

FIRESAFE / FSD

Firestop Disc for Penetration Seals

TECHNICAL DATA SHEET

Date: 30/07/2025

Rev.: 0

Prepared by: PP

Checked by: HKE

European approvals:

ETA No: 25/0237 Penetration Seals

DoP No.: FS/PP/FSD – 30.07.2025

CE 2821

PRODUCT DESCRIPTION

FIRESAFE / FSD is a self-adhesive disc made of heat-expanding material.

FIRESAFE / FSD can be shaped around small penetrations to provide a fire- and smoke-proof seal to adjacent spaces.

FIRESAFE / FSD is part of the Firesafe fire sealing system.



Fire resistance
≤ 120 minutes



Lifespan
25 years



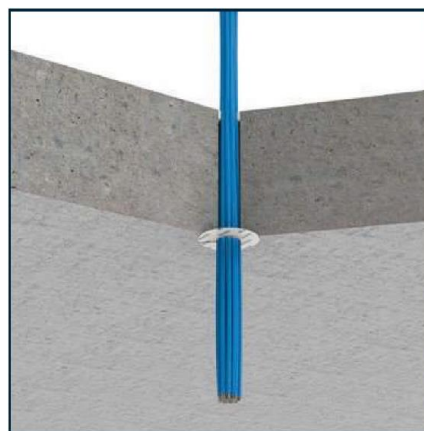
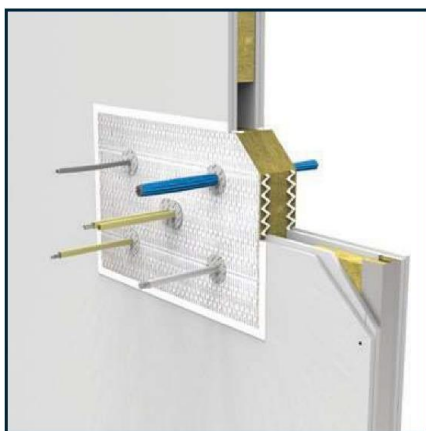
Speed
Quick installation



PROPERTIES	AREA OF USE
✓ Fire resistance ≤ 120	✓ Masonry and cast wall constructions, density ≥ 350 kg/m ³
✓ CE marked	✓ Masonry and cast floor constructions, density ≥ 400 kg/m ³
✓ Quick and easy installation	✓ Insulated and non-insulated plaster walls ≥ 100 mm
✓ Simple solution for installations up to Ø26 mm	✓ Walls of sandwich elements ≥ 100 mm
✓ Environmentally friendly and user-friendly	✓ In combination with FIRESAFE FSB1 and FSB2 Boards
✓ Permanently flexible	✓ In combination with A1 gypsum-based fire sealant
✓ Product lifespan at least 25 years	✓ Cable – cable bundle up to Ø26 mm. PVC – aluminium and composite pipes up to Ø26 mm

Packaging:

FIRESAFE / FSD	Dimensions	Box inner	Box outer	Pallet	Item no.
	Ø65 mm, thickness 3 mm	32 pcs.	384 pcs.	12.288 pcs.	100.205



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FIRESAFE /
FIRE PROTECTION

FIRESAFE /

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1. Technical data

FIRESAFE / FSD	EAN code 7070800102436
Condition	Ready-to-use, self-adhesive fireproof disc
Colour	Colour red/brown with grey topcoat
Storage temperature during transport	+5 °C to +30 °C
Temperature during application	+5 °C to +60 °C
Shelf life	At least 25 years in unopened packaging and at temperatures from +5 °C to +30 °C
Permanent temperature resistance	- 20 °C to +60°C
Usage category ¹⁾	Type Z1 in accordance with EAD 350454-00-1104
Paintable ²⁾	Yes
Expansion factor ³⁾	6.0 x up to 9.0 x
Reaction to fire	Class E in accordance with EN 13501-1
European approvals	ETA 25/0237. Penetration Seals
Test standards	Tested in accordance with EN 1366-3. Penetration Seals
Product lifespan	Minimum 25 years

¹⁾ Permitted environmental conditions

Duct sealant for use in conditions with < 85% RH, with protection against temperatures below 0 °C, and with no exposure to rain and/or UV (TR 024, type Z1). Tolerates limited contact with water spray. Continuous moisture, standing water and water pressure must be avoided.

²⁾ Possible impact when surface treatment and chemicals are required

The following types of paint and limited contact with chemicals will not cause changes in fire protection properties

Surface treatment:	Dispersion paint, alkyd paint, polyurethane acrylic paint, epoxy resin paint (prior treatment with primer is not required, but recommended)
Solvent/oil:	Butyl acetate, butanol
Gaseous chemicals:	Short-term storage with concentrated ammonium hydroxide solution.

Note:

Environmental conditions with high humidity and/or some types of surface treatments and chemicals may affect colour or reduce colour changes.

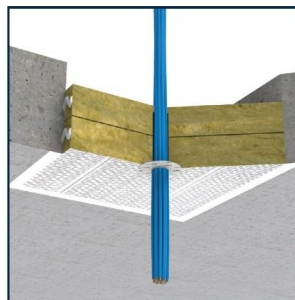
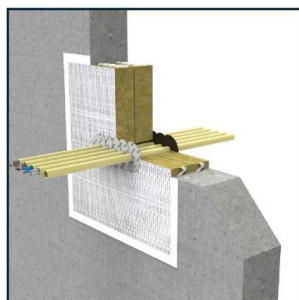
³⁾ Expansion factor

Expansion tested at temperature +450 °C for 25 minutes. The expansion factor is a laboratory value.

The expansion factor after installation depends on the actual conditions.

Contact with types of metal and plastic

The surface consistency of aluminium, stainless steel, galvanised steel, as well as polyethylene and polyvinyl chloride plastics, is not negatively affected when in contact with FIRESAFE / FSD.



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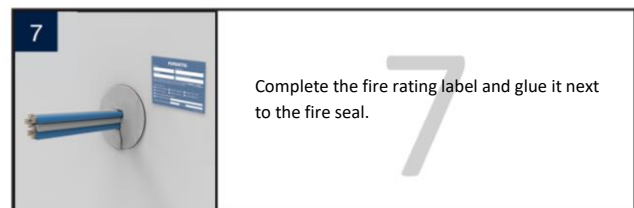
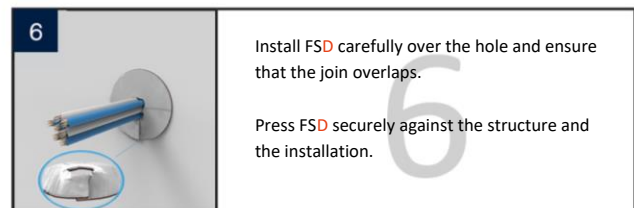
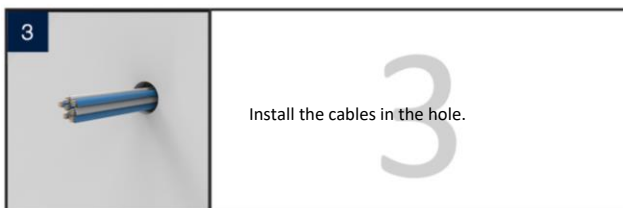
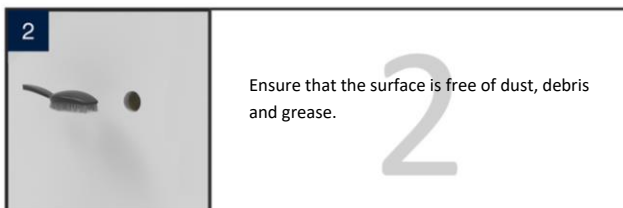
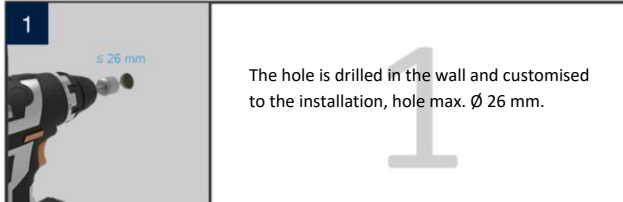
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2. Installation instructions



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3. Performance overview

FIRESAFE / FSD installed in small openings, directly in walls and floors according to 1366-3

Cables	Penetration Ø [mm]	Hole size Ø [mm]	Distance between holes	Construction			Rating in minutes
				FW-100	RW-100	RF-150	
Cable bundle, with copper content ≤ 60 mm ²	≤ 26	≤ 26	Fig. 1 and 2	✓	✓	✓	EI 120
Electrical cable, with copper content ≤ 12.5 mm ²	≤ 14	≤ 26	Fig. 1 and 2	✓	✓	✓	EI 120

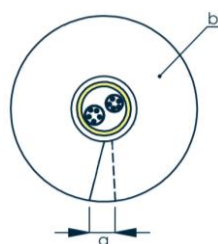
Multilayer pipes	Penetration Ø [mm]	Hole size Ø [mm]	Distance between holes	Construction			Rating in minutes
				FW-100	RW-100	RF-150	
Aluminium composite pipe ¹⁾	≤ 16 x 2.0	≤ 26	Fig. 1 and 2	✓	✓	✓	EI 90. U/C

Electrical conduits made from plastic	Penetration Ø [mm]	Hole size Ø [mm]	Distance between holes	Construction			Rating in minutes
				FW-100	RW-100	RF-150	
PVC pipe with cable(s)	≤ 25	≤ 26	Fig. 1 and 2	✓	✓	✓	EI 120. U/U
PVC pipes without cable(s)	≤ 25	≤ 26	Fig. 1 and 2	✓	✓	✓	EI 120. U/U
PVC pipe with cable(s)	≤ 16 (5x)	≤ 26 (5x)	Fig. 1 and 2	✓	✓	✓	EI 90. U/U
PVC pipe without cable(s)	≤ 16 (5x)	≤ 26 (5x)	Fig. 1 and 2	✓	✓	✓	EI 90. U/U

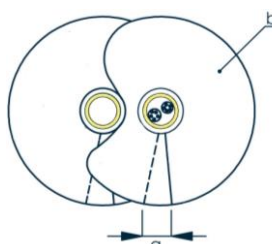
E:	Integrity	FW-100:	Gypsum walls, thickness of ≥ 100 mm
I:	Thermal insulation	RW-100:	Masonry cast walls, thickness ≥ 100 mm
		RF-150:	Masonry cast floors, thickness ≥ 150 mm
Ø x [mm]:	Installation (x) = number when multiple		

¹⁾ Pipe types

- ✓ Alpex DUO, Valsir Pexal, Valsir Mixal and APE Plain (PE-Xb/AL/PE-Xb)
- ✓ Geberit Mepla and Uponor Unipipe (PE-RT/AL/PE-RT)
- ✓ Henco and Uponor (PE-Xc/AL/PE-Xc)
- ✓ Uponor, REHAU (PE-Xa) and REHAU (PE-Xc)
- ✓ SP Superpipe and POLYGON PEX (PE-X/AL/PE-X)
- ✓ Valsir Pexal and Valsir Mixal (PE/AL/PE-Xb)
- ✓ Wavin Tigris, Protecta-Line System and Alpex F50 Profi (PE-X/AL/PE)



a: Overlap joint, minimum 10 mm
b: FIRESAFE / FSD



a: Overlap when multiple FSD, minimum 10 mm
b: FIRESAFE / FSD

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Performance overview

FIRESAFE / FSD installed to FIRESAFE / FSB Firestop Board system. 2 x 50 mm FSB1. In accordance with EN 1366-3

Cables	Penetration Ø [mm]	Hole size Ø [mm]	Distance between holes	Construction			Rating in minutes
				FW-100	RW-100	RF-150	
Cable bundle, with copper content $\leq 60 \text{ mm}^2$	≤ 26	≤ 26	Fig. 3 and 4	✓	✓	✓	EI 60
Electrical cable, with copper content $\leq 12.5 \text{ mm}^2$	≤ 14	≤ 26	Fig. 3 and 4	✓	✓	✓	EI 90

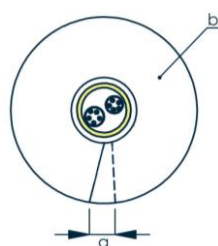
Multilayer pipes	Penetration Ø [mm]	Hole size Ø [mm]	Distance between holes	Construction			Rating in minutes
				FW-100	RW-100	RF-150	
Aluminium composite pipe ¹⁾	$\leq 16 \times 2.0$	≤ 26	Fig. 3 and 4	✓	✓	✓	EI 90. U/C

Electrical conduits made from plastic	Penetration Ø [mm]	Hole size Ø [mm]	Distance between holes	Construction			Rating in minutes
				FW-100	RW-100	RF-150	
PVC pipe with cable(s)	≤ 25	≤ 26	Fig. 3 and 4	✓	✓	✓	EI 90. U/U
PVC pipes without cable(s)	≤ 25	≤ 26	Fig. 3 and 4	✓	✓	✓	EI 90. U/U
PVC pipe with cable(s)	$\leq 16 (5x)$	$\leq 26 (5x)$	Fig. 3 and 4	✓	✓	✓	EI 90. U/U
PVC pipe without cable(s)	$\leq 16 (5x)$	$\leq 26 (5x)$	Fig. 3 and 4	✓	✓	✓	EI 90. U/U

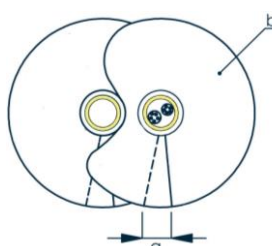
E:	Integrity	FW-100:	Gypsum walls, thickness of $\geq 100 \text{ mm}$
I:	Thermal insulation	RW-100:	Masonry cast walls, thickness $\geq 100 \text{ mm}$
		RF-150:	Masonry cast floors, thickness $\geq 150 \text{ mm}$
Ø x [mm]:	Installation (x) = number when multiple		

¹⁾ Pipe type

- ✓ Alpex DUO, Valsir Pexal, Valsir Mixal and APE Plain (PE-Xb/AL/PE-Xb)
- ✓ Geberit Mepla and Uponor Unipipe (PE-RT/AL/PE-RT)
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- ✓ Wavin Tigris, Protecta-Line System and Alpex F50 Profi (PE-X/AL/PE)



a: Overlap joint, minimum 10 mm
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a: Overlap when multiple FSD, minimum 10 mm
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4. Distances between holes

Figure 1

a1: Distance between joint and penetration ≥ 0 mm
a2: Interval ≥ 20 mm

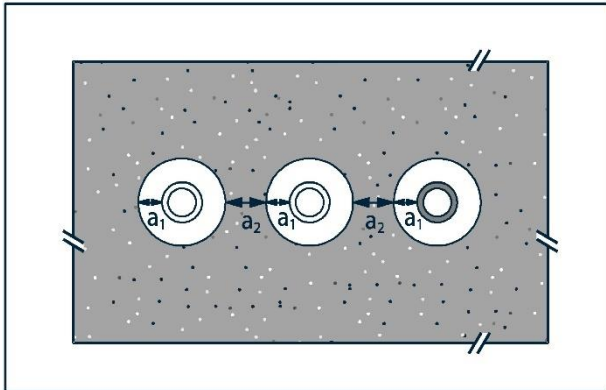


Figure 2

a1: Distance between joint and penetration ≥ 0 mm
a2: Interval ≥ 20 mm

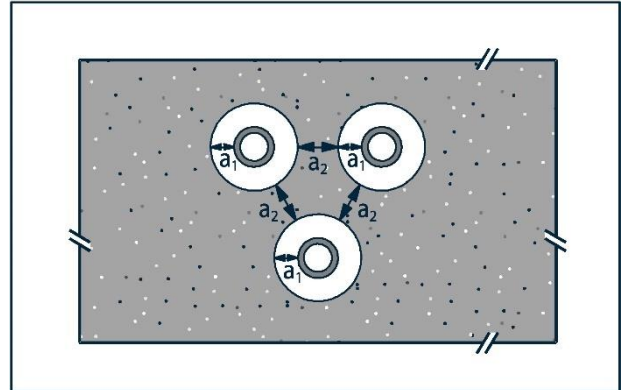


Figure 3

a1: Distance between penetration and top of joint ≥ 10 mm
a2: Distance between penetration and side of joint ≥ 10 mm
a3: Interval ≥ 20 mm

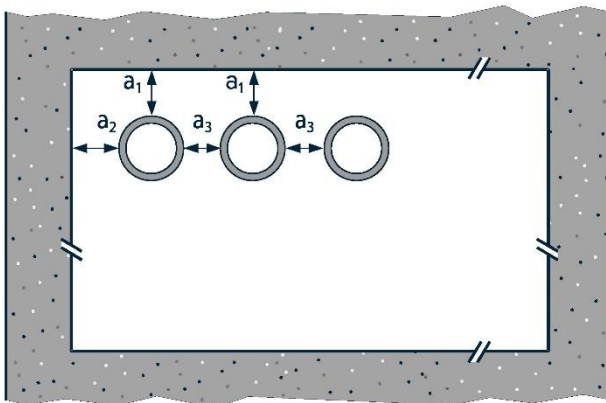
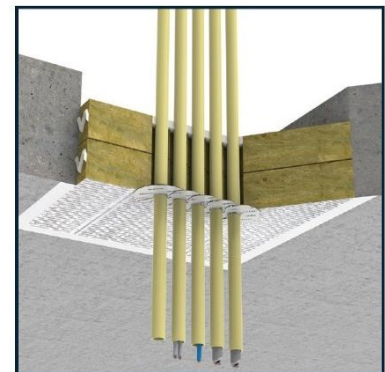
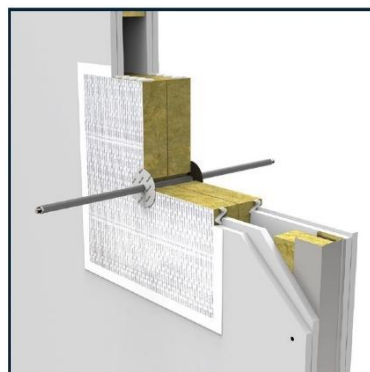
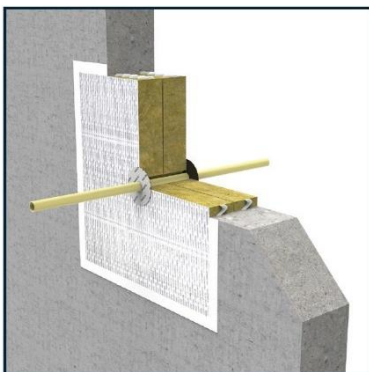
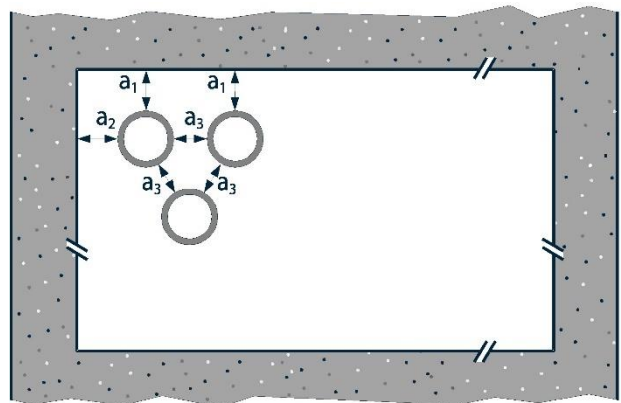


Figure 4

a1: Distance between penetration and top of joint ≥ 10 mm
a2: Distance between penetration and side of joint ≥ 10 mm
a3: Interval ≥ 20 mm



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5. Explanation of abbreviations for pipe ends in tests (cf. En 1366-3:2021)

Instructions:

The test configuration will determine the use of pipes. Before a type of pipe undergoes testing, the intended use of the pipes must be taken into account. Where will the plastic pipes be used in practice?

Test standard EN 1366-3 provides requirements for this. This will decide whether or not the pipe must be capped.

See the test configuration in **Table 1** for flammable plastic pipes and **Table 2** for metal pipes.

During fire testing, the ends of the pipe and fire sealing systems must be tested to determine whether the pipes must be capped at one or both ends, or kept fully uncapped in the building. Pressure, smoke, and hot gases must not be able to pass through the pipes or fire sealing systems in the event of a fire.

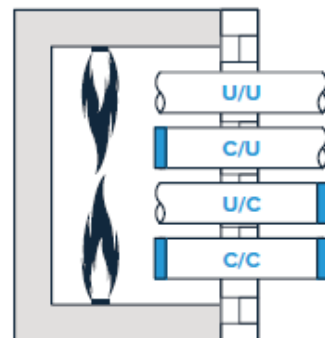


Table 1 - Test configuration for plastic pipes

Test setup	Pipe end		Permitted use			
	In oven	Outside of oven	U/U	C/U	U/C	C/C
U/U	Uncapped	Uncapped	✓	✓	✓	✓
C/U	Capped	Uncapped	X	✓	✓	✓
U/C	Uncapped	Capped	X	X	✓	✓
C/C	Capped	Capped	X	X	X	✓

* U/U tested, floor also tested with all pipe ends

Table 2 - Test configuration for metal pipes

Test setup	Pipe end		Permitted use		
	In oven	Outside of oven	U/C	C/U	C/C
U/C *	Uncapped	Capped	✓	✓	✓
C/U	Capped	Uncapped	X	✓	✓
C/C	Capped	Capped	X	X	✓

* U/C tested, floor also tested with U/U

Plastic pipes

Table H.1 on the next page displays some examples of pipes and intended uses where the end of the pipe is capped or not. The table cannot take all possible usage options into account. When deciding whether to cap the end of the pipe or to let it remain uncapped, several factors must be considered: is the system under pressure, and is the system ventilated?

Consider the service type of the pipe to determine whether it should be capped. If national regulations provide other requirements than those given in table H1, then these regulations shall apply.

Table H.1. Plastic pipes

Pipe type, type of application	Pipe end		Test setup
	In oven	Outside of oven	
Rainwater drainage	Uncapped	Uncapped	U/U
Sewage, ventilated	Uncapped	Uncapped	U/U
Sewage, non-ventilated	Uncapped	Capped	U/C
Gas pipes, drinking water pipes, hot water pipes	Uncapped	Capped	U/C
Capped pipe systems with permanent water pressure, water supply	Capped	Capped	C/C

Pipe ends C/U or U/C apply to wastewater pipes with a water trap in accordance with table H.1 in EN 1366-3.

Pipe ends C/C apply to pipes with permanent water pressure, e.g., pipes for water supply following table H.1 in EN 1366-3.

Non-flammable metal pipes

Metal pipes are usually capped in the testing oven. As the metal will not melt away, it is assumed that there will not be an open end on the pipes in the event of a fire. It is therefore assumed that the suspension system will remain in place. If the pipes are supported by a suspension system that does not have a fire resistance, or if there are waste chutes, the metal pipes will not be capped in the testing oven, as shown in table H.2.

See next page.

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6. Explanation of abbreviations for pipe ends in tests (cf. En 1366-3:2021)

Table H.2. Metal pipes or non-flammable pipes

Pipe type, type of application	Pipe end		Test setup
	In oven	Outside of oven	
Service support – fire-rated suspension system ^a	Capped	Uncapped	C/U
Service support – suspension system without fire resistance	Uncapped	Capped	U/C
Chute for waste disposal	Uncapped	Capped	U/C

^a must be documented via fire testing or calculations (e.g. Euro codes)

Requirements for the properties of structural components:

Flexible plaster walls

The minimum thickness for walls must be 100 mm, and the wall must consist of steel or wood studs* with at least 2 layers of plaster cladding on each side, thickness 12.5 mm.

Masonry – cast walls

The minimum thickness for walls is 75 mm and the wall must consist of concrete, aerated concrete, or masonry with a density of at least 350 kg/m³ or timber (CLT) with a density of at least 400 kg/m³.

Masonry – cast floors or CLT

The minimum thickness for floors is 150 mm and the wall must consist of concrete, aerated concrete or masonry with a density of at least 400 kg/m³ or cross-laminated timber (CLT) with a minimum thickness of 140 mm and a density of at least 400 kg/m³.

*There must be a distance of at least 100 mm from each part of the penetration joint to the three studs, and the aperture between the penetration joint and the studs must be covered. The gap between the penetration joint and the timber studs must be fitted with at least 100 mm of insulation with fire classification A1 or A2 (in accordance with EN 13501-1).

The construction must be classified in accordance with EN 13501-2 for the specified fire resistance.

7. Service support, suspension systems and distances

Wall Figure a: The distance to the nearest or first service support for all types of technical installations may be ≤ 450 mm from the fire partition.

Floor Figure b: The distance to the nearest or first service support for all types of technical installations may be ≤ 450 mm from the fire partition.

Figure a.

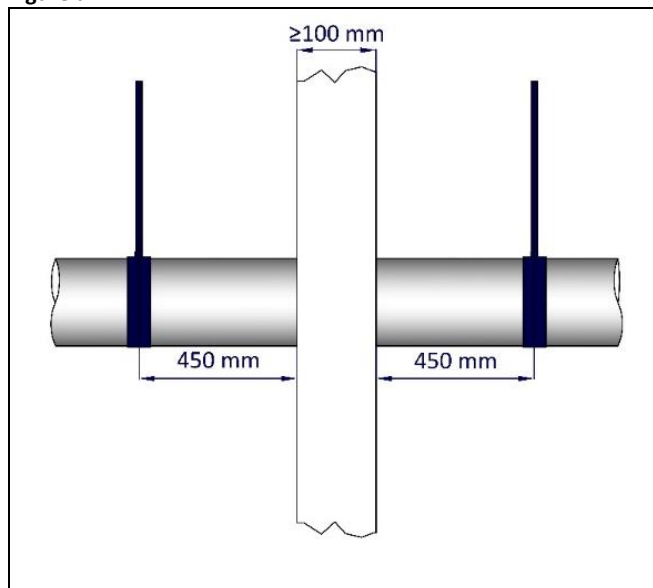
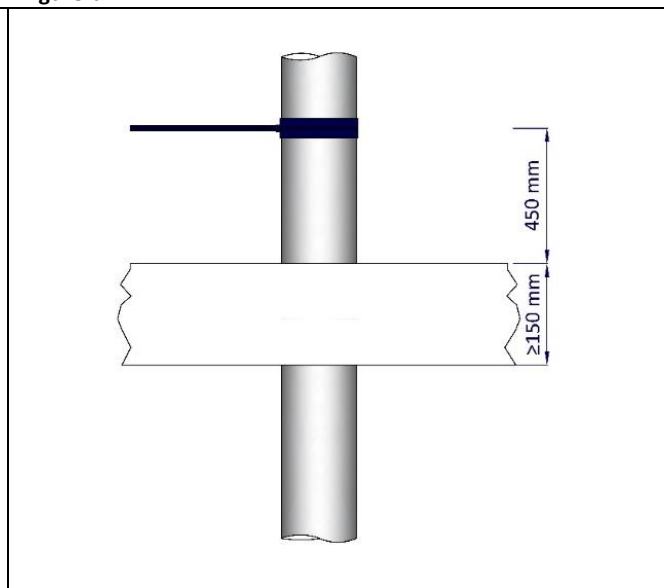


Figure b.



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8. Available documents and approvals for FIRESAFE / FSD

Technical documents
✓ Product data sheet (PDS)
✓ Technical data sheet (TDS)
✓ Safety datasheet (SDS)
✓ Installation manual

Approvals
✓ Tested in accordance with EN 1366-3
✓ Classification in accordance with EN 13501-2
✓ Certified in accordance with EAD 350454-00-1104
✓ ETA: 25/0237. Penetration Seals
✓ Declaration of Performance (DoP)

The documents listed above can be obtained from your Firesafe contact person, via QR code (Digital Pass), or on the Firesafe website: www.firesafe.no.