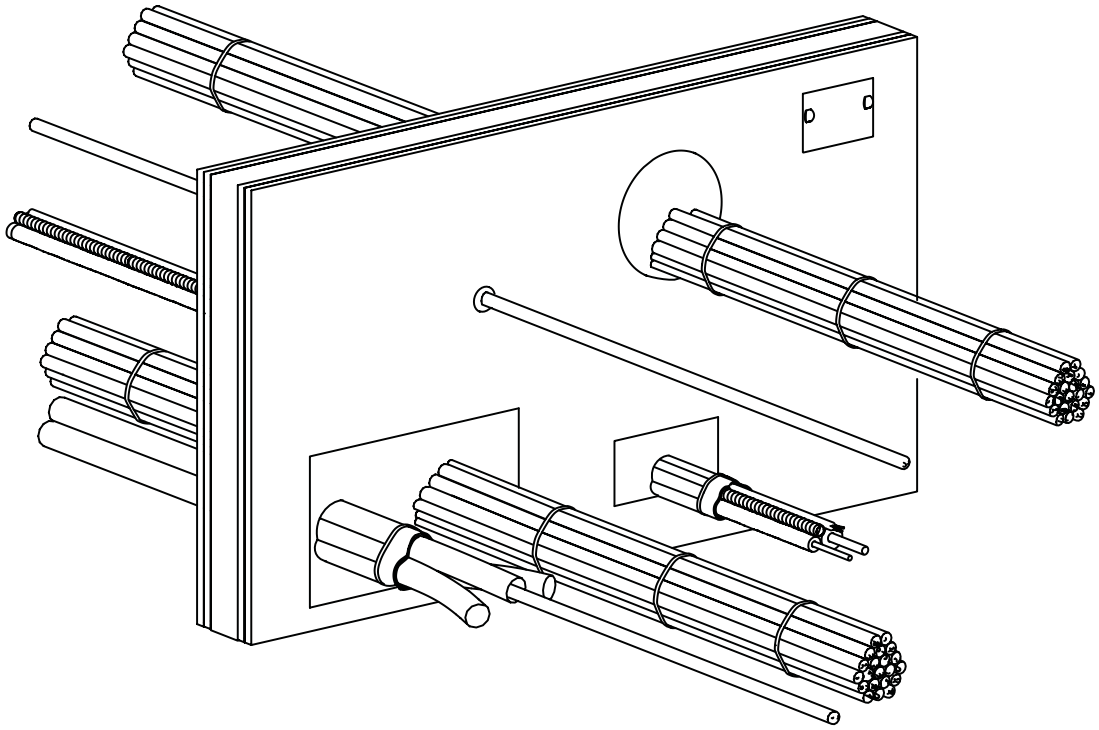


Mounting instructions

PYROPLATE® Fibre CM small insulation

OBO BETTERMANN

OBO Bettermann Holding GmbH & Co. KG

Small insulation PYROPLATE® Fibre CM
Mounting instructions

Table of contents

1 About these instructions

1.1 Target group

These instructions are aimed at specialists trained in fire protection.

1.2 Relevance of these instructions

These instructions are based on the standards valid at the time of compilation (September 2021).

Please read the instructions carefully before starting mounting. We will not accept any warranty claims for damage caused through non-observance of these instructions.

Any images are intended merely as examples. Mounting results may look different.

In these instructions, cables and lines are referred to simply as cables.

To find out more about planning and mounting the product, we recommend a comprehensive training course.

1.3 Types of warning information

DANGER

Type of risk!
Shows a risky situation. If the safety instruction is not observed, fatal injuries will occur.

WARNING

Type of risk!
Shows a risky situation. If the safety instruction is not observed, then serious or fatal injuries may occur.

CAUTION

Type of risk!
Shows a risky situation. If the safety instruction is not observed, then medium or minor injuries may occur.

ATTENTION

Type of risk!
Shows a hazardous situation. If the safety instruction is not observed, then damage to the product or the surroundings may occur.

Note! *Indicates important information or assistance.*

1.4 Basic standards and regulations

– EN 1366 Part 3

– EN 13501 Parts 1 and 2

– EN 1363

– EU BauPVO (CPR)

1.5 Applicable documents

– Declaration of performance 05-DOP-002

– European Technical Evaluation ETA-17/0364 for PYROCOAT® ASX ablation coating

– Safety data sheet PYROCOAT® ASX ablation coating

– General construction approval Z-19.15-2047

2 Intended use

PYROPLATE® Fibre CM is an insulation system for building interiors. It closes openings in fire-resistant walls or ceilings, through which cable, electrical installation pipes or pipes are run. The PYROPLATE® Fibre CM insulation system prevents the spread of fire and smoke in the area of the penetration. It can have a fire resistance period of 30 to 120 minutes, depending on the component opening, the installations and the installation method.

The insulation system is not designed for any other purpose than the one described here. If the system is installed and used for another purpose, any liability, warranty or damage claims shall be rendered null and void.

3 Safety

3.1 General safety information

Observe the following general safety information:

– The PYROPLATE® Fibre CM soft insulation is not suitable for improving the stability of a wall or ceiling. Ensure that the wall or ceiling is sufficiently stable, despite the opening, without the application of fire insulation.

– The installation of the fire insulation may not compromise the stability of the adjacent elements – even in the event of a fire. Consult the proof of application of the component.

– Comply with all the technical specifications of the approvals, such as the permitted insulation size, wall/ceiling types, fire resistance classes, installations and their first support, working areas, etc. Insulation areas in ceilings must be secured against being walked on.

3.2 Personal protective equipment

List of personal protective equipment to be used:

Breathing protection
Use particle filter P2 for short-term or low load.
In cases of intensive or longer exposure, use a breathing protection device that works independently of the ambient air. Only use breathing protection according to international/national standards.

Hand protection
Wear chemical-resistant protective gloves.
Recommended materials: Butyl rubber, nitrile rubber, fluorine rubber, PVC.

Eye protection
Wear protective glasses, frame goggles.

Physical protection
Wear protective clothing and non-slip shoes.

4 Necessary tools

List of required tools:

– Trowel, brush, masking tape

– Folding ladder, possibly film

– Wire cutters, galvanised steel wire

5 System description

5.1 Basic principles

Fire insulation maintains the fire sections, thus limiting the spread of fire and smoke, and simplifying rescue and extinguishing work.

The PYROPLATE® Fibre CM small insulation system is designed for fire insulation in wall and ceiling openings and offers the following characteristics:

– Soft insulation made of mineral wool and ablation coating

– Creation of cable insulation for solid walls, solid ceilings and light-duty partitions

– Fire insulation of electrical cables, cable bundles, electrical installation pipes and split air-conditioning lines

– Prevention of the spread of fire and smoke gas over a period of 30 to 120 minutes (fire resistance classes EI 30–120), depending on the design of the insulation

5.2 System overview

The PYROPLATE® Fibre CM insulation system consists of the following system components:

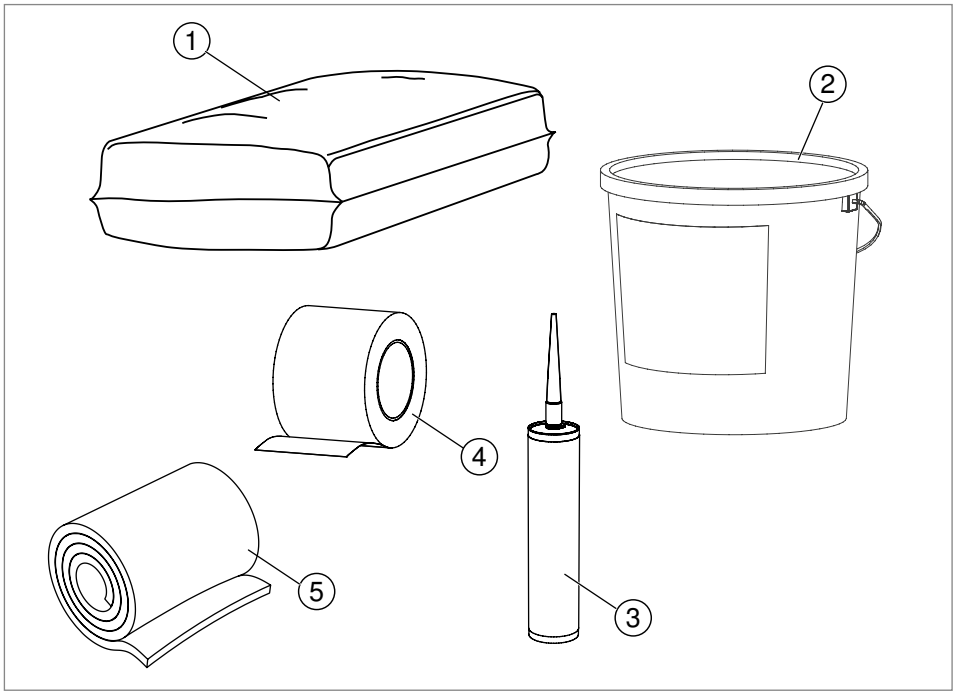
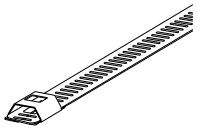


Fig. 1: System components

Figure no.	Designation	Article number
1	MIW-S mineral wool, 25 l	7202306
2	ASX-E ablation coating in a bucket, 5 kg	7202312
3	ASX-K ablation coating in a cartridge, 310 ml	7202310
4	FSB-WB 1.5 fire protection coil	7203163
5	MIW-MA path insulation	7202308

Tab. 1: System components

5.3 Accessories

Figure	Designation	Type	Function	Item no.
	MBS strip clip	MBS 015	To fix fire protection measures on cable bundles ≤ Ø 40 mm	7203100
		MBS 030	To fix fire protection measures on cable bundles ≤ Ø 85 mm	7203102
		MBS 045	To fix fire protection measures on cable bundles ≤ Ø 100 mm	7203104
	Identification plate	KS-S DE	Labelling of the insulation	7205425

Tab. 2: Accessories

6 Installation conditions PYROPLATE® Fibre CM

To ensure the functionality of the PYROPLATE® Fibre CM small insulation system, installations and installation locations must fulfil technical and structural requirements.

6.1 Component, insulation thicknesses and insulation spacings

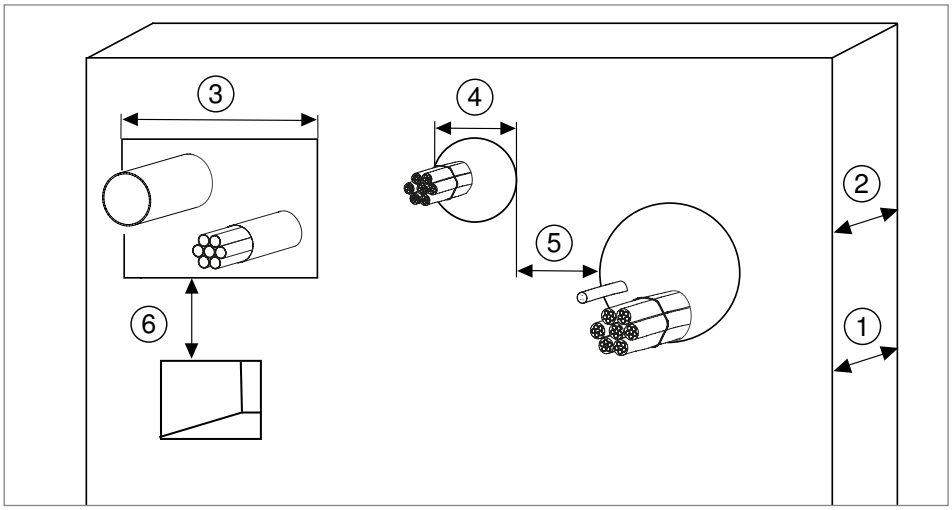


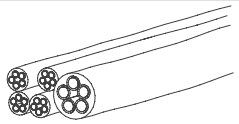
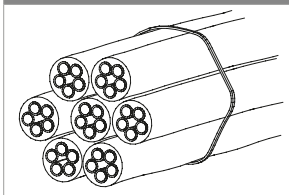
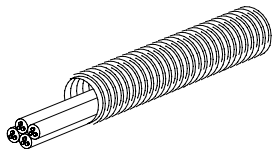
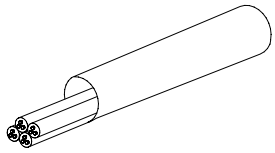
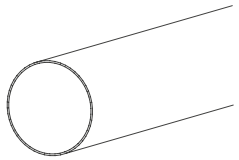
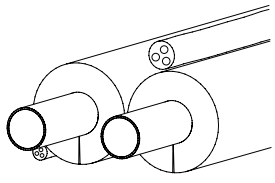
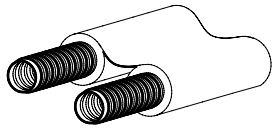
Fig. 2: Insulation distances to other components or component openings

Item	Designation	Wall (mm)	Ceiling (mm)
1	Component thickness	≥ 100	≥ 125
2	Insulation thickness	≥ 100	≥ 125
3	Maximum dimension of the component opening (width x height)	≤ 500 x 200	≤ 350 x 150
4	Maximum dimension of the component opening (round)	∅ ≤ 350	∅ ≤ 160
5	Distance to other PYROPLATE Fibre CM insulation systems	≥ 50	≥ 100
6	Distance to other openings and installations	≥ 200	≥ 200

Tab. 3: Insulation distances to other components or component openings

Note! *The total approved cross-section of the installations (relative to the appropriate external dimensions) may not be more than 60% of the shell opening.*

6.2 Approved assignment

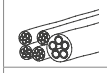
Cables	
	All kinds of electrical cables, also fibre optic conductors, total conductor diameter of the individual cables ≤ 21 mm.
Cable bundle	
	Total bundle diameter up to ≤ 100 mm made up of individual cables with external diameter ≤ 21 mm.
Plastic electrical installation pipes (EIR) according to EN 61386-22	
	With and without cable assignment. Malleable and made of PE: Individual external diameter 16 to ≤ 32 mm or bundled external diameter ≤ 100 mm, cable diameter ≤ 21 mm. Rigid and made of PVC-U: Individual external diameter 16 to ≤ 50 mm or bundled external diameter ≤ 70 mm, cable diameter ≤ 21 mm.
Steel electrical installation pipes (EIR) according to EN 61386-21	
	With and without cable assignment. Individual external diameter 16 to ≤ 50 mm, cable diameter ≤ 21 mm.
Combustible pipes	
	PVC U pipes according to EN ISO 15493:2003, EN ISO 1452-1:2009, DIN 8061:2009 and DIN 8062:2009: External pipe diameter ≤ 20 mm, pipe wall thickness 1.5 mm. External pipe diameter ≤ 32 mm, pipe wall diameter 2.4 mm.
Other assignment	
	Klimasplit cable combinations. Double copper pipe (pipe 1/pipe 2 external Ø 6–10 mm/10–18 mm; pipe wall thickness 1.0 mm) and pipe insulation of 9 mm thickness made of PE foam or single copper pipe (external Ø 6–18 mm; pipe wall thickness 1.0 mm) and pipe insulation of 9 mm thickness made of PE foam. PVC U pipe (external Ø 25 mm; pipe wall thickness 1.5 mm) according to EN 1452-1:2009 and DIN 8061:2009/8062:2009. Accompanying cables: A1 (NYY-J 5x1.5 RE), A2 (H 07 RN-F 5G1.5) and A3 (N2XH-J 5x1.5 RE).
	NanoSUN² – double solar pipes. Pipes made of rippled stainless steel with insulation, an accompanying cable integrated in the insulation and a PVC protective jacket made by Aktarus Group Srl for solar thermal applications, DN 16 to DN 40.

Tab. 4: Permitted installations

6.3 Minimum distances between installed items

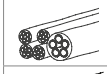
To guarantee the functionality of the PYROPLATE® Fibre CM insulation system, minimum distances between installations in solid walls and ceilings and light-duty partitions must be taken into account.

6.3.1 Spacing regulations, wall

		 Individual cable	 Cable bundle	 EIR plastic	 EIR steel	 Klimasplit cable combinations	Component layer		
							Top	Bottom	Side
	Individual cable	≥ 0		≥ 100	≥ 100	≥ 100	≥ 0		
	Cable bundle	≥ 0		≥ 100	≥ 100	≥ 100	≥ 0		
	EIR plastic	≥ 100		≥ 0	≥ 100	≥ 100	≥ 0		
	EIR steel	≥ 100		≥ 100	≥ 0	≥ 100	≥ 0		
	Klimasplit cable combinations	≥ 100		≥ 100	≥ 100	≥ 0	≥ 0		

Tab. 5: Spacing regulation, wall

6.3.2 Spacing regulations, ceiling

		 Individual cable	 Cable bundle	 EIR plastic	 EIR steel	 Combustible pipes	 Klimasplit cable combinations	 NanoSUN² double solar pipes	Component layer		
									Top	Bottom	Side
	Individual cable	≥ 0		≥ 100	≥ 100	≥ 0	≥ 100	≥ 100	≥ 0		
	Cable bundle	≥ 0		≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 0		
	EIR plastic	≥ 100		≥ 0	≥ 100	≥ 100	≥ 100	≥ 100	≥ 0		
	EIR steel	≥ 100		≥ 0	≥ 0	≥ 100	≥ 100	≥ 100	≥ 0		
	Combustible pipes	≥ 0		≥ 100	≥ 100	≥ 0	≥ 100	≥ 100	≥ 0		
	Klimasplit cable combinations	≥ 100		≥ 100	≥ 100	≥ 100	≥ 0	≥ 100	≥ 0		
	NanoSUN² double solar pipes	≥ 100		≥ 100	≥ 100	≥ 100	≥ 25	≥ 30	≥ 0		

Tab. 6: Spacing regulations, ceiling

6.4 Fire resistance classes

Various fire resistance classes can be achieved with the PYROPLATE® Fibre CM small insulation system according to classification reports nos. 00541/18/Z00NZP and 1913.3/13/Z00NP. The possible fire resistance classes are aligned according to the installation and the component.

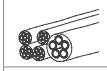
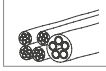
Note! *Installation may only be performed in light-duty partitions or solid walls of a thickness ≥ 100 mm or solid walls with a thickness ≥ 150 mm.*

6.4.1 Installation in walls

Media cable		Ø [mm]	Cable Ø [mm]	Measure	Fire resistance class
	Individual cable	–	≤ 21	–	EI 90
	Cable bundle with cables	≤ 100	≤ 21		EI 60/E 90
	EIR plastic, malleable	≤ 32	≤ 21	FSB-WB 1.5 fire protection coil	EI 120 U/U
	EIR plastic, rigid	16–≤ 50			
	EIR steel	≤ 16	≤ 14	–	EI 120 C/U
		>16–≤ 32			EI 30/E 120 C/U
		>32–≤ 50			
		≤ 16	≤ 14	FSB-WB 1.5 fire protection coil	EI 120 C/U
		>16–≤ 32			
		>32–≤ 50	≤ 21		
		≤ 32	≤ 14	MIW-MA path insulation	
		>32–≤ 50	≤ 21		
	Klimasplit cable combinations: Double (6–10/10–18 mm) or single copper pipe (6–18 mm) + PVC U pipe ≤ Ø 25 mm + 2 accompanying cables ≤ 21 mm	–	–	FSB-WB 1.5 fire protection coil	EI 90 U/U
Round Ø 30 mm without backfilling					
	Individual cable	–	≤ 21	PYROCOAT® ASX ablation coating thickness ≥ 25 mm	EI 90

Tab. 7: Fire resistance classes for installation in walls

6.4.2 Installation in ceilings

Media cable		Ø [mm]	Cable Ø [mm]	Measure	Fire resistance class
	Individual cable	–	≤ 21	–	EI 90
	Cable bundle	≤ 100	≤ 21		
	EIR plastic, malleable	≤ 32	≤ 21	FSB-WB 1.5 fire protection coil	EI 90 U/U
	Klimasplit cable combinations: Double (6–10/10–18 mm) or single copper pipe (6–18 mm) + PVC U pipe ≤ Ø 25 mm + 2 accompanying cables ≤ 21 mm	–	–	FSB-WB 1.5 fire protection coil	EI 90 U/U
	Klimasplit cable combinations: Double (10/18 mm) or single copper pipe (10–18 mm), pipe wall thickness 1.0 mm + pipe insulation of 9 mm thickness made of PE foam	–	–	–	EI 30/E 90 U/U
	NanoSUN² double solar pipes	DN 16	–	–	EI 90 U/U
		DN 40			EI 30/E 90 U/U
	Combustible pipes PVC-U	–	–	–	E 90 U/U
Round Ø 30 mm without backfilling					
	Individual cable	–	≤ 21	–	EI 90

Tab. 8: Fire resistance classes for installation in ceilings

7 Mounting

7.1 First support of the installation

Installed items must be supported in order to avoid overloading the insulation in the event of fire.

The supports of the installation must be non-combustible (material class DIN 4102-A).

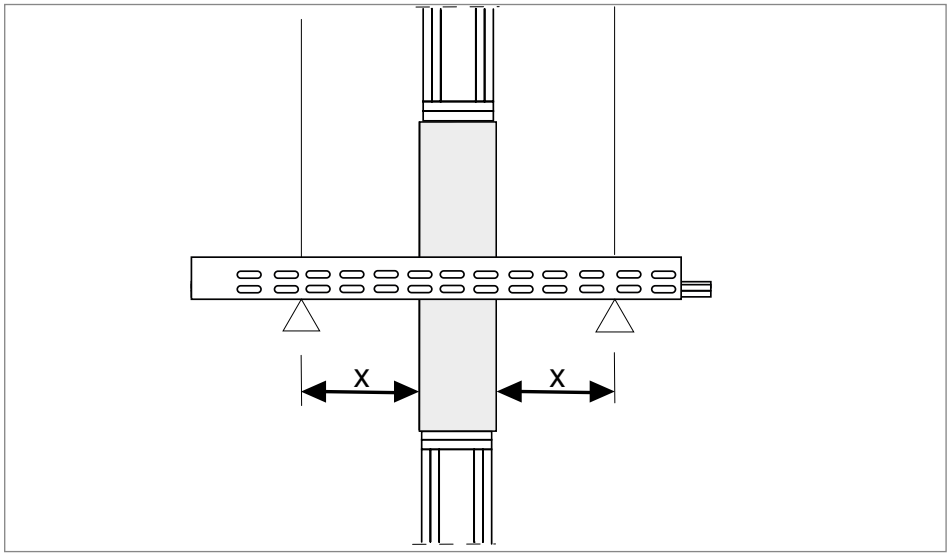


Fig. 3: Maximum distance for supports

Component	Maximum distance x in mm from the insulation surface
Wall	≤ 300
Ceiling	≤ 400

7.2 Measures on installations in walls and ceilings

To guarantee the functionality of the PYROPLATE® Fibre CM insulation system, some installations require additional fire protection measures, depending on the fire resistance class. See also “„Tab. 7: Fire resistance classes for installation in walls“ on page 13 and “„Tab. 8: Fire resistance classes for installation in ceilings“ on page 14.

7.2.1 FSB-WB 1.5 fire protection coil

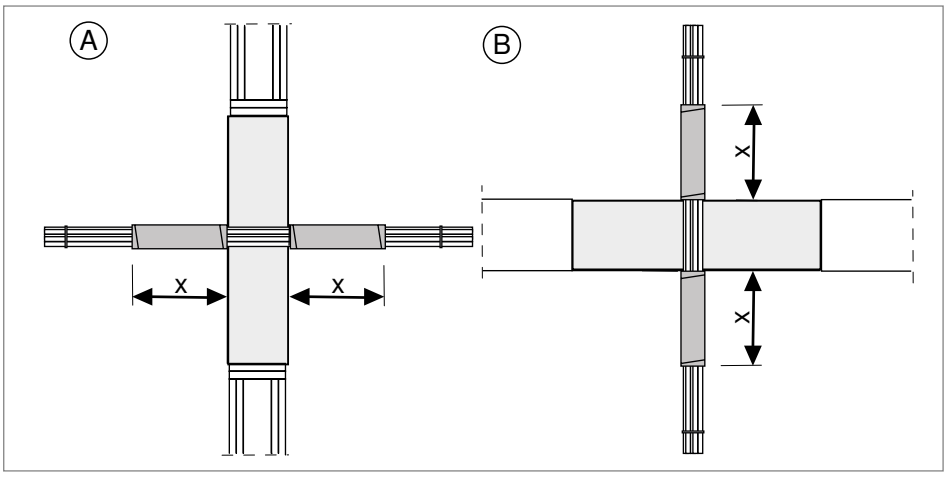


Fig. 4: Measure: FSB-WB 1.5 fire protection coil in wall A and ceiling B

Wall							
Media cable		FSB-WB 1.5 fire protection coil					
		Quantity	Width [mm]	In the insulation [mm]	In front of the insulation [mm]	Number of layers	Overlap [mm]
	Individual cable	—					
	Cable bundle	—					
	EIR plastic, malleable Single or bundled Bundle Ø ≤ 100, EIR Ø ≤ 32, cable Ø ≤ 21	2	125	50	75	2	0
	EIR plastic, rigid EIR Ø ≤ 16–≤ 50, cable Ø ≤ 14–≤ 21	2	125	50	75	1	0
	EIR plastic, rigid, bundle Bundle Ø ≤ 70 EIR Ø ≤16–≤ 50, cable Ø ≤ 14–≤ 21	2	125	50	75	2	0
	EIR steel Ø ≤ 50 Cable Ø ≤ 21	2	125	0	125	2	10
	Klimasplit cable combinations: Double (6–10/10–18 mm) or single copper pipe (6–18 mm) + PVC U pipe ≤ Ø 25 mm + 2 accompanying cables ≤ 21 mm	2	125	50	75	1	0

Fig. 5: Version of fire protection coil for installations in walls

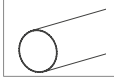
Ceiling							
Media cable		FSB-WB 1.5 fire protection coil					
		Quantity	Width [mm]	In the insulation [mm] y	In front of the insulation [mm] x	Number of layers	Overlap [mm]
	Individual cable	—					
	Cable bundle	—					
	EIR plastic, malleable Single or bundled Bundle Ø ≤ 100, EIR Ø ≤ 32, cable Ø ≤ 21	2	125	50	75	3	0
	Klimasplit cable combinations: Double (6–10/10–18 mm) or single copper pipe (6–18 mm) + PVC U pipe ≤ Ø 25 mm + 2 accompanying cables ≤ 21 mm	2	125	50	75	2	0
	NanoSUN² double solar pipes DN = 16–≤ 40	2	125	0	125	1	0
	Combustible pipes PVC-U	—					

Fig. 6: Fire protection coil for installations in ceilings

7.2.2 MIW-MA path insulation

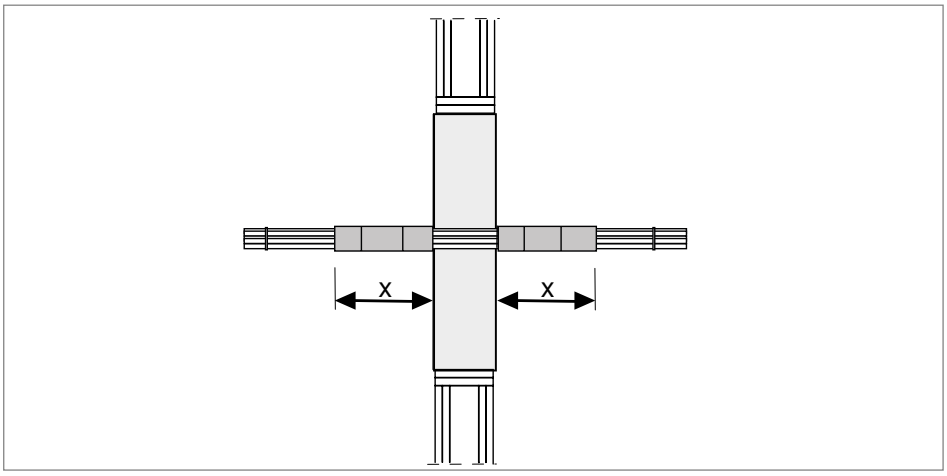


Fig. 7: Measure: Path insulation in wall

Wall			
Media cable		Path insulation	
		Insulation length [mm]	Insulation thickness [mm]
	EIR steel Ø ≤ 50 Cable Ø ≤ 21	≥ 250	≥ 20

7.3 Design variants

Depending on the component opening, the insulation can be designed in two ways.

– Rectangular insulation and round insulation Ø > 30 mm:
  Backfilling with MIW-MA mineral wool, sealing with PYROCOAT® ASX ablation coating

– Round insulation Ø ≤ 30 mm:
  Without backfilling, sealing with PYROCOAT® ASX ablation coating

Version with backfilling

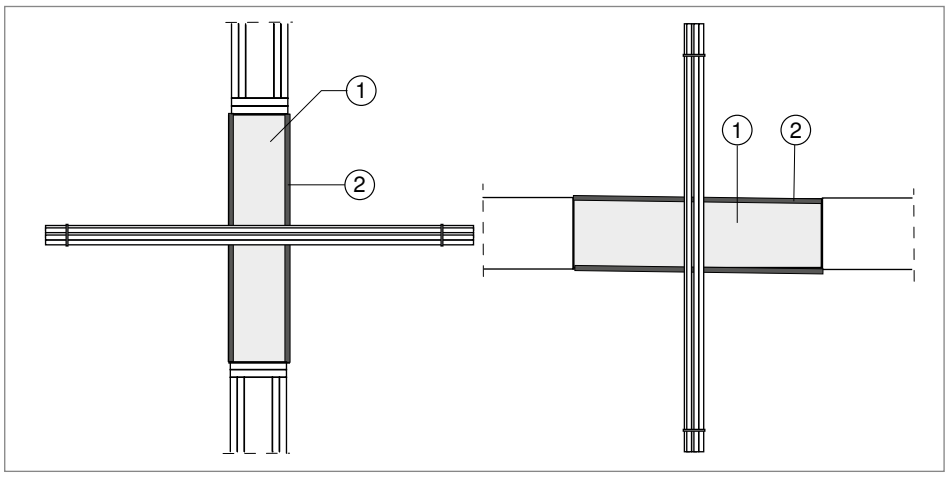


Fig. 8: Design variant with backfilling

① MIW-MA mineral wool
② PYROCOAT® ASX ablation coating,
dry layer thickness ≥ 3 mm

Version without backfilling

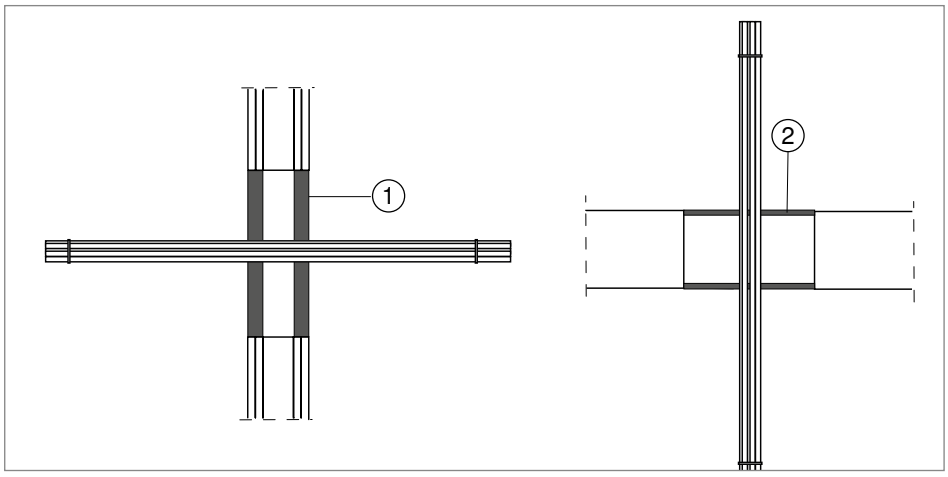


Fig. 9: Design variant without backfilling

① PYROCOAT® ASX ablation coating,
dry layer thickness ≥ 25 mm
② PYROCOAT® ASX ablation coating,
dry layer thickness ≥ 3 mm

7.4 Mounting small insulation

1. Clean the layer of the component opening and installations.
2. If required according to Chapter 7.2, wind the FSB-WB fire protection coil or MIW-MA section insulation around the installation and fix with an MBS strip clip.

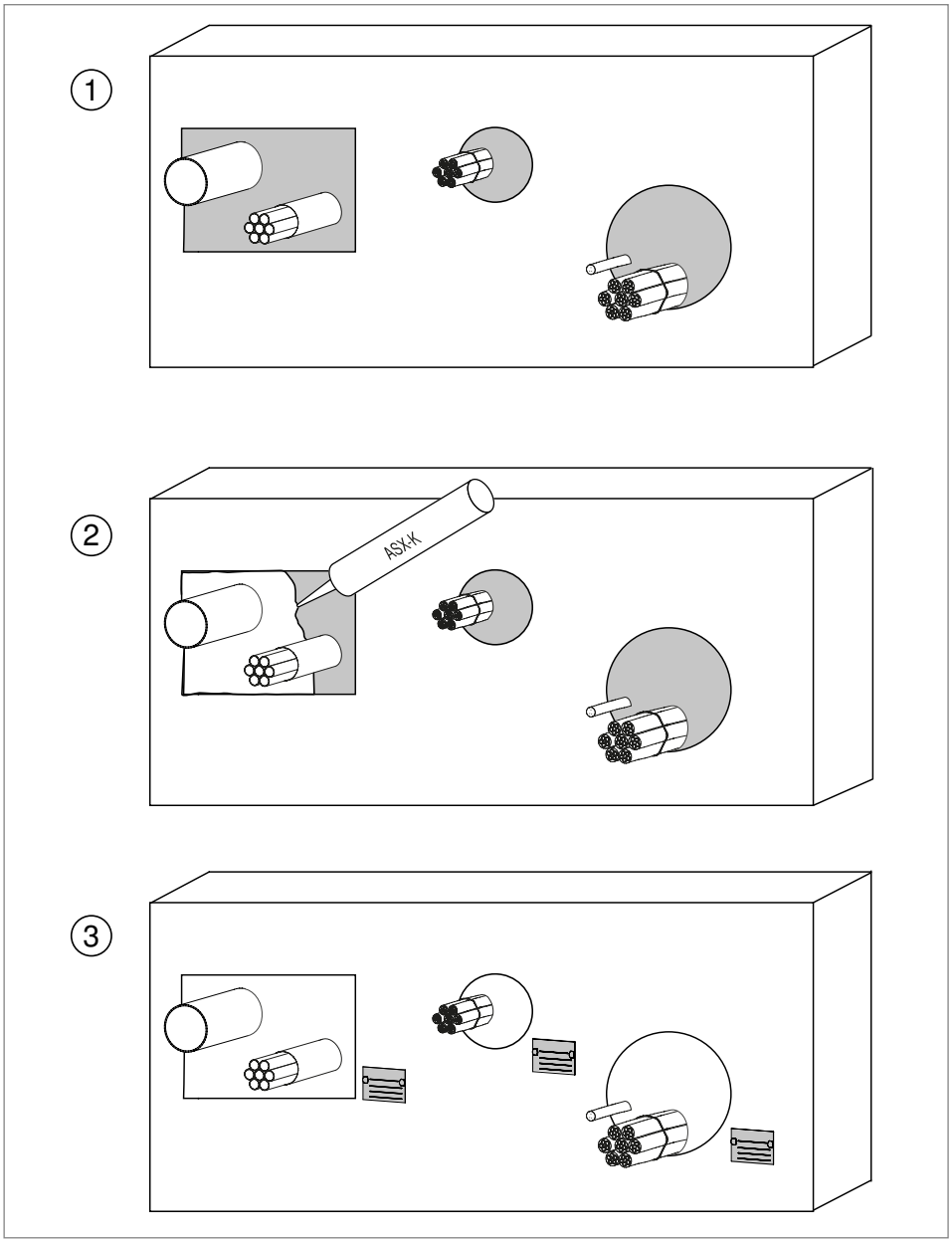


Fig. 10: Mounting small insulation

3. Tightly pack the opening with mineral wool ①.
   Note! *In the case of the installation variant without backfilling, packing with mineral wool is not required.*
4. Seal the entire insulation surface with ASX ablation coating ②. Dry layer thickness with mineral wool backfilling ≥ 3 mm, dry layer thickness without backfilling ≥ 25 mm.

Note! *If necessary, the PYROCOAT® ASX ablation coating can be diluted with water.*

5. Attach the identification plate next to the insulation ③.

8 National requirements

Note! *When mounting the system outside Germany or Austria, comply with other country-specific requirements that exist in addition to the national construction law.*

Germany/Austria

– The insulation system must be permanently labelled with a sign next to the insulation.

– The technically correct creation of combination insulation must be learned on a training course. Proof of training can be obtained through successfully participating in a training course at OBO Bettermann.

– After work has been completed, the client must be presented with a written declaration of conformity (see Chapter “„Declaration of conformity“ on page 23).

9 Maintaining PYROPLATE® Fibre CM

The PYROPLATE® Fibre CM small insulation does not require maintenance. Nonetheless, we recommend carrying out a visual inspection of the insulation at regular intervals, as part of the inspection of the electrical systems.

– Check that all the component parts of the insulation are tightly sealed.

– Reseal any joints or gaps with spreadable ASX ablation coating.

10 Disposing of PYROPLATE® Fibre CM

National laws and regulations must be observed for disposal.

Disposal during mounting

Residual material and packaging of the PYROPLATE® Fibre CM system components must be disposed of as mixed construction waste.

Disposal during building demolition

Installed PYROPLATE® Fibre CM materials must be disposed of as mixed construction waste.

Disposal after a fire

CAUTION

Irritant effect!
If there is a fire, burning cable insulation can create corrosive gases, which have an irritant and corrosive effect. When disposing of duct sections which have been subjected to a fire, wear breathing protection and protective clothing.

If the components of the PYROPLATE® Fibre CM system or other parts of the fire insulation have been subjected to fire damage, then the complete insulation must be removed and disposed of. We recommend obtaining the advice of a local fire damage restorer during disposal.

11 Technical data

Item no.	Designation	Dimensions
7202306	MIW-S mineral wool	25 l
7202312	ASX-E ablation coating, in a bucket	5 kg
7202310	ASX-K ablation coating, in a cartridge	310 ml
7203163	FSB-WB 1.5 fire protection coil	10,000 x 125 mm
7202308	MIW-MA path insulation	6,100 x 500 x 30 mm

Tab. 9: Technical data

Notes

Declaration of conformity

Insulation system according to DIN EN 1366 Part 3

Name and address of the company which erected the cable insulation

Building site or building with address

Required fire resistance class

Date of erection

This is confirmation that

– The cable insulation "PYROPLATE® Fibre CM mineral fibre plate", fire resistance classes to EI 120 according to EN 13501 Part 2, European approval number of the OIB: ETA-17/0364 and the General construction approval Z-19.15-2047 of the DIBt for installation in walls and ceilings up to a fire resistance class of 120 minutes was correctly created and installed as well as labelled according to all the individual requirements and in compliance with all the requirements of the named proof of usability and

– The building products used to produce the object of the approval (e.g. insulation compounds, mineral fibre plates, frames, etc.) were labelled according to the requirements of the proof of usability.

Place, date Stamp and signature

This confirmation must be given to the builder for forwarding, if necessary, to the responsible construction supervisory board.

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Building Connections