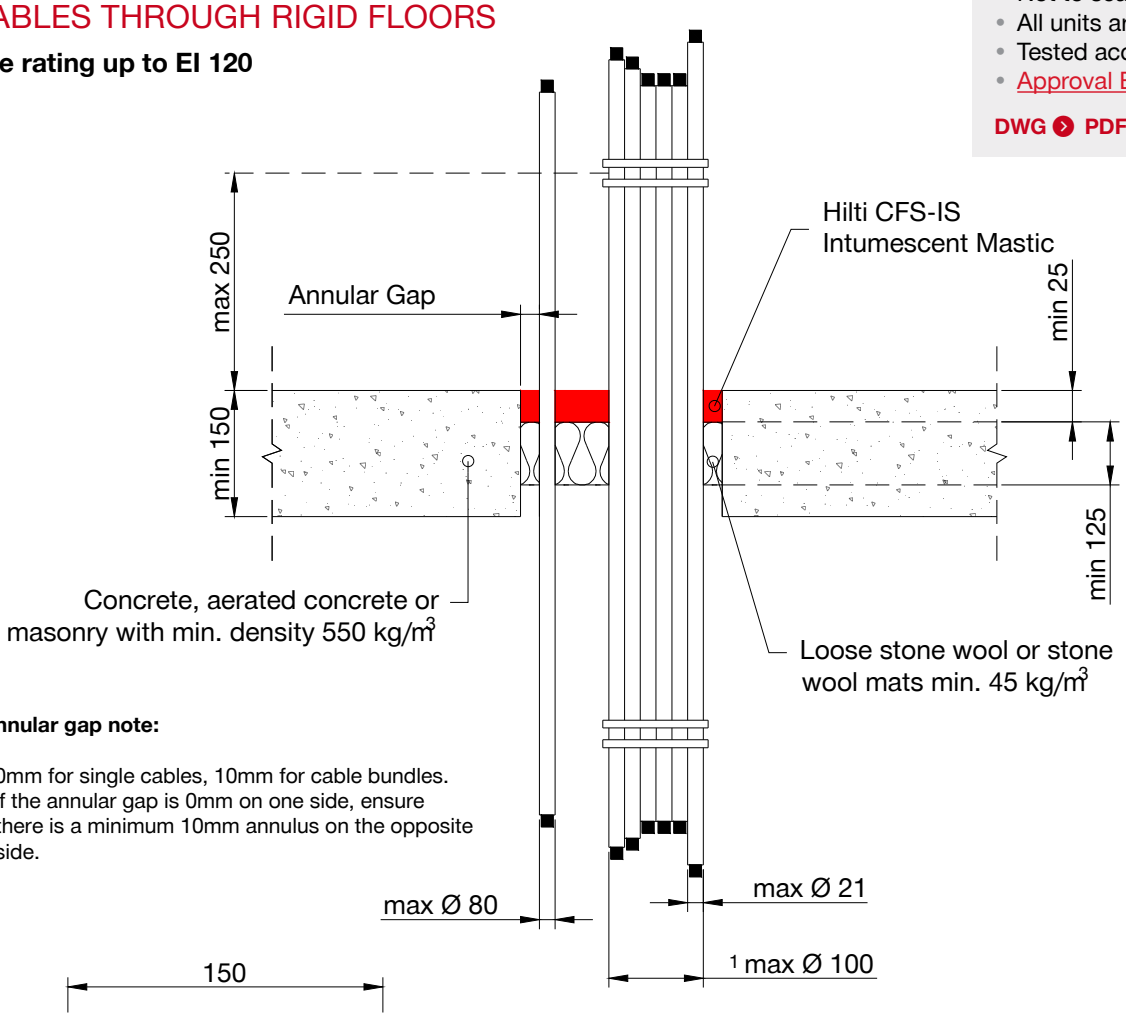
IS: SP-RF-E-01

CABLES THROUGH RIGID FLOORS

Fire rating up to EI 120

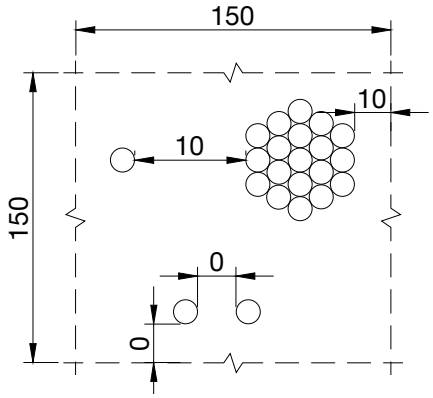
Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



Annular gap note:

- 0mm for single cables, 10mm for cable bundles.
- If the annular gap is 0mm on one side, ensure there is a minimum 10mm annulus on the opposite side.



Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

Cable Type / Ø	Classification
Max. Ø21	EI 120
21 ≤ Ø 80	EI 60 EI 120
[1] Tied cable bundle of max. Ø100, with max. single cable Ø21	EI 90 EI 120

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre)

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IS: SP-RF-E-01

CABLES THROUGH RIGID FLOORS

Fire rating up to EI 120

Information
- Not to scale
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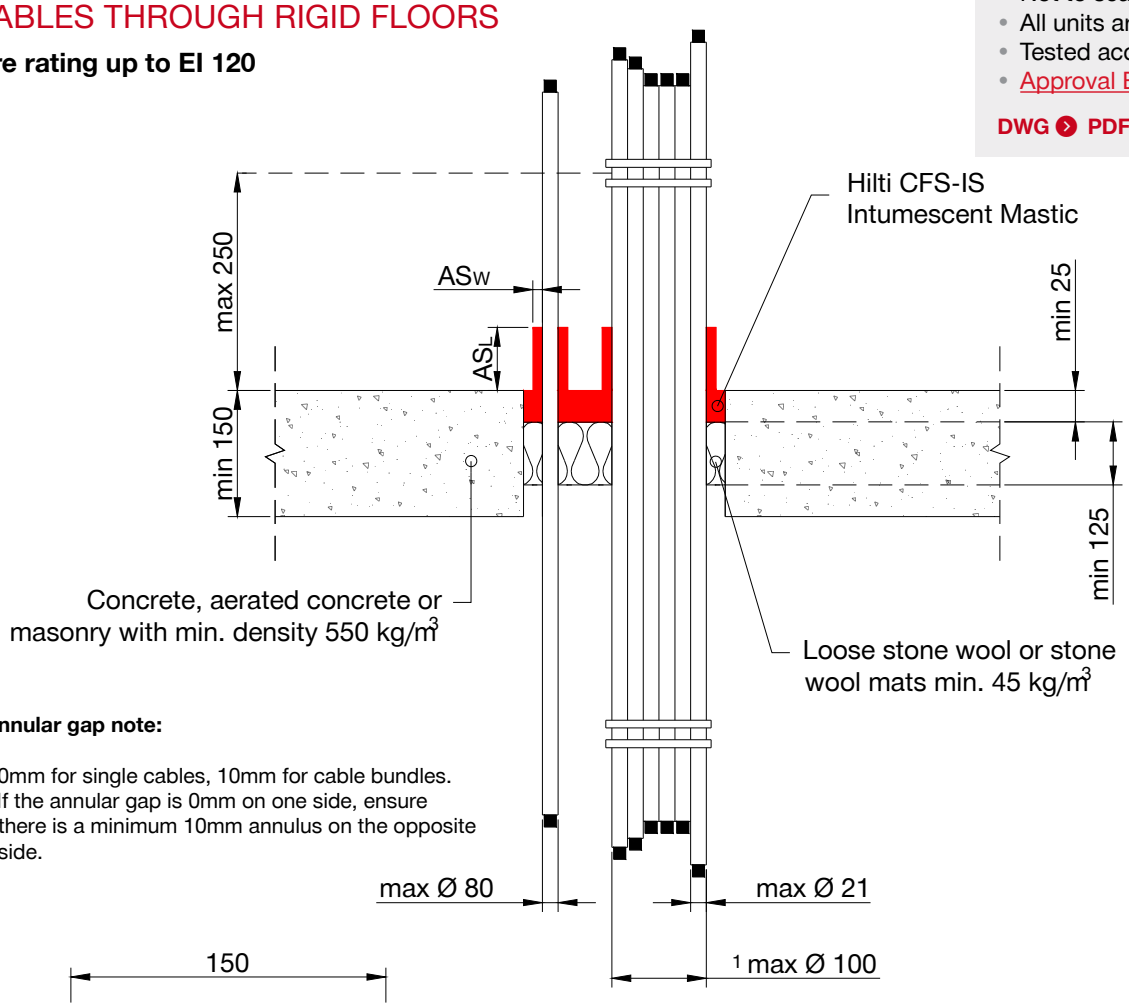
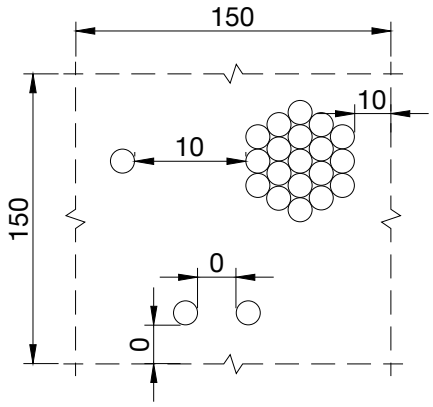
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



Annular gap note:

- 0mm for single cables, 10mm for cable bundles.
- If the annular gap is 0mm on one side, ensure there is a minimum 10mm annulus on the opposite side.



Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm). Min. 100mm distance to other firestopping penetrations and timber studs. Min. 200mm to other penetrations (e.g., doors, windows etc.)

Cable Type / Ø	ASW	ASL	Classification
Max. Ø21	10	50	EI 120
	10	100	EI 120
	0	0	EI 120
21 ≤ Ø 80	10	50	EI 90
	10	100	EI 120
	0	0	EI 90
[1] Tied cable bundle of max. Ø100, with max. single cable Ø21	10	50	EI 120
	10	100	EI 120
	0	0	EI 90

All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre)

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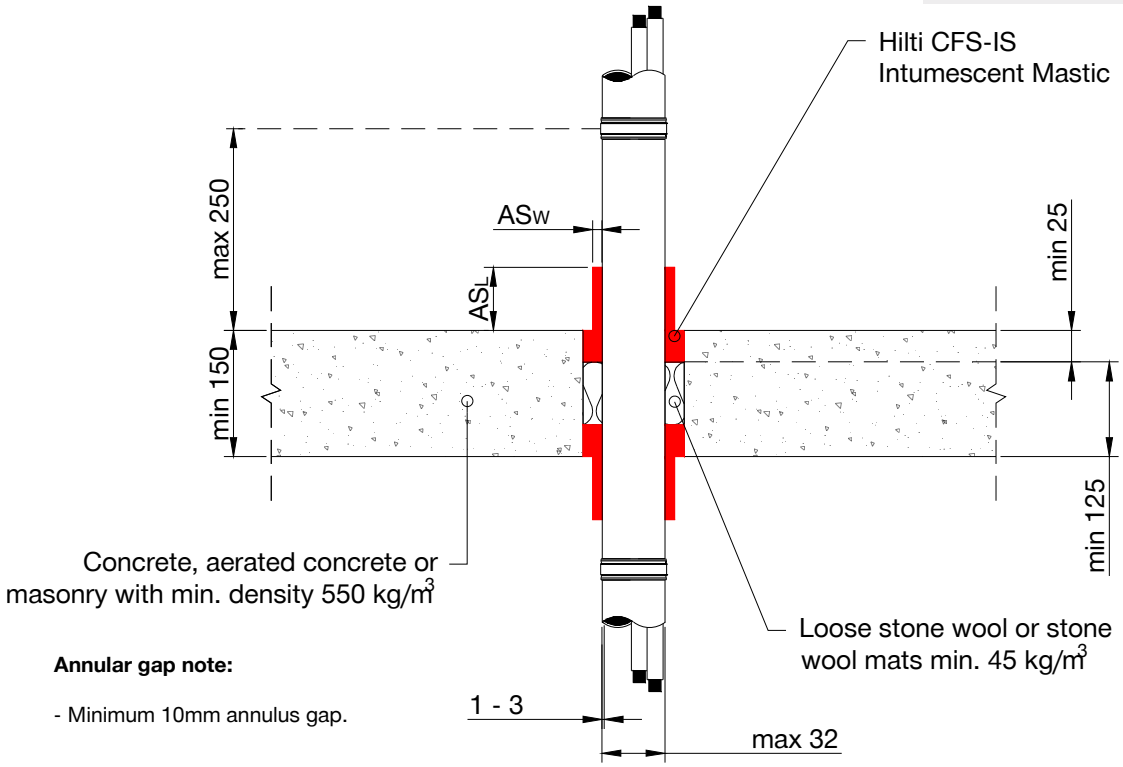
IS: SP-RF-E-03

PLASTIC CONDUITS THROUGH RIGID FLOORS

Fire rating up to EI 120

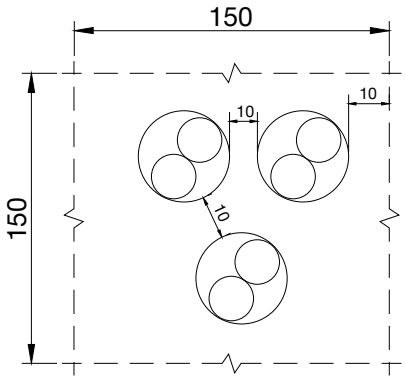
Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



Annular gap note:

- Minimum 10mm annulus gap.



Conduit Type / Ø	ASW	ASL	Classification
Plastic conduits 16 ≤ Ø ≤ 32, wall thickness 1-3, arranged linear, with or without cables*	10	50	EI 120 U/C
	10	100	EI 120 U/C

*All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations and timber studs.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

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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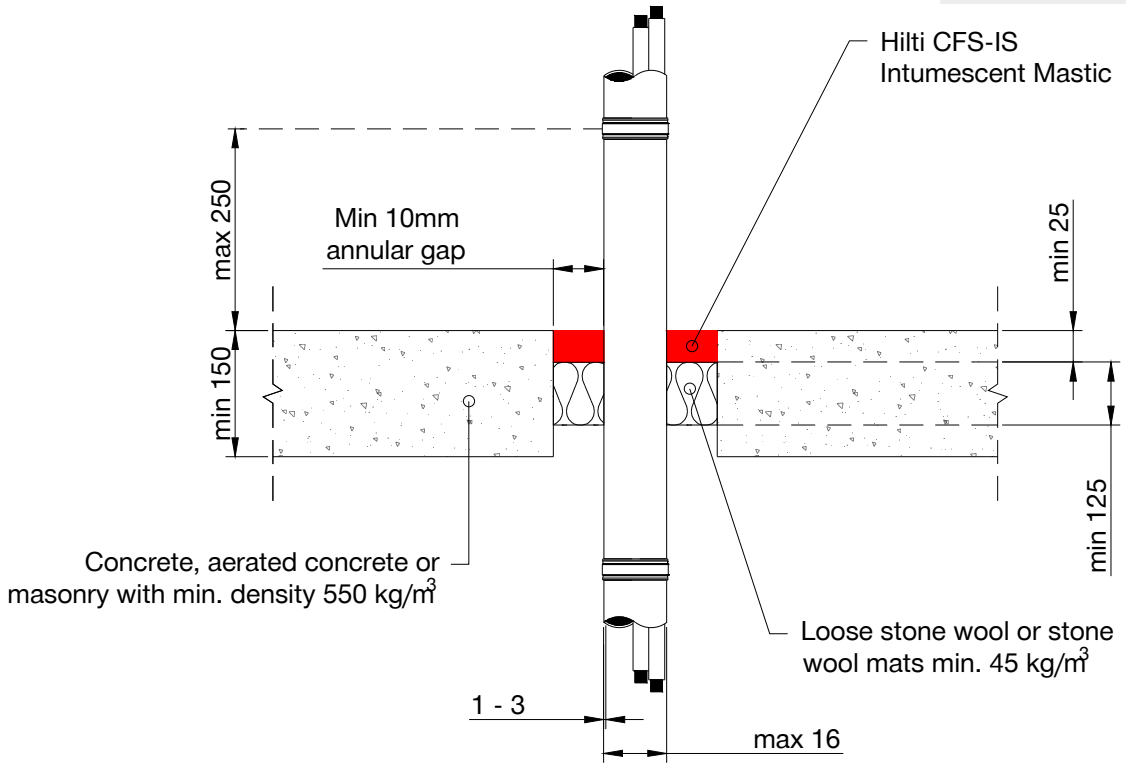
IS: SP-RF-E-02

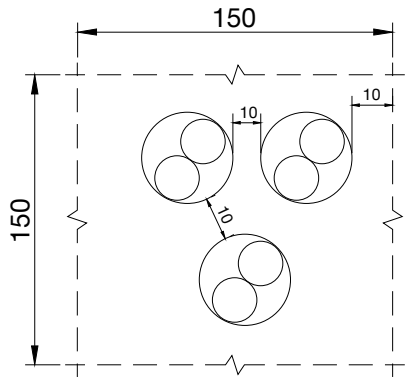
CONDUITS THROUGH RIGID FLOOR

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web





Conduit Type / Ø	Classification
Small steel conduits and tubes ≤ Ø 16, arranged linear, with or without cables*	EI 90 C/U
Small plastic conduits and tubes ≤ Ø 16, arranged linear, with or without cables*	EI 90 U/C

*All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre).

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

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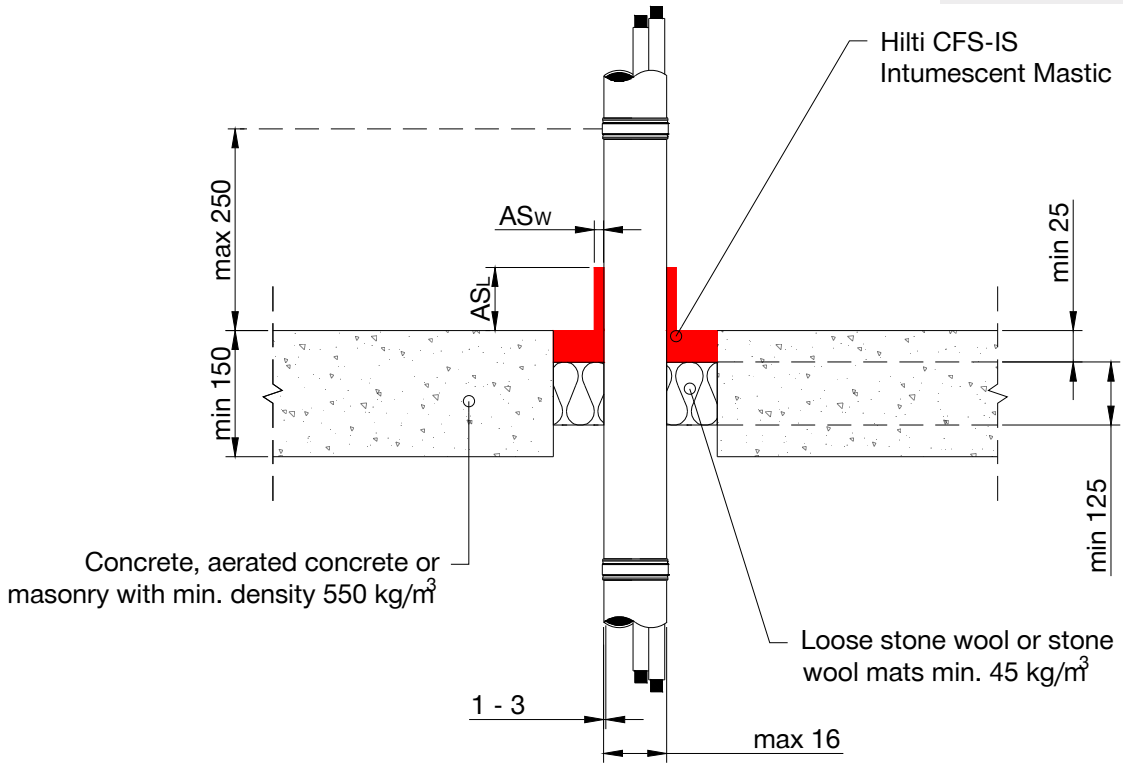
IS: SP-RF-E-02

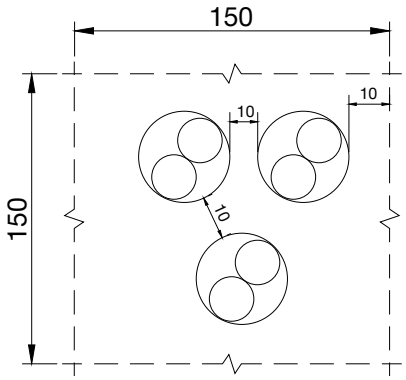
CONDUITS THROUGH RIGID FLOOR

Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web





Cable Type / Ø	ASW	ASL	Classification
Small steel conduits and tubes ≤ Ø 16, arranged linear, with or without cables*	10	50	EI 120 C/U
	10	100	EI 120 C/U
Small plastic conduits and tubes ≤ Ø 16, arranged linear, with or without cables*	10	50	EI 120 U/C
	10	100	EI 120 U/C

*All sheathed cable types currently and commonly used in building practice in Europe (e.g., power, control, signal, telecommunication, data, optical fibre)

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

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

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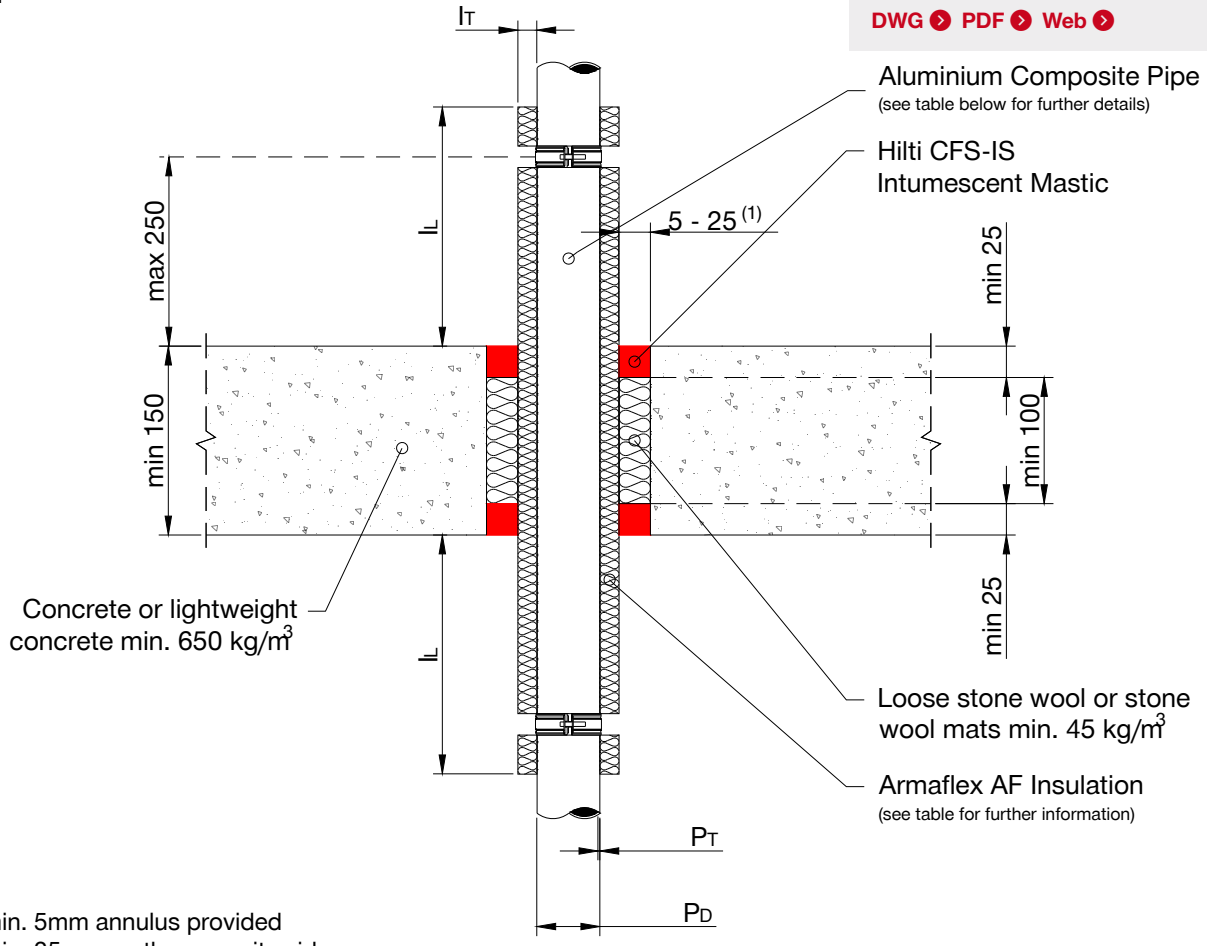
IS: SP-RF-M-01

ALUMINIUM COMPOSITE PIPES WITH LOCALLY SUSTAINED INSULATION

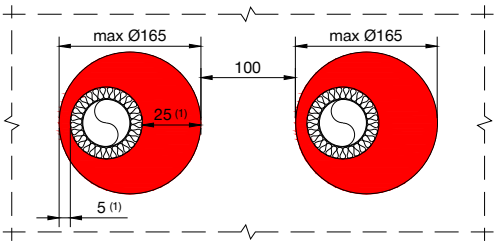
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations and timber studs.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

Pipe		Insulation		Classification
P_DØ	P_T	I_T	I_L	
Geberit Mepla (PE-XD/Al/PE-HD) with Armaflex AF Insulation				
≥ 16-50	2.25-4.0	8-21	≥ 250	EI 120 U/C
Kelkelit Kelox (PE-XB/AL/PE-XB) with Armaflex AF Insulation				
≥ 16-50	2.0-4.0	8-21	≥ 250	EI 120 U/C
LK Schweden (PE-RT/AL/PE-RT) with Armaflex AF Insulation				
16-40	2.0-3.5	8-21	≥ 250	EI 120 U/C
Uponor Uni Pipe Plus (PE-RT/AL/PE-RT) with Armaflex AF Insulation				
≥ 16-32	2.0-3.5	8-19.5	≥ 250	EI 120 U/C
The above LS Insulation parameters are also valid for CS				

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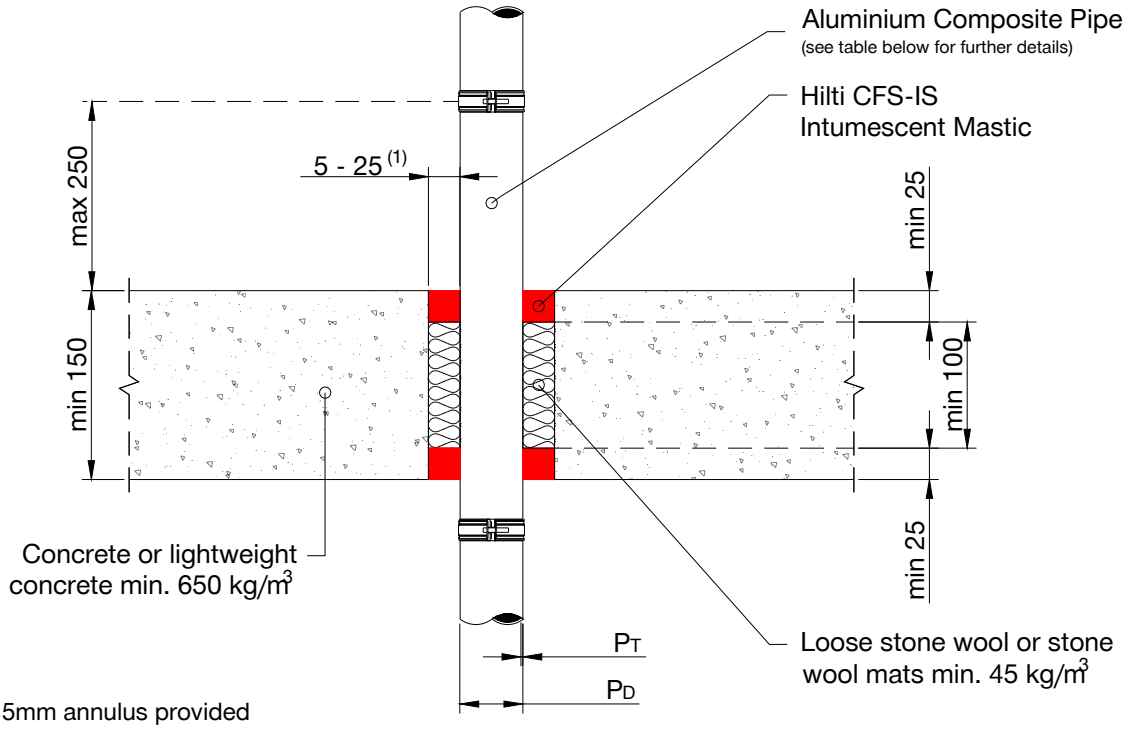
IS: SP-RF-M-02

ALUMINIUM COMPOSITE PIPES WITH NO INSULATION

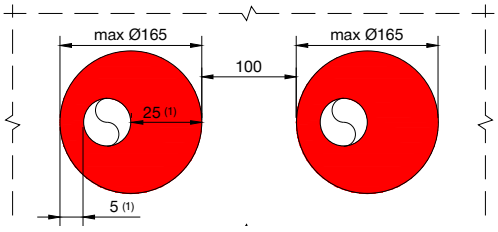
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations and timber studs.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

Pipe		Classification
P_DØ	P_T	
Geberit Mepla (PE-XD/Al/PE-HD)		
≥ 16-50	2.25-4.0	EI 120 U/C
Geberit Silent (PP-C/PP-MD/PP-C)		
≥ 32-50	2.0	EI 120 U/U
50	2.0	EI 120 U/C
Kelkelit Kelox (PE-XB/AL/PE-XB)		
≥ 16-50	2.0-4.0	EI 120 U/C
LK Schweden (PE-RT/AL/PE-RT)		
≥ 16-40	2.0-3.5	EI 120 U/C
Uponor Uni Pipe Plus (PE-RT/AL/PE-RT)		
≥ 16-32	2.0-3.5	EI 120 U/C
PP Life Master 3 (PP-CO/PP-MV/PP-CO-MV, EN1451-1)		
≥ 32-40	1.8	EI 90 U/U
50	1.8	EI 120 U/U

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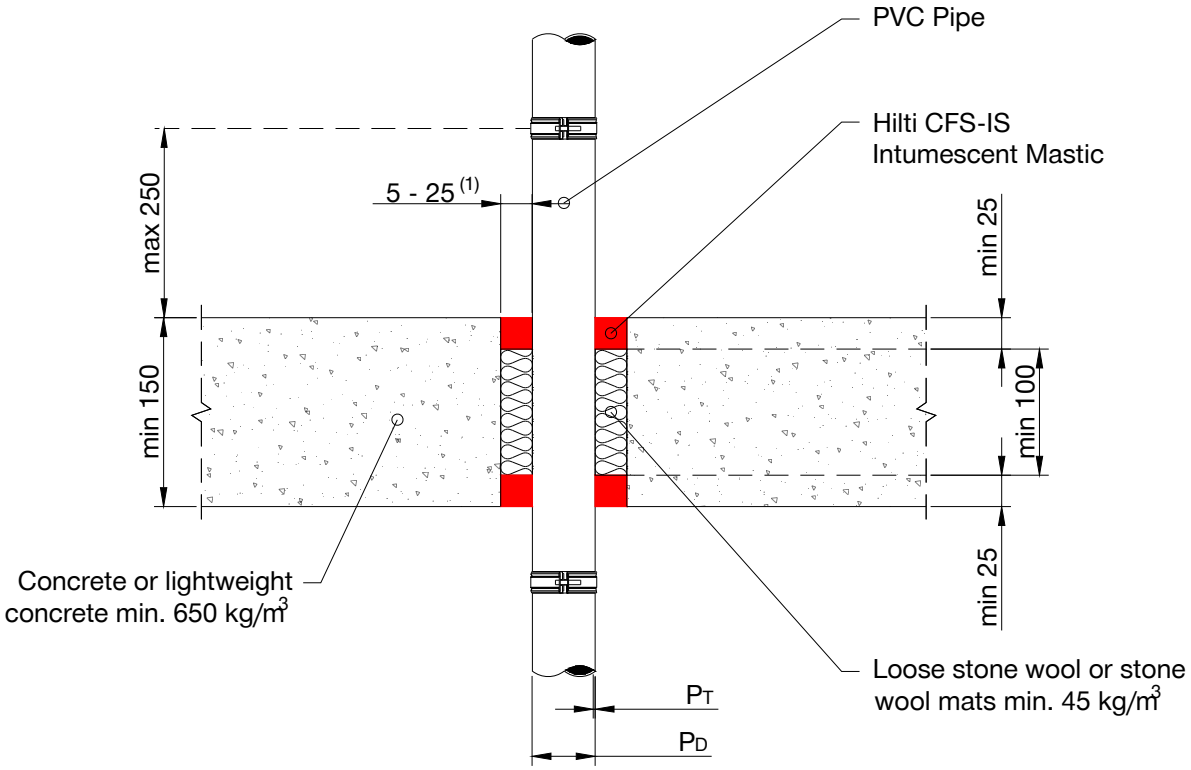
IS: SP-RF-M-03

PVC PIPES

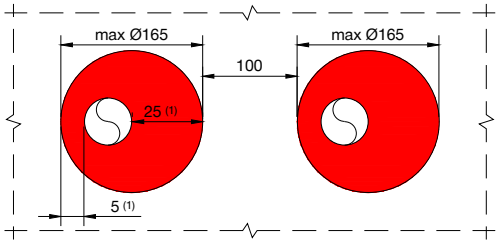
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



PVC pipes		
Conduit Type / Ø	**Wall Thickness**	**Classification**
≥ 16 – 20	1.8-2.3	EI 120 U/U
32	1.8-3.6	EI 60 U/U
≥ 34 – 40	2.0-3.0	EI 60 U/U
≥ 40 – 50	1.8-3.7	EI 120 U/C

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations and timber studs.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

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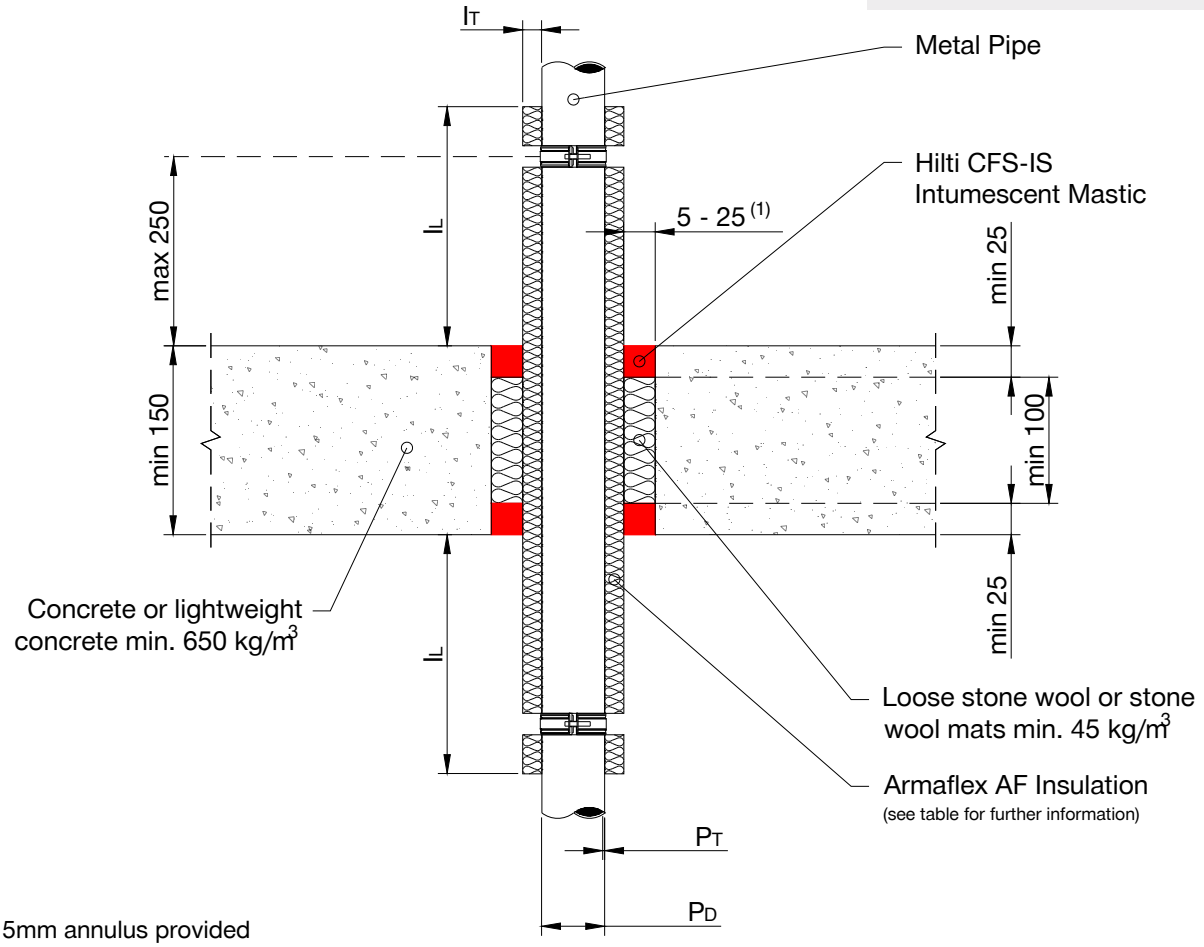
IS: SP-RF-M-04

METAL PIPES WITH LOCALLY SUSTAINED INSULATION

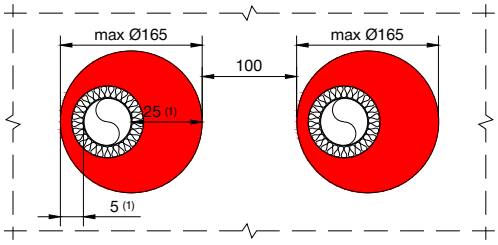
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Pipe		Insulation		Classification
PDØ	PT	IT	IL	
Copper/Steel Pipes (Locally Sustained) with Rockwool RS 800				
≥ 10-42	1.0 / 1.2-14.2	20	≥ 700	EI 120 C/U
≥ 42-89	1.0 / 1.2-14.2	40	≥ 925	EI 120 C/U

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations and timber studs.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

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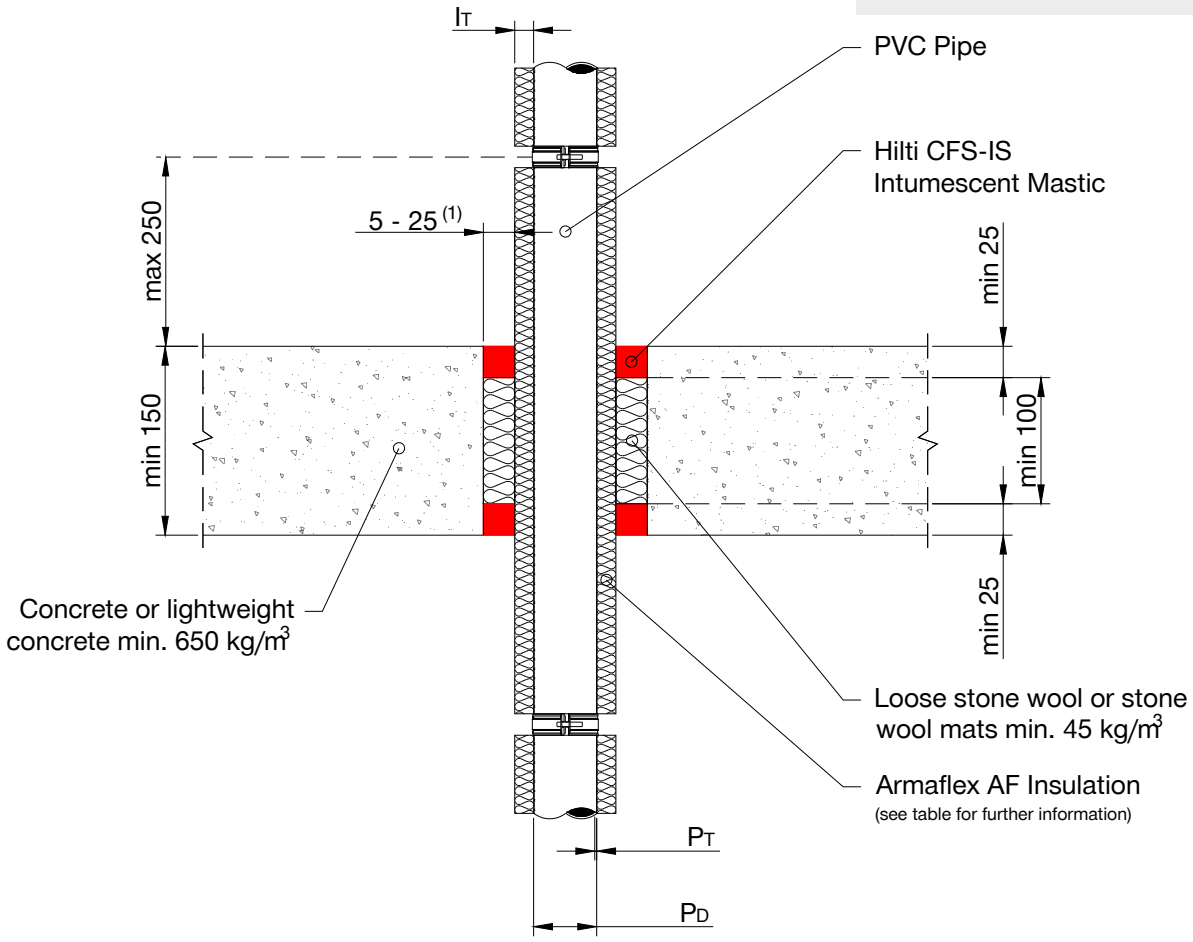
IS: SP-RF-M-04

METAL PIPES WITH CONTINUOUS SUSTAINED INSULATION

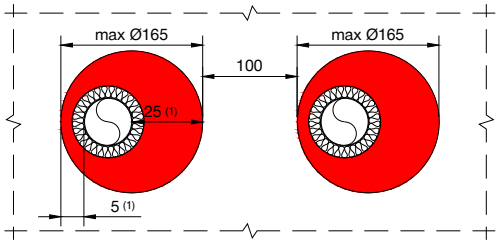
Fire rating up to EI 120

Information
- Not to scale
- All units are in millimetres
- Tested according EN 1366-3
- Approval ETA-10/0406

DWG PDF Web



(1) min. 5mm annulus provided
min. 25mm on the opposite side



Pipe		Insulation	Classification
PDØ	PT	IT	
Copper/Steel Pipes (Continuously Sustained) with Armaflex AF			
≥ 10-42	1.0 / 1.2-14.2	7.5-20.5	EI 120 C/U
≥ 42-89	1.0 / 1.2-14.2	14.5-22.5	EI 60 C/U

Max opening size 150mm x 150mm or circular openings of equivalent area (Ø 165mm).

Min. 100mm distance to other firestopping penetrations and timber studs.

Min. 200mm to other penetrations (e.g., doors, windows etc.)

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CHANGE LOG

Date	Description

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