

Technical manual

Walraven Pacifyre® MWB System 2 x 50 mm

Ablative mineral fibre board seal

Mixed penetration sealing system made of mineral fibre boards and an ablative coating for electrical installations of all types as well as for electrical installation conduits, combustible/non-combustible pipes and further services.

Fire resistance class max. EI 120 in accordance with EN 13501-2 as per ETA-24/1116.



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1. Preliminary remarks / overview

1.1 Target group

The installation instructions are intended solely for personnel trained in fire protection.

1.2 Use of the instructions

Before starting work, read through these installation instructions completely once. Pay particular attention to the following safety instructions.

The authorisation holder assumes no liability for damage caused by failure to comply with these instructions.

Pictorial representations serve as examples only. Installation results may differ in appearance.

Unless stated otherwise, all lengths are specified in mm.

All information in this document represents the state of the art at the time of writing or the current version of the standard.

Upon request, Walraven will be pleased to provide the relevant legal and technical framework and manufacturer specifications for each individual case.

1.2.1 Safety instructions

Consult the respective safety information for the individual penetration seal components.

Personal protective equipment:



Wear protective clothing and non-slip shoes.



Use safety goggles, safety glasses.



P2 particle filter in case of short-term or low level exposure.
Use breathing protection in compliance with international/national standards.



Use chemically resistant gloves.
Recommended materials: butyl rubber, nitrile rubber, fluorinated rubber, PVC.

Safety instructions for the installation of floor penetration seals:



The area below the floor penetration seal must be cordoned off against entry during penetration seal work (barrier tape and warning sign: warning of possible falling objects, do not enter the area, penetration seal work in floor openings).



The contractor for the production of floor penetration seals must inform the client in writing (for forwarding to the client or appointed representative) that after the production of the fire penetration seals in floors, these must be secured on site against loads, in particular against being stepped on, by suitable measures (e.g. by fencing or by covering with grating).

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1.3 Building elements

Cladding of the aperture edge in plasterboard walls

Alongside the opening edge, corresponding to the wall panelling, with at least two layers of 12.5 mm cement or gypsum-bound building boards with a reaction to fire of class A1 or A2 according to EN 13501-1.

Plasterboard walls

Plasterboard walls must have a minimum thickness of ≥ 100 mm.

The cladding of the aperture edge must consist of at least one layer with a thickness of ≥ 12.5 mm. When installing without cladding the seal size may not be larger than 800×600 mm or 600×800 mm.

Plasterboard walls with timber studs must be declared and installed with at least the same number of layers as tested. The distance between the opening and the studs and transoms must be ≥ 100 mm. The gap between seal and stud / timber girt is sealed with an insulation of at least 100 mm, reaction to fire class A1 or A2 according to EN 13501-1.

If one or more studs must be cut to install the seal, horizontal girts must be installed.

Standard plasterboard wall construction is not applicable for construction on the basis of sandwich panels or for plasterboard walls with one-sided cladding (shaft walls).

The supporting structure must have the required fire resistance rating according to EN 13501-2.

Solid walls

Made of concrete or masonry with a density of ≥ 350 kg/m³.

The walls must be classified for the desired fire resistance duration according to EN 13501-2.

Solid floors

Made of concrete or masonry with a density of ≥ 550 kg/m³.

The floors must be classified for the desired fire resistance duration according to EN 13501-2.

Timber walls and floors

Made of cross laminated timber (CLT) by the manufacturer STORA ENSO.

Wall: thickness 100 mm / layers: 30/40/30

Floor: thickness 140 mm / layers: 40/20/20/20/40

A wall or floor of cross laminated timber can be regarded as equivalent to the tested wall and floor if the following requirements are met.

- The construction of the wall/floor is identical.
- The fire resistance class of the wall/floor is identical or higher.
- The construction is certified as per EN 13501-2.
- The construction is based on the same solid wood panels as tested.
- The solid wood panels are of the same building material category as tested or of a better category.
- The strength class of the solid wood panels as per EN 338 is equivalent to the class of the tested panels or a higher class.
- The mass burning rate of the solid wood panels as per EN 1995-1-2 is equivalent to the class of the tested panels or a higher class.
- The thickness of the solid wood panel is at least equivalent to that of the tested panel.

Since particularly critical walls and floors were tested with this construction, we are also able to offer our sealing systems for timber components by other manufacturers, such as KLH, Mayr-Melnhof, Binderholz et al. Our technical service will be glad to assist you with any enquiry.

Sandwich panel walls

Sandwich panel walls PAROC AST-S/F with a thickness of ≥ 120 mm.









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2. Allowed services

For specific fire resistance classes and pipe end configurations depending on measurements and fire protection measures see the respective chapters on design variants starting on page 17.

2.1 Cables / electrical installation conduits / wave guides / speedpipes

Service		Max. diameter [mm]	
	Cables	≤ 80	
	Cable bundles	≤ 100, cable Ø ≤ 21	
	Cable trays	✓	
	Single conduits	made of plastic	≤ 16
		made of steel	≤ 16
	Electrical installation conduits made of plastic	single	≤ 32 with or without cables
		bundled	≤ 100, conduit Ø ≤ 32, with or without cables
	Electrical installation conduits made of steel	single	≤ 32 with or without cables
	Coaxial cables and wave guides	CommScope HELIAX®	≤ 51.1
		RFS CELLFLEX®	≤ 50.3
		RFS RADIAFLEX®	≤ 48.2
	speedpipes	≤ 50, single Ø ≤ 14	

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2.2 Combustible pipes



Standard pipes			
Pipe material	in acc. with standard	Diameter [mm]	Pipe wall thickness [mm]
PVC-U	EN 1329-1, EN 1452-2, EN 1453-1, EN ISO 15493	≤ 160.0	1.8–14.6
PVC-C	EN 1566-1, EN ISO 15493, EN ISO 15877	≤ 160.0	1.8–14.6
PE-HD	EN 1519-1, EN 12201-2, EN ISO 15494, EN 12666-1	≤ 160.0	1.8–14.6
PP	EN 1451-1, EN ISO 15874, EN 15494, DIN 8077 / DIN 8078	≤ 160.0	1.8–14.6
PP-H	EN 1451-1, EN ISO 15874, EN 15494	≤ 75.0	1.8–8.2
ABS	EN 1455-1, EN ISO 15493	≤ 160.0	1.8–14.6
SAN + PVC	EN 1565-1	≤ 160.0	1.8–14.6

Non-standard pipes	
Type of pipe	Diameter [mm]
Geberit Silent-Pro	≤ 160.0
Geberit Silent-PP	≤ 160.0
Geberit Silent-dB20	≤ 160.0
POLOPLAST POLO-KAL NG	≤ 160.0
POLOPLAST POLO-KAL XS	≤ 160.0
POLOPLAST POLO-KAL 3S	≤ 110.0
CONEL DRAIN	≤ 160.0
Wavin AS	≤ 160.0
Wavin AS+	≤ 160.0
Wavin SiTech+	≤ 160.0
REHAU RAUPIANO PLUS	≤ 160.0
REHAU RAUPIANO LIGHT	≤ 160.0
REHAU RAUSILENTO	≤ 160.0
GF Silenta Premium	≤ 160.0
Hakan Silenta Premium	≤ 160.0
Valsir Triplus	≤ 160.0
Pipelife MASTER 3 PLUS	≤ 160.0
KE KELIT PHONEX AS	≤ 160.0

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2.3 Multilayer pipes



Type of pipe	Diameter [mm]
Henco	≤ 63.0
FRÄNKISCHE alpex L, FRÄNKISCHE alpex F50	≤ 75.0
Geberit Mepla	≤ 75.0

2.4 Non-combustible pipes



Pipe material	Diameter [mm]
Copper, steel, stainless steel, cast iron	≤ 88.9
Steel, stainless steel, cast iron	≤ 219.1

2.5 Other services



Service	Dimensions
HVAC split line combinations	Copper pipe ≤ 2 × Ø 22 mm, + 9 mm PE foam + 1 pipe PVC-U Ø ≤ 25.0 + ≤ 2 × cable Ø ≤ 21.0 mm or 3 × cable Ø ≤ 14.0 mm

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3. Thicknesses, sizes and spacing

Dimensions					
	Wall [mm]	Floor [mm]	Timber wall [mm]	Timber floor [mm]	Sandwich panel wall [mm]
Thickness of building element	≥ 100	≥ 150	≥ 100	≥ 150	≥ 120
Thickness of penetration seal	≥ 100	≥ 150	≥ 100	≥ 150	≥ 100
Maximum dimensions of the aperture (width × height)	2200 × 1100 / 1100 × 2200, without cladded aperture edge: 800 × 600 / 600 × 800	2600 × 1000 / ∞ × 800	1000 × 600 / 600 × 1000	1000 × 600 / 10 000 × 400	1000 × 1000
Distance to other penetration seals	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100
Distance to other apertures or installations	≥ 200	≥ 200	≥ 200	≥ 200	≥ 200

The total allowable cross section of the installations (outer dimensions) is ≤ 60% of the construction aperture.

3.1 Initial supports

Penetrating services must be supported at the distances specified in the table below. In wall constructions support is required on both sides. In floor constructions support is required on the upper side of the floor. Essential parts of the supports must be non-combustible.

Initial supports	Wall	Floor
Cables, cable bundles, cable support structures	≤ 650	
Electrical installation conduits with fire protection wrap Walraven Pacifyre® NCP Wrap	≤ 250	
Electrical installation conduits with fire protection collar Walraven Pacifyre® AWM II+	≤ 500	
speedpipes for glass fibre cables and micro cables	≤ 250	
Combustible pipes	≤ 500	≤ 650
Multilayer pipes	≤ 650	
Non-combustible pipes with section insulation made of mineral fibre mats or shells	≤ 650	≤ 850
Non-combustible pipes with section insulation made of FEF	≤ 500	
HVAC split line combinations	≤ 250	
All specifications in mm		

4. Spacing requirements for services



NOTE:

In timber components and sandwich panel walls, services must be installed at a distance of ≥ 100 mm to the aperture edge.

Spacing requirements in walls and floors

														Aperture edge		
		Single cables	Cable bundles	Cable support systems	Coaxial cables and wave guides	Speedpipes	Electrical installation conduits, single, made of steel	Electrical installation conduits made of plastic, single/bundled	Combustible pipes	Non-combustible pipes with FEF insulation	Non-combustible pipes with lamella mat insulation	Multilayer pipes	HVAC split line combinations	Upper	Lower	Side
								with fire protection wrap	with fire protection collar	with fire protection collar	with endless collar					
	Single cables	≥ 0	≥ 0	≥ 0	≥ 100	≥ 25	≥ 75	≥ 75	≥ 100	≥ 20	≥ 100	≥ 50	≥ 50	≥ 100	≥ 100	≥ 0
	Cable bundles	≥ 0	≥ 0	≥ 0	≥ 100	≥ 25	≥ 75	≥ 75	≥ 100	≥ 20	≥ 100	≥ 50	≥ 50	≥ 100	≥ 100	≥ 0
	Cable support systems	≥ 0	≥ 0	≥ 0 (horizontally) / ≥ 100 (vertically)	≥ 100	≥ 25	≥ 75	≥ 75	≥ 100	≥ 20	≥ 100	≥ 50	≥ 50	≥ 100	≥ 100	≥ 0
	Coaxial cables and wave guides	≥ 100	≥ 100	≥ 100	≥ 50	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 25
	Speedpipes	≥ 25	≥ 25	≥ 25	≥ 100	≥ 0	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 25
	Electrical installation conduits, single, made of steel	≥ 75	≥ 75	≥ 75	≥ 100	≥ 100	≥ 0	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 0
	Electrical installation conduits made of plastic, single/bundled	with fire protection wrap	≥ 75	≥ 75	≥ 75	≥ 100	≥ 100	≥ 100	≥ 0	≥ 100	≥ 100	≥ 75	≥ 100	≥ 100	≥ 100	≥ 25
		with fire protection collar	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 0	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100
	Combustible pipes	with fire protection collar	≥ 20	≥ 20	≥ 20	≥ 100	≥ 100	≥ 100	≥ 100	≥ 50	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 25
		with endless collar	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 75	≥ 100	≥ 100	≥ 50	≥ 100	≥ 100	≥ 100	≥ 100
	Non-combustible pipes with FEF insulation	≥ 0	≥ 0	≥ 0	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 0	≥ 0	≥ 100	≥ 100	≥ 25
	Non-combustible pipes with lamella mat insulation	≥ 0	≥ 0	≥ 0	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 0	≥ 0	≥ 100	≥ 100	≥ 25
	Multilayer pipes	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 0	≥ 0	≥ 100	≥ 100	≥ 25
	HVAC split line combinations	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 0	≥ 0	≥ 100	≥ 50	≥ 25

All specifications in mm. All specifications refer to distances between the respective insulations and additional measures if applicable.

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5. Included products

Walraven Pacifyre® MWB-A Coating



5 kg pail – Art. no. 2139400005
12.5 kg pail – Art. no. 2139400001

Walraven Pacifyre® MWB-A Filler



310 ml cartridge – Art. no. 2139400003

Walraven Pacifyre® NCP Wrap Fire protection wrap



Roll, 5 m × 125 mm
(separable into 2 × 62.5 mm)
– Art. no. 2136300050
Roll, 10 m × 125 mm
(separable into 2 × 62.5 mm)
– Art. no. 2136300100

Walraven Pacifyre® ID-card



1 piece – Art. no. 2149999xxx



Walraven Pacifyre® EFC Endless Collar

Set with 10 m fire protection strip, 3 m stainless steel strap and 18 fasteners – Art. no. 2132100700

Walraven Pacifyre® MWB 50 1-S



Pre-coated on one side with Walraven Pacifyre® MWB-A
Dimensions 1000 × 600 × 50 mm
Box with 4 pcs. – Art. no. 2139400050

Mineral wool A1



Reaction to fire class in acc. with EN 13501-1: A1
Melting point ≥ 1000 °C

Mineral fibre board in acc. with EN 13162



Criteria: density ≥ 150 kg/m³
Reaction to fire class A1 in acc. with EN 13501:1
Melting point ≥ 1000 °C.
(TR10) tensile strength vertical to board surface ≥ 10 kPa according to EN 1607
Thickness ≥ 50 mm

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Walraven Pacifyre® AWM II+ fire protection collar
Ø 32 mm – Ø 160 mm

Dimensions [mm]	Inner Ø collar [mm]	Outer Ø collar [mm]	Overall height [mm]	Number of tabs [n]	Art. no.
32	36–40	50–54	26.0	2	2134032034
40	44–48	58–62	26.0	2	2134040042
50	54–57	68–71	26.0	2	2134050052
63	67–70	94–97	26.0	4	2134063065
75	79–83	106–110	26.0	4	2134075077
90	94–100	132–138	26.6	4	2134090092
110	114–120	155–161	26.6	4	2134110112
125	129–135	172–178	40.0	4	2134125125
140	144–152	200–206	40.0	6	2134140140
160	164–169	220–225	40.0	6	2134160160



Lamella mat or pipe shells made of mineral fibres

Classification: A2-S1, d0 or A1 in acc. with EN 13501-1
Minimum bulk density: 35 kg/m³
Melting point ≥ 1000 °C

for example:

Name	Nominal bulk density [kg/m ³]	abP/DoP
Rockwool lamella mat Klimarock Roll, 3.05 m ² – Art. no. 01187100	40–50	DE0628031801 of 14.03.2018
Rockwool ProRox PS 960 (formerly ROCKWOOL Lapimus pipe shell 880)	95–150	PROPS960NL-03
Rockwool 800	90–115	DE0721011801 of 15.01.2018
Rockwool ProRox WM 950 (formerly WM 80/RTD-2)	85	PROWM950D-03 of 04.05.2017
Rockwool ProRox WM 960 (formerly WM 100/ RBM)	100	PROWM960D-03 of 04.05.2017
Rockwool Conlit 150 U	150	P-NDS04-417
Isover Schalen Protect 1000 S, Isover Schalen Protect 1000 S Alu	70–90	DE0002-Pipe_Sections 001 of 10.06.2013
Isover mineral fibre mat MD2 and MD2/A	80	DE0002-Protect_EN14303 002 of 09.02.2015
Isover mineral fibre mat MDD and MDD/A	115	
PAROC Hvac Section AluCoat T	85–120	40361
PAROC Pro Section 100	100	40080
PAROC Hvac Lamella Mat AluCoat Fix	50	40236

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Section and protective insulations

made of flexible elastomeric foam (FEF)
in accordance with EN 14304

for example:

Name	abP/DoP
ArmaFlex Protect	(0543-CPR-2016-001, 01.04.2015)
AF/ArmaFlex	0543-CPR-2016-001, 01.04.2015
AF/ArmaFlex Evo	0543-CPR-2020-101
SH/ArmaFlex	0543-CPR-2013-013, 01.01.2015
NH/ArmaFlex	0552-CPR-2013-015, 08.08.2018
NH/ArmaFlex Smart	0543-CPR-2020-102
ArmaFlex LS	0551-CPR-2016-066
ArmaFlex Ultima	0543-CPR-2016-017
FEF Kaiflex KKplus s1	DoP KKplus s1 01032018001, 01.03.2018
FEF Kaiflex HTplus	DoP HTplus s1 01032018001 01.03.2018
K-Flex R90	P-2300/871/16-MPA BS, 04.10.2016
flexen Heizungskautschuk	LE_5258006015_00_M_flexen_Heizungskautschuk, 30.06.2013
flexen Kältekautschuk	LE_0869806006_00_M_flexen_Kältekautschuk, 30.06.2013
EUROBATEX	01/20190610
EUROBATEX HF	03/20171201

5.1 Declarations of Performance

The Declarations of Performance for the featured products are available for download on our website:
www.walraven.com/pacifyre

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6. Design

6.1 Fire resistance classes

Walraven Pacifyre® MWB System 2 x 50 mm meets the requirements of max. class EI 120 in acc. with EN 13501-2.

The fire resistance class of the sealing system is reduced to the fire resistance class of the installed service with the lowest fire resistance rating.

The fire resistance class of the sealing system is reduced to the maximum fire resistance class of the surrounding building element.

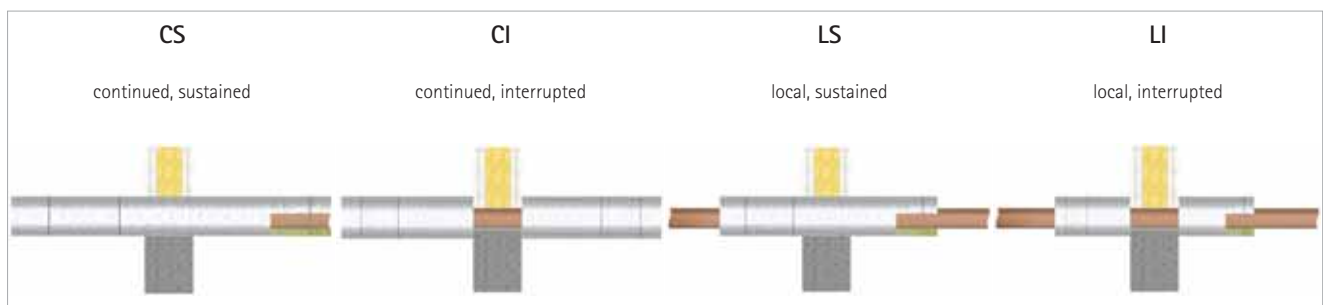
Building element	Fire resistance class
Plasterboard wall	max. EI 120
Plasterboard wall (without cladged aperture edge)	max. EI 90
Solid wall	max. EI 120
Solid floor	max. EI 120
Timber wall (CLT)	max. EI 90
Timber floor (CLT)	max. EI 90
Sandwich panel wall	max. EI 120

6.2 Pipe end configurations

Non-combustible pipes				
tested	included configurations			
	U/U	U/C	C/U	C/C
U/U	✓	✓	✓	✓
U/C	-	✓	✓	✓
C/U	-	-	✓	✓
C/C	-	-	-	✓

Combustible pipes				
tested	included configurations			
	U/U	U/C	C/U	C/C
U/U	✓	✓	✓	✓
U/C	-	✓	-	✓
C/U	-	✓	✓	✓
C/C	-	-	-	✓

6.3 Pipe insulation configurations



Results for LS insulation are also applicable to CS insulation.

Results for LI insulation are also applicable to CI insulation.

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7. Design variants

The sealing system may be used to close apertures without installations (reserve penetration for subsequent configurations).

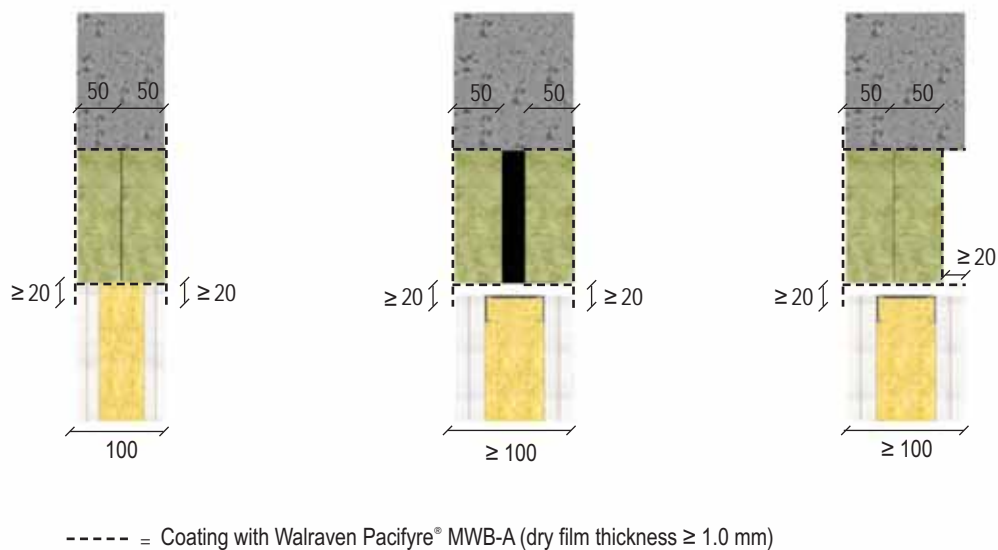
It is not necessary to clad the aperture opening in plasterboard walls. The maximum seal size is then reduced to 600 x 800 mm or 800 x 600 mm (see chapter "Thicknesses, sizes and spacing" on page 8).

Pieces of the mineral fibre boards must be coated with Walraven Pacifyre® MWB-A so that they are glued together. The edges of the mineral fibre boards and/or the aperture edge must be coated with Walraven Pacifyre® MWB-A so that the boards are glued to the building element.

Final coating of the outer board surface and a surrounding area of ≥ 20 mm with Walraven Pacifyre® MWB-A (dry film thickness 1.0 mm). It is not necessary to glue the board layers together.

Sealing of annular gap: ≤ 5 mm by filling the entire depth with Walraven Pacifyre® MWB-A, > 5 mm by filling with loose mineral wool and coating with Walraven Pacifyre® MWB-A (dry film thickness ≥ 1 mm).

Design variants for plasterboard walls and solid walls

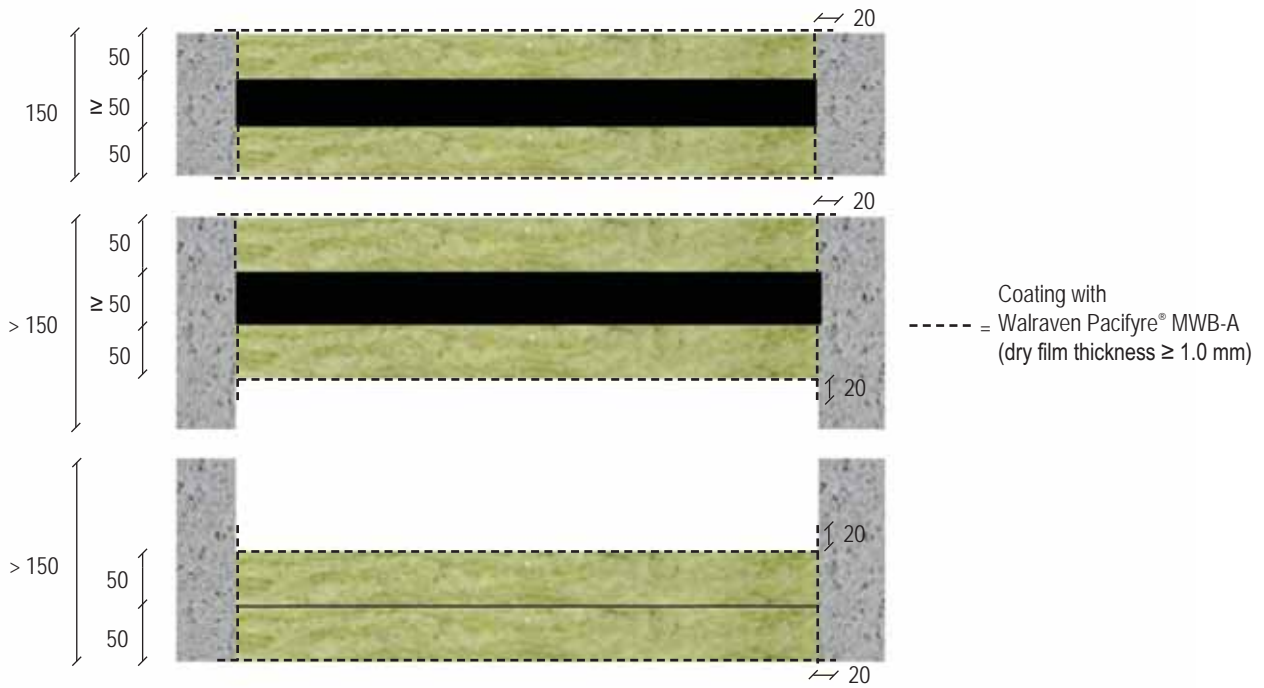


All specifications in mm

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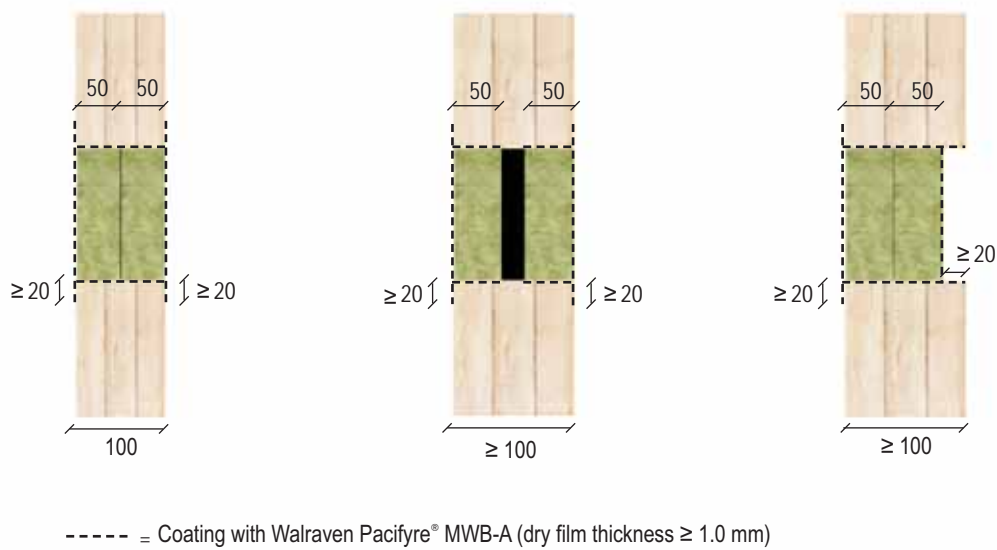
Walraven Pacifyre® MWB System 2 x 50 mm

Design variants for solid floors



All specifications in mm

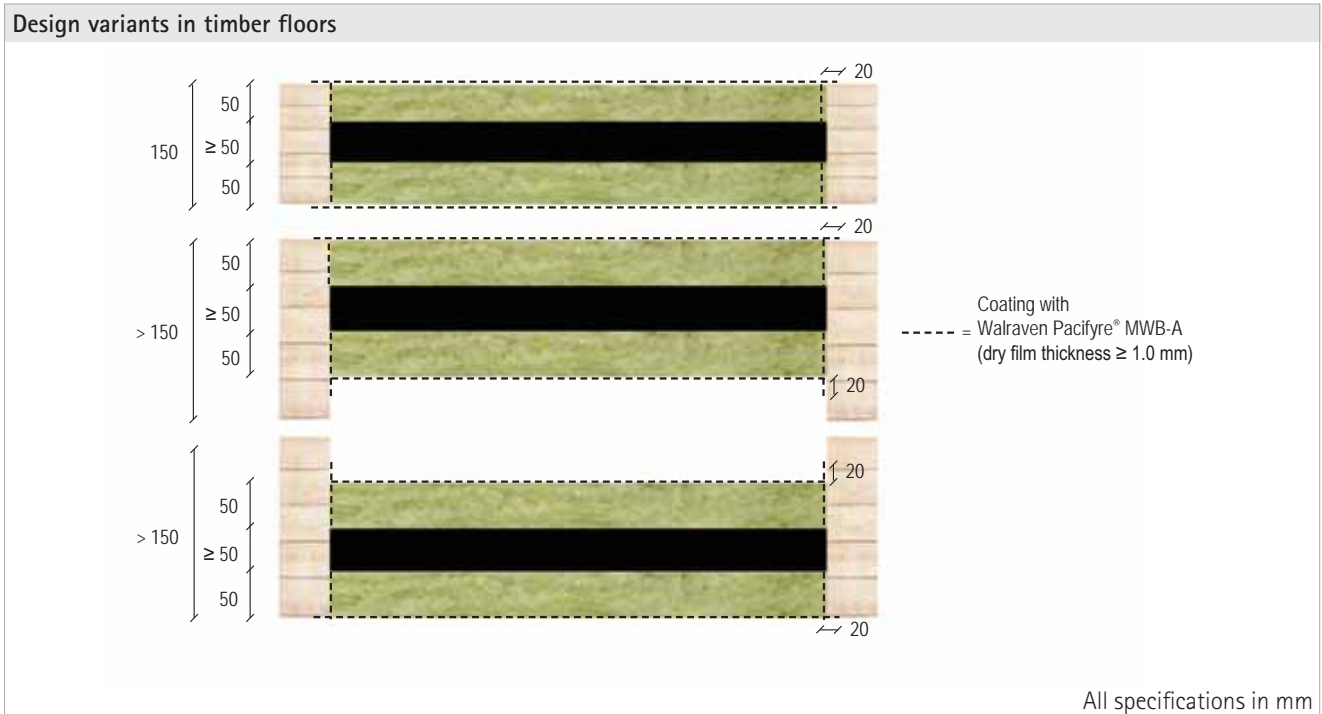
Design variants in timber walls



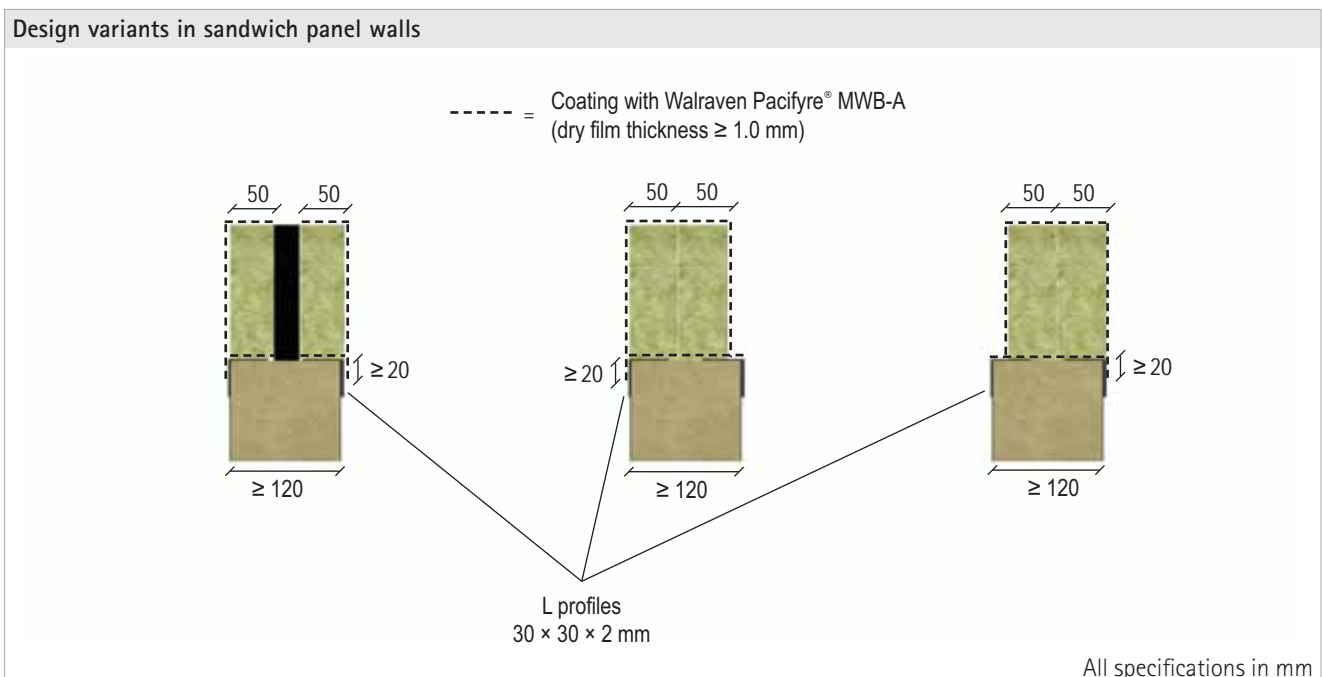
All specifications in mm

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In timber walls and floors, the spacing distance between applied services and aperture edge must always be at least 100 mm (see chapter 5, Spacing requirements for services).



On both sides of the seal, L profiles with the dimensions 30 x 30 x 2 mm must be attached alongside the aperture edge fixed every 150 mm to the wall cladding with sheet metal screws.

In sandwich panel walls, the spacing distance between applied services and aperture edge must always be at least 100 mm (see chapter 5, Spacing requirements for services).

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8. Fire protection measures

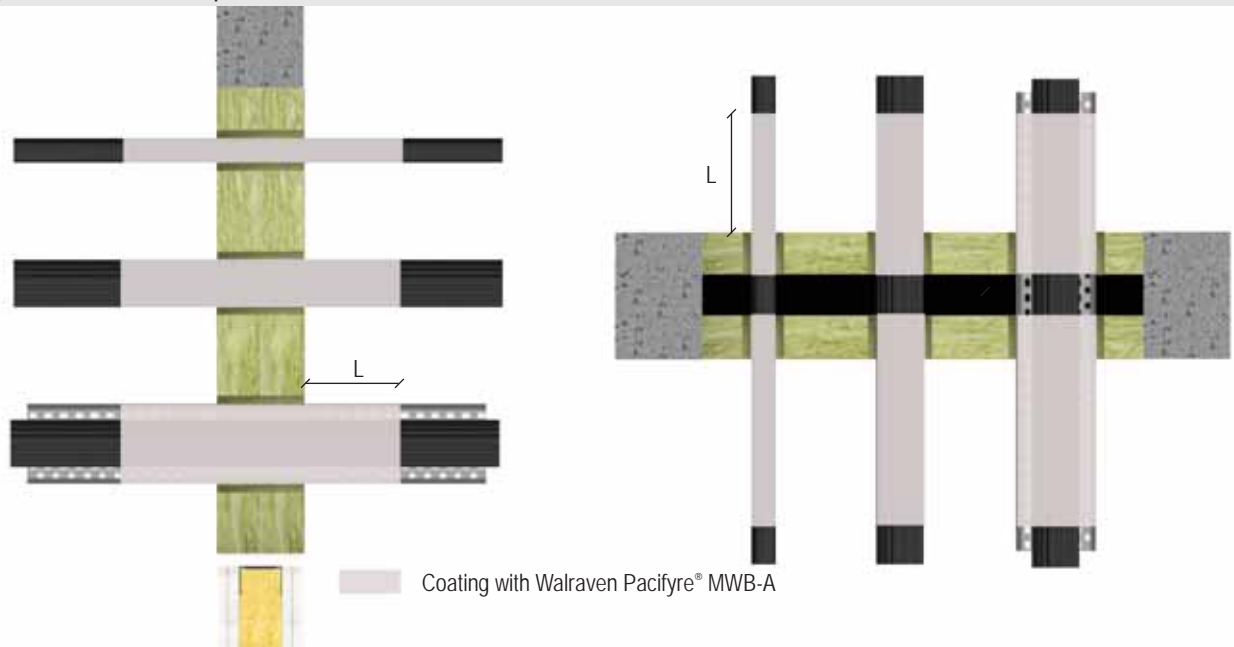
8.1 Cables / cable bundles / cable support systems

Cables and cable bundles may be installed with or without cable trays.

It is not necessary to fill the interstices of the cables if the bundle consists of parallel-running cables that are tightly packed, tied, stitched or welded together.

In the penetrated area (inside the mineral fibre boards), all cables must be coated with Walraven Pacifyre® MWB-A (dry film thickness ≥ 1.0 mm). It is not necessary to coat single cables (subsequent installation) $\varnothing \leq 21$ mm.

Design for wall and floor penetration seals



For building element and seal thicknesses see page 8. For design variants see page 14.

All specifications in mm

Service	Diameter [mm]	Fire protection coating Walraven Pacifyre® MWB-A		Fire resistance class	
		Dry film thickness [mm]	Length of coating in front of seal L [mm]	Wall	Floor
Single cables (subsequent installation)	≤ 21	-	-	EI 120	EI 120
Cables	≤ 50	≥ 1.0	≥ 100	EI 120	EI 120
			≥ 150	EI 90	EI 90
	≤ 80		≥ 100	EI 90	EI 120
			≥ 150	EI 90	EI 90
Cable bundles with cables $\varnothing \leq 21$ mm	≤ 100	≥ 100	EI 120	EI 120	
Single conduits	made of steel	≤ 16	≥ 100	EI 120 U/C	EI 120 U/C
	made of plastic	≤ 16	≥ 100	EI 120 U/U	EI 120 U/U

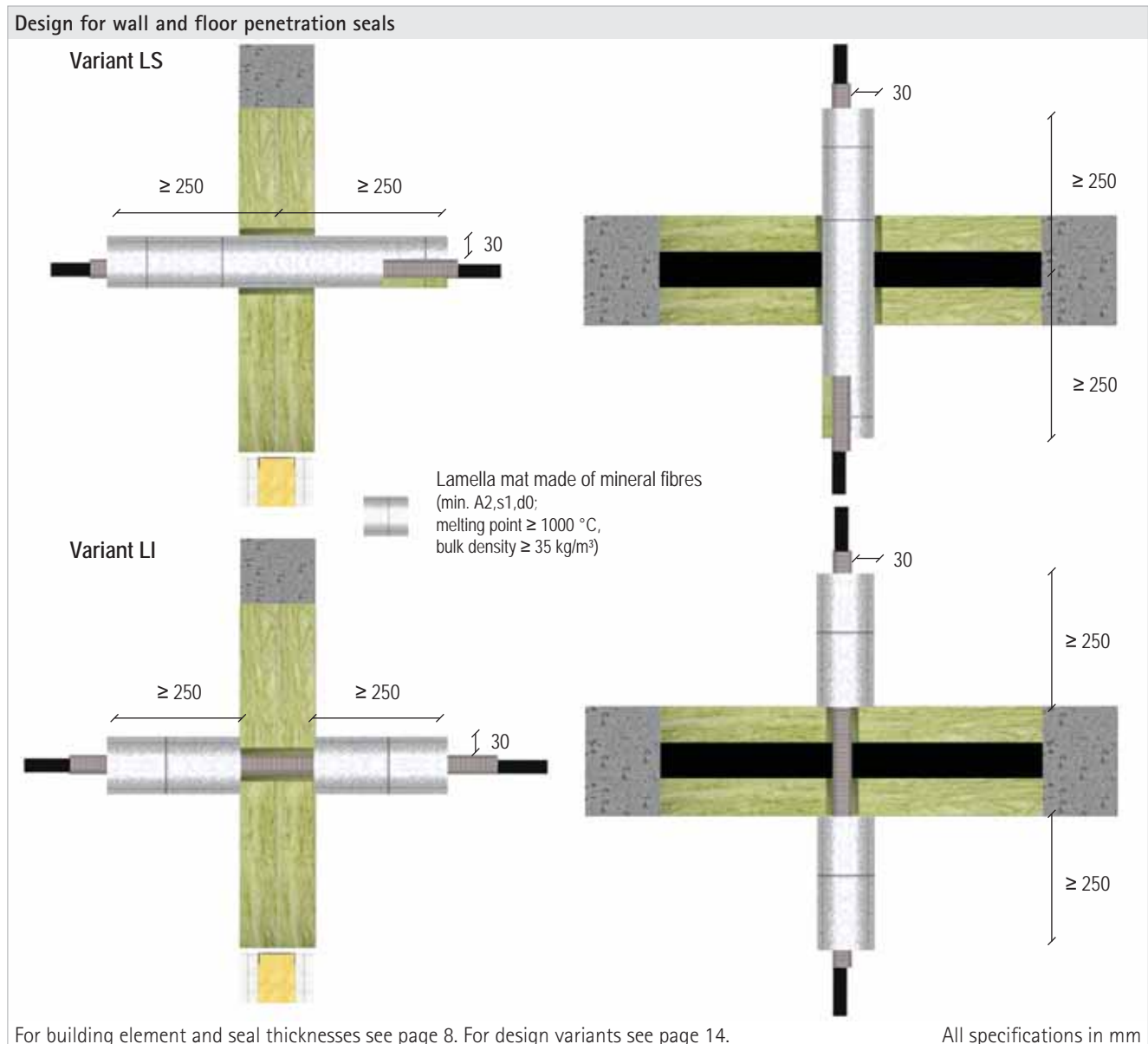
Technical manual

Walraven Pacifyre® MWB System 2 x 50 mm

8.2 Electrical installation conduits

8.2.1 Conduits made of steel

Conduits made of steel must be sealed on both sides in walls and on the lower side in floors at a depth of 15 mm with mineral wool and Walraven Pacifyre® MWB-A . Conduits made of steel must protrude at least 350 mm from the seal. The lamella mat must be secured with winding wire against falling out.



Service	Dimensions	Lamella mat		Fire resistance class	
		Length in front of seal L [mm]	Thickness S [mm]	Wall	Floor
EIC made of steel – single	$\varnothing \leq 32$ with/without cables ($\varnothing \leq 21$)	≥ 200 (variant LS), ≥ 250 (variant LI)	30	EI 120 U/C	EI 120 U/C
EIC made of steel – multiple penetration in linear arrangement	≤ 3 EIC $\varnothing \leq 32$ with/without cables ($\varnothing \leq 21$)			EI 90 / E 120 U/C	EI 120 U/C

Technical manual

Walraven Pacifyre® MWB System 2 x 50 mm

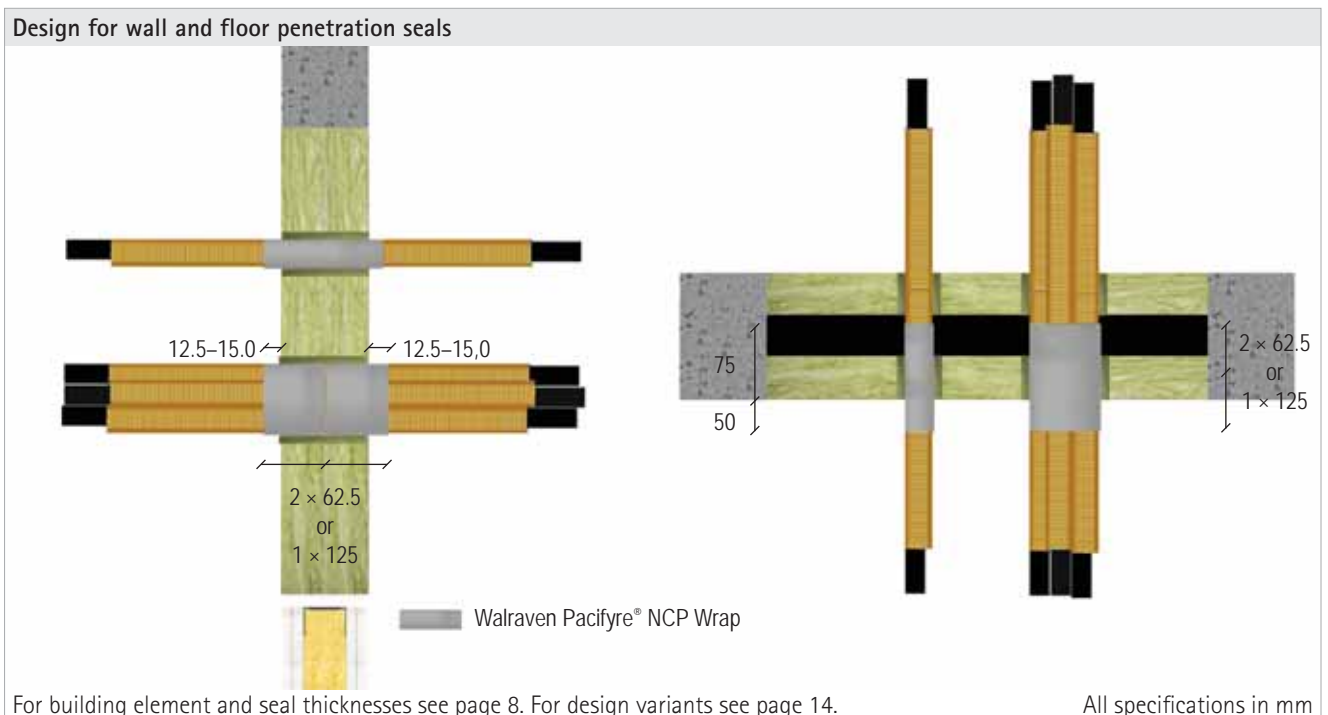
8.2.2 Electrical installation conduits made of plastic with fire protection wrap Walraven Pacifyre® NCP Wrap

Electrical installation conduits made of plastic must protrude at least 200 mm from the seal.

Electrical installation conduits must be wrapped with the fire protection wrap Walraven Pacifyre® NCP Wrap.

The fire protection wrap Walraven Pacifyre® NCP Wrap is coated on one side and equipped with a protective film. The film must be removed before applying the wrap with the coated side facing inwards.

For easier installation the wrap can be secured against falling out with duct tape or winding wire.



Service	Dimensions	Fire protection wrap Walraven Pacifyre® NCP			Fire resistance class	
		Width [mm]	Number of wraps [n]	Number of layers [n]	Wall	Floor
Conduits made of plastic, flexible or rigid – single	$\varnothing \leq 32$ with/without cables ($\varnothing \leq 21$)	1 × 125 or 2 × 62.5		1	EI 120 U/U	EI 120 U/U
	$\varnothing \leq 63$ with/without cables ($\varnothing \leq 21$)			2	EI 120 U/U	EI 90 U/U / E 120 U/U
Conduits made of plastic, flexible or rigid – bundled	$\varnothing \leq 32$ bundled $\varnothing \leq 100$ with/without cables ($\varnothing \leq 21$)			2	EI 120 U/U	EI 120 U/U
	Conduits made of plastic, flexible or rigid – multiple penetration in linear arrangement			≤ 3 EIC $\varnothing \leq 32$ with/without cables ($\varnothing \leq 21$)	1	EI 120 U/U

Technical manual

Walraven Pacifyre® MWB System 2 x 50 mm

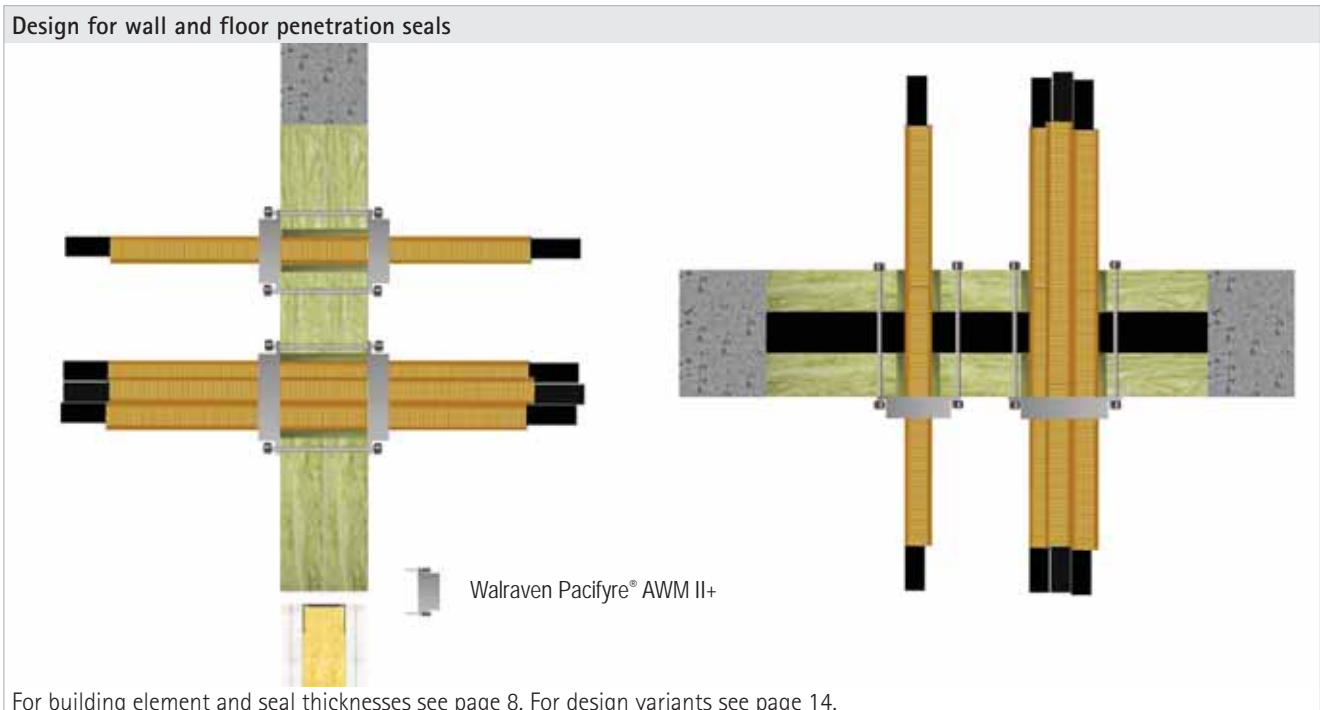
8.2.3 Electrical installation conduits made of plastic with fire protection collar Walraven Pacifyre® AWM II+

Always use the smallest collar fitting the diameter of the conduit or bundle of conduits.
(Distance between collar and conduit ≤ 15 mm).

Collars must be fastened to the seal with continuous threaded rods \varnothing M6–M8.

The ends of the conduits must be sealed on one side with Walraven Pacifyre® MWB-A ≥ 10 mm. Conduits without cables must be filled with mineral wool (≥ 10 mm) and sealed with Walraven Pacifyre® MWB-A (≥ 1 mm).

Bundles of conduits (minimum length on both sides of the seal 200 mm) must be fastened on both sides of the seal with for example self-adhesive tape or plastic cable ties after max. 100 mm.



Services	Dimensions [mm]	Fire protection collar Walraven Pacifyre® AWM II+	Fire resistance class	
			Wall	Floor
Conduits made of plastic, single	$\varnothing \leq 32$ (with/without cables $\varnothing \leq 21$)	on both sides in walls, on the lower side in floors	EI 120 U/U	EI 120 U/U
	$\varnothing \leq 63$ (with/without cables $\varnothing \leq 21$)		EI 90 U/C	EI 90 U/C
Conduits made of plastic, bundled	$\varnothing \leq 63$ bundled up to $\varnothing \leq 125$ (with/without cables $\varnothing \leq 21$)		EI 90 U/C	EI 90 U/C

Technical manual

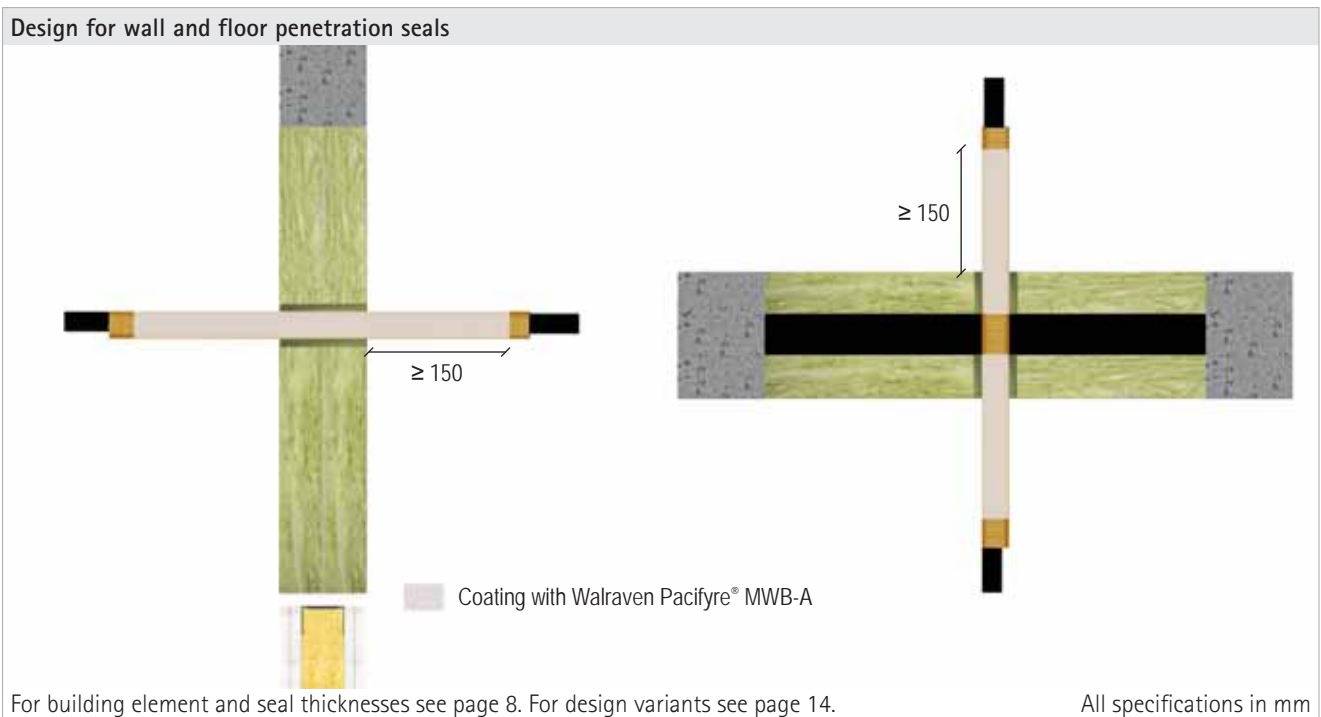
Walraven Pacifyre® MWB System 2 x 50 mm

8.2.4 Electrical installation conduits made of plastic with Walraven Pacifyre® MWB-A coating

Electrical installation conduits made of plastic must protrude at least 200 mm from the seal.

All conduits must be coated in the penetrated area (inside the mineral fibre boards) as well as on both sides of the seal at a length of ≥ 150 with Walraven Pacifyre® MWB-A (dry film thickness ≥ 1.0 mm).

The ends of the conduits must be sealed on one side with Walraven Pacifyre® MWB-A ≥ 10 mm. Conduits without cables must be filled with mineral wool (≥ 10 mm) and sealed with Walraven Pacifyre® MWB-A (≥ 1 mm).



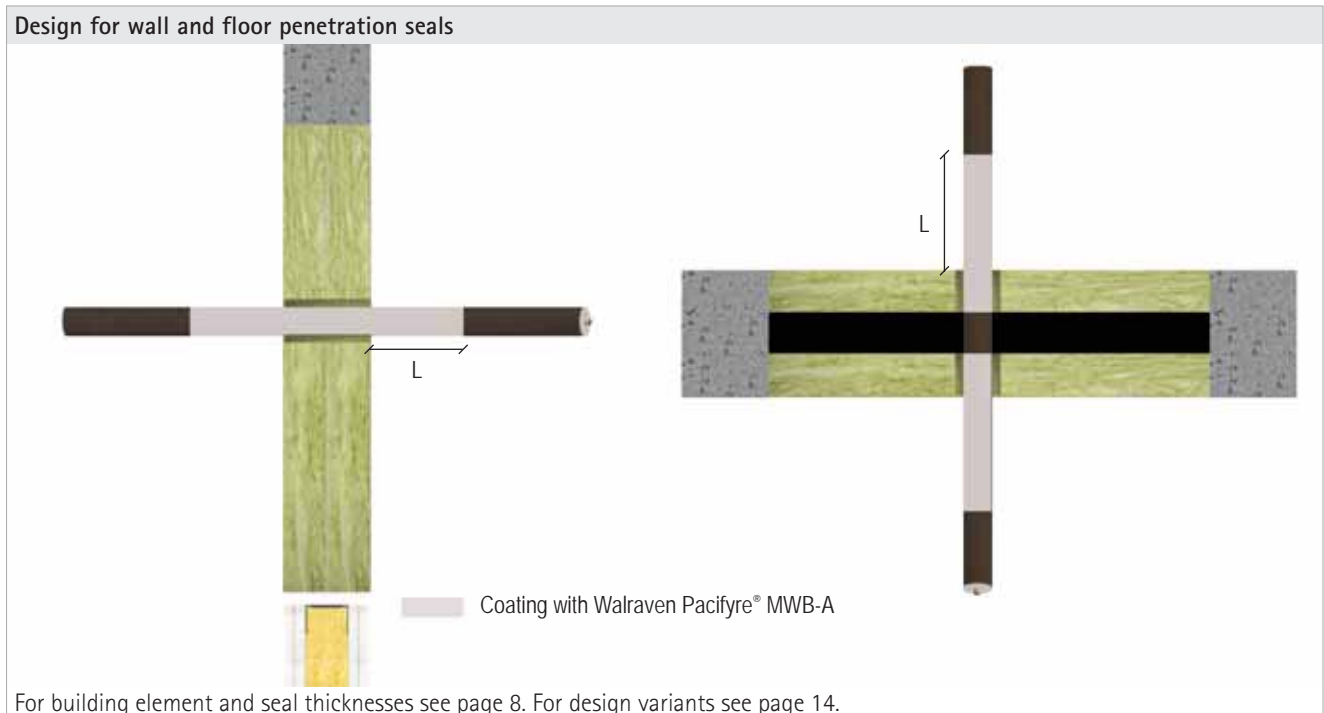
Service	Dimensions [mm]	Fire protection coating Walraven Pacifyre® MWB-A		Fire resistance class	
		Dry film thickness [mm]	Length of coating in front of seal L [mm]	Wall	Floor
Conduits made of plastic, single	$\varnothing \leq 32$ (with/without cables $\varnothing \leq 21$)	≥ 1.0	≥ 150	EI 90 U/C	EI 90 U/C

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Walraven Pacifyre® MWB System 2 x 50 mm

8.3 Coaxial cables and wave guides

In the penetrated area (inside the mineral fibre boards), all coaxial cables and wave guides must be coated with Walraven Pacifyre® MWB-A (dry film thickness ≥ 1.0 mm).



Service	Fire protection coating Walraven Pacifyre® MWB-A		Fire resistance class	
	Dry film thickness [mm]	Length of coating in front of seal L [mm]	Wall	Floor
CommScope Heliac $\varnothing \leq 51.1$ mm	≥ 1.0	≥ 100	EI 120 U/C	-
		≥ 200	EI 120 U/C	EI 120 U/C
≥ 100		≥ 200	EI 120 U/C	EI 120 U/C
		≥ 200	EI 120 U/C	EI 120 U/C
RFS Radiaflex $\varnothing \leq 28.5$ mm		≥ 200	EI 120 U/C	EI 120 U/C
RFS Radiaflex $\varnothing \leq 48.2$ mm		≥ 100	EI 120 U/C	-

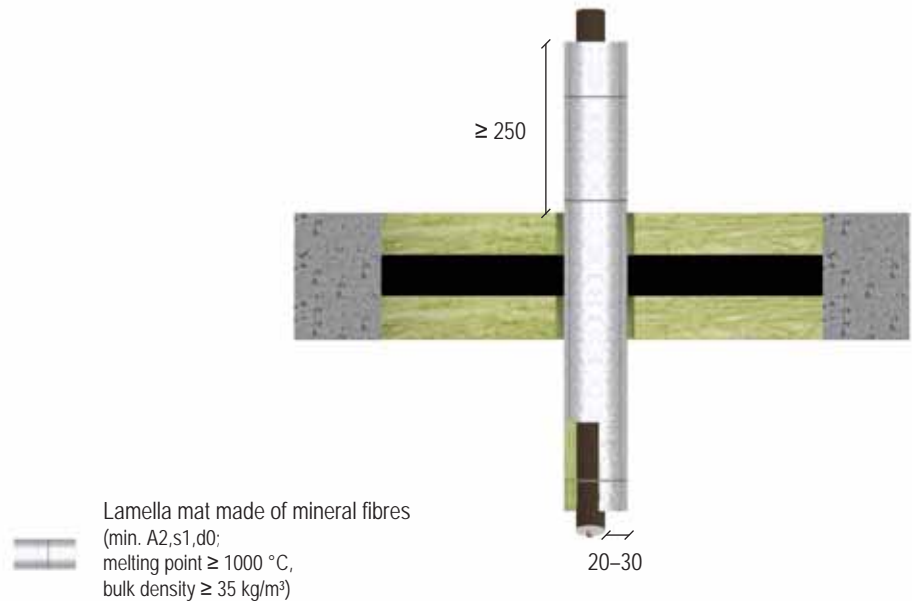
Technical manual

Walraven Pacifyre® MWB System 2 x 50 mm

8.3.1 Design with lamella mat

The lamella mat must be secured with winding wire against falling out.

Design for floor penetration seals



For building element and seal thicknesses see page 8. For design variants see page 14.

All specifications in mm

Service	Sectional insulation made of lamella mat		Fire resistance class	
	Length [mm]	Thickness [mm]	Wall	Floor
CommScope Heliac $\varnothing \leq 51.1$ mm	≥ 250	20-30	-	EI 120 U/C
RFS Cellflex $\varnothing \leq 50.3$ mm			-	EI 120 U/C
RFS Radiaflex $\varnothing \leq 28.5$ mm			-	EI 120 U/C

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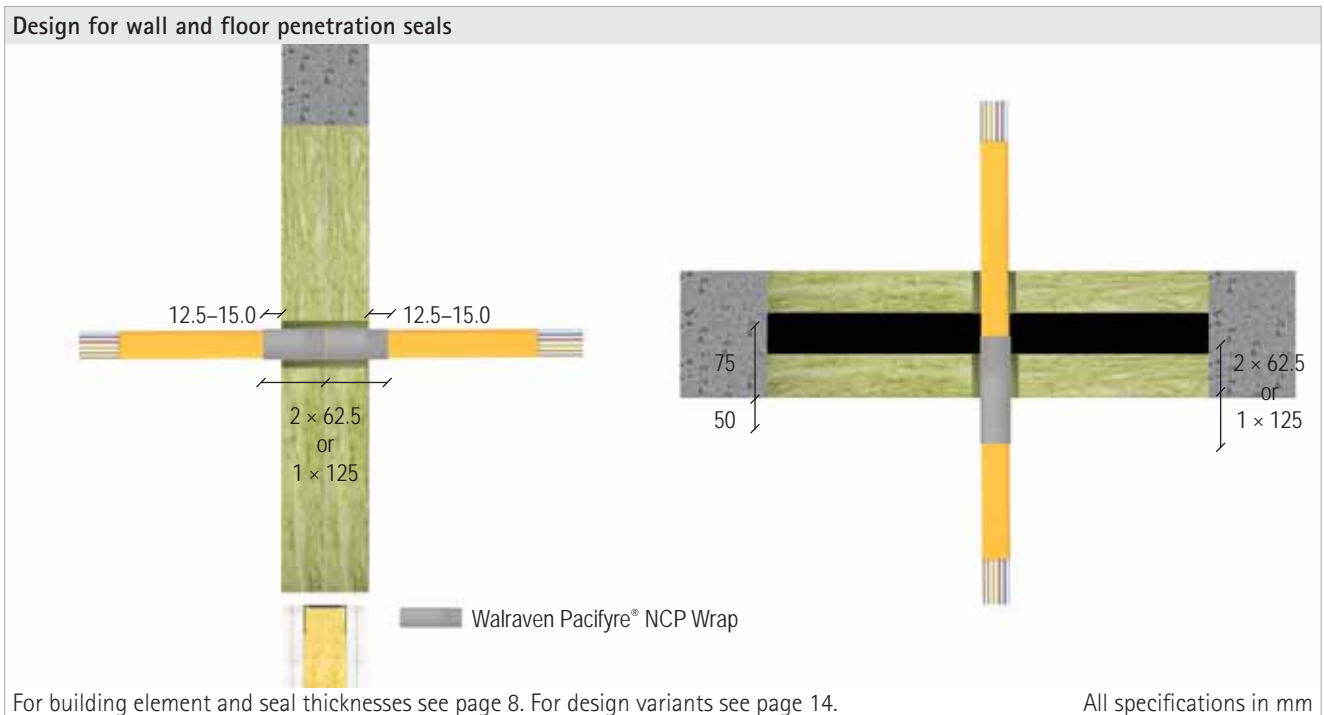
Walraven Pacifyre® MWB System 2 x 50 mm

8.4 Speedpipes

Speedpipes must be wrapped with the fire protection wrap Walraven Pacifyre® NCP Wrap.

The fire protection wrap Walraven Pacifyre® NCP Wrap is coated on one side and equipped with a protective film. The film must be removed before applying the wrap with the coated side facing inwards.

For easier installation the wrap can be secured against falling out with duct tape or winding wire.



Arrangement	Fire protection wrap Walraven Pacifyre® NCP Wrap	Fire resistance class	
		Wall	Floor
Bundle $\varnothing \leq 50$ mm Single $\varnothing \leq 14$ mm	1 x 125 or 2 x 62.5, 1 layer	EI 120 U/U	EI 120 U/U

Technical manual

Walraven Pacifyre® MWB System 2 x 50 mm

8.5 Combustible pipes

8.5.1 Design with fire protection collar Walraven Pacifyre® AWM II+

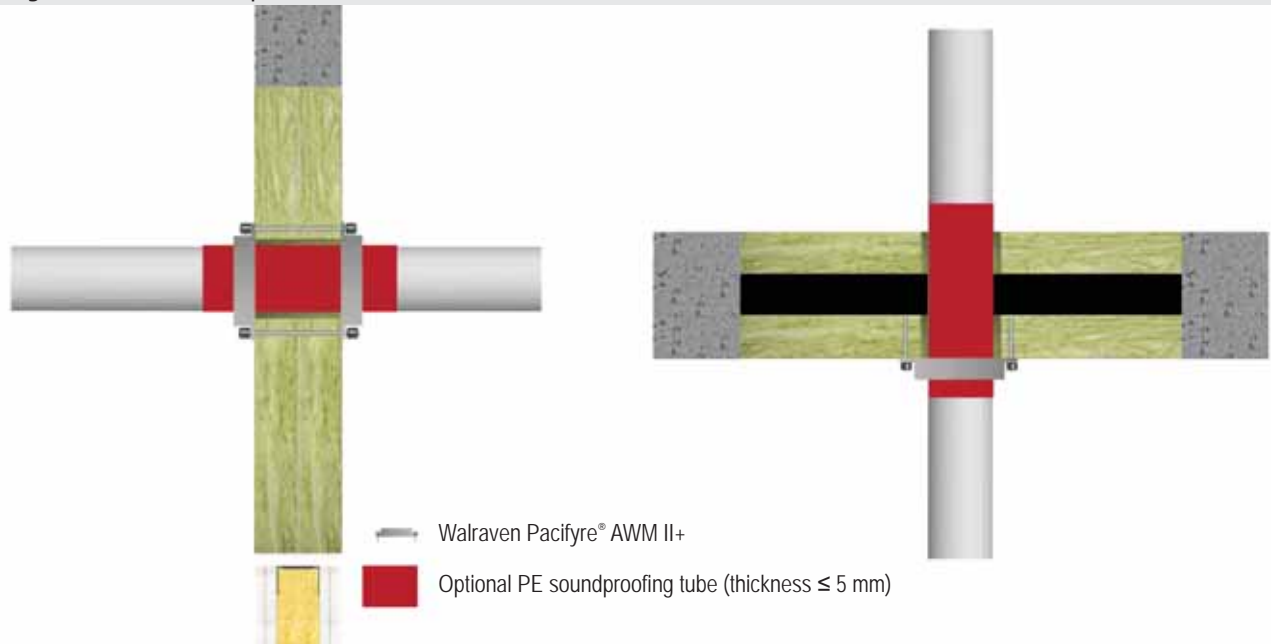
The fire protection collar must be attached on both sides in walls and on the lower side in floors. Always use the smallest fitting collar.

The collars must be fastened to the seal with the following coarse thread screws:

- Würth ASSY D (8 × 70 mm)
- HECO-TOPIX-plus (8 × 80 mm)
- SPAX T-STAR plus (8 × 80 mm)

or equivalent.

Design for wall and floor penetration seals



For building element and seal thicknesses see page 8. For design variants see page 14.

Technical manual

Walraven Pacifyre® MWB System 2 x 50 mm

Pipe material / type	Pipe outer Ø [mm]	Pipe wall thickness [mm]	Fire protection collar Walraven Pacifyre® AWM II+	Fire resistance class	
				Wall	Floor
PVC-U, PVC-C	32.0-50.0	1.8-5.6	on both sides in walls, on the lower side in floors	EI 90 U/U	EI 90 U/U
		1.8-8.4		EI 90 U/U	EI 90 U/U
	90.0	1.8-10.0		EI 90 U/U	EI 90 U/U
	110.0	1.8-12.3		EI 90 U/U	EI 90 U/U
		1.8		EI 90 U/U	EI 120 U/U
	125.0	2.5		EI 120 U/U	EI 120 U/U
		2.5-9.3		EI 120 U/U	-
	140.0-160.0	3.2-11.9		-	EI 90 U/U
		3.2		-	EI 120 U/U
		4.0-14.6		EI 90 U/U	-
PE-HD, ABS, SAN+PVC	32.0-50.0	1.8-4.6	on both sides in walls, on the lower side in floors	EI 90 U/U	EI 90 U/U
		4.6		EI 120 U/U	EI 90 U/U
	63.0-75.0	2.2-6.9		EI 90 U/U	EI 90 U/U
	75.0	3.8-4.5		EI 120 U/U	EI 90 U/U
	90.0-110.0	2.7-4.3		EI 120 U/U	EI 90 U/U
	90.0	2.4-8.2		EI 90 U/U	EI 90 U/U
	110.0	2.7-10.0		EI 90 U/U	EI 90 U/U
		3.1		EI 120 U/U	EI 90 U/U
	125.0	3.1-4.2		EI 120 U/U	EI 90 U/U
		4.0-14.6		EI 90 U/U	EI 90 U/U
140.0-160.0	4.0	EI 120 U/U	EI 90 U/U		
PP	32.0-50.0	1.8-4.6	on both sides in walls, on the lower side in floors	-	EI 90 U/U
		1.8		EI 90 U/U	EI 120 U/U
	63.0-75.0	2.2-5.2		EI 90 U/U	EI 90 U/U
		2.2-6.9		-	EI 90 U/U
		2.2		EI 90 U/U	EI 120 U/U
	90.0	2.4-7.3		EI 90 U/U	EI 90 U/U
		2.4-8.2		-	EI 90 U/U
		2.4		EI 90 U/U	EI 120 U/U
	110.0	2.7-10.0		EI 90 U/U	EI 90 U/U
		10.0		EI 120 U/U	EI 120 U/U
	125.0	3.1-11.4		-	EI 90 U/U
		3.1		EI 90 U/U	EI 120 U/U
	140.0-160.0	4.0-14.6		EI 90 U/U	EI 90 U/U

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Walraven Pacifyre® MWB System 2 x 50 mm

Pipe material / type	Pipe outer Ø [mm]	Fire protection collar Walraven Pacifyre® AWM II+	Fire resistance class	
			Wall	Floor
REHAU RAUPIANO LIGHT	≤ 110.0	on both sides in walls, on the lower side in floors	EI 120 U/U	EI 90 U/U
	≤ 160.0		EI 120 U/U	–
REHAU RAUSILENTO	≤ 110.0		EI 120 U/U	EI 90 U/U
	≤ 160.0		EI 120 U/U	–
REHAU RAUPIANO PLUS	≤ 160.0		EI 120 U/U	–
CONEL DRAIN	≤ 110.0		EI 120 U/U	EI 90 U/U
Geberit Silent-db20	≤ 110.0		EI 120 U/U	EI 90 U/U*
	≤ 160.0		EI 90 U/U	EI 90 U/U*
Geberit Silent-Pro	≤ 110.0		EI 120 U/U	EI 90 U/U
	≤ 160.0		EI 120 U/U	EI 90 U/U*
Geberit Silent-PP	≤ 110.0		EI 120 U/U	EI 90 U/U
	≤ 160.0		EI 120 U/U	EI 90 U/U*
POLO-KAL NG / POLO-KAL XS	≤ 110.0		EI 120 U/U	EI 90 U/U
	≤ 160.0		EI 120 U/U	EI 90 U/U
POLO-KAL 3S	≤ 110.0		EI 120 U/U	EI 120 U/U*
Wavin AS	≤ 160.0		EI 90 U/U	–
Wavin AS+	≤ 160.0		EI 90 U/U	–
Wavin SiTech+	≤ 160.0		EI 120 U/U	EI 90 U/U
GF Silenta Premium	≤ 110.0		EI 120 U/U	EI 90 U/U
	≤ 160.0		EI 120 U/U	–
Hakan Silenta Premium	≤ 110.0		EI 120 U/U	EI 90 U/U
	≤ 160.0		EI 120 U/U	–
Valsir Triplus	≤ 160.0		EI 120 U/U	EI 90 U/U
Pipelife MASTER 3 PLUS	≤ 160.0		EI 120 U/U	–
KE KELIT PHONEX AS	≤ 160.0	EI 90 U/U	–	

* Available on request

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Walraven Pacifyre® MWB System 2 x 50 mm

8.5.2 Design with FEF insulation and fire protection collar Walraven Pacifyre® AWM II+

The fire protection collar must be attached on both sides in walls and on the lower side in floors. Always use the smallest fitting collar.

The collars must be fastened to the seal with the following coarse thread screws:

- Würth ASSY D (8 x 70 mm)
- HECO-TOPIX-plus (8 x 80 mm)
- SPAX T-STAR plus (8 x 80 mm)

or equivalent.

Design for wall and floor penetration seals



For building element and seal thicknesses see page 8. For design variants see page 14.

Wall					
Pipe material	Pipe outer Ø [mm]	Pipe wall thickness [mm]	FEF insulation	Fire protection collar Walraven Pacifyre® AWM II+	Fire resistance class
			Thickness [mm]		
PP	32.0–50.0	1.8–4.6	6.0–32.0	on both sides	EI 120 U/U
	63.0–75.0	2.2–6.8			EI 120 U/U
	90.0–110.0	2.7–10.0			EI 120 U/U

Floor					
Pipe material	Pipe outer Ø [mm]	Pipe wall thickness [mm]	FEF insulation	Fire protection collar Walraven Pacifyre® AWM II+	Fire resistance class
			Thickness [mm]		
PP	32.0–50.0	1.8	6.0	on the lower side	EI 120 U/U
			6.0–32.0		EI 90 U/U
	63.0–75.0	2.2	6.0		EI 120 U/U
			EI 90 U/U		
	90.0–110.0	2.7	6.0–32.0		EI 120 U/U

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Walraven Pacifyre® MWB System 2 x 50 mm

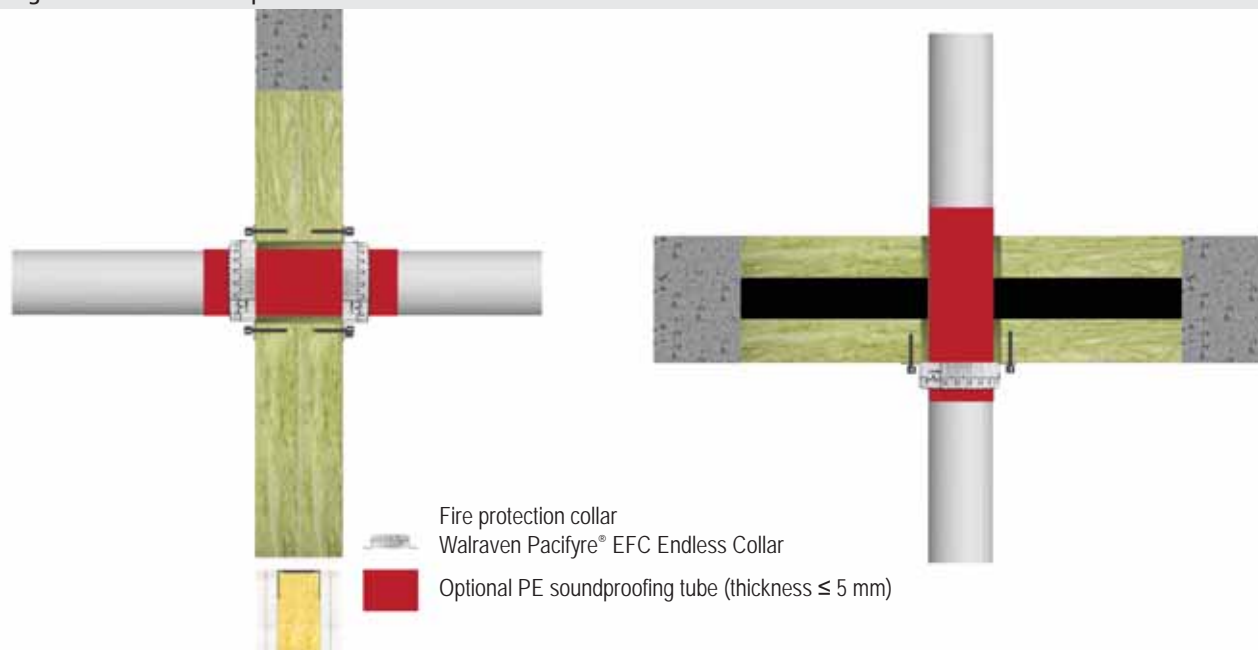
8.5.3 Design with fire protection collar Walraven Pacifyre® EFC Endless Collar

The fire protection collar must be attached on both sides in walls and on the lower side in floors. Always use the smallest fitting collar.

The collars must be fastened to the seal with the following coarse thread screws or coil spring fasteners:

- Würth ASSY D (8 × 70 mm)
 - HECO-TOPIX-plus (8 × 80 mm)
 - SPAX T-STAR plus (8 × 80 mm)
 - Rockwool Conlit Screw
 - Bohl Fireprotect Screw
- or equivalent.

Design for wall and floor penetration seals



For building element and seal thicknesses see page 8. For design variants see page 14.

Pipe material	Pipe outer Ø [mm]	Pipe wall thickness [mm]	Walraven Pacifyre® EFC Endless Collar	Fire resistance class	
				Wall	Floor
PVC-U, PVC-C	40.0-50.0	1.8-5.6	on both sides in walls, on the lower side in floors	-	EI 120 U/U*
		2.0-5.6		EI 90 U/U*	-
	63.0-75.0	1.9-7.0		EI 90 U/U*	-
		2.1-5.1		-	EI 120 U/U*
	90.0-110.0	1.8-9.0		EI 90 U/U*	-
		2.6-4.3		-	EI 120 U/U*
	125.0	2.3-9.8		EI 90 U/U*	-
		2.8-4.0		-	EI 120 U/U*
	140.0	3.0-3.6		-	EI 120 U/U*
	140.0-160.0	3.2-11.9		EI 90 U/U*	-
160.0	3.2	-	EI 120 U/U*		

* Fastened with coarse thread screws Würth ASSY D, HECO-TOPIX-plus or SPAX T-STAR plus.

** Fastened with coil spring fasteners Rockwool Conlit Screw or Bohl Fireprotect Screw.

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Walraven Pacifyre® MWB System 2 x 50 mm

Pipe material / type	Pipe outer Ø [mm]	Pipe wall thickness [mm]	Walraven Pacifyre® EFC Endless Collar	Fire resistance class	
				Wall	Floor
PE-HD, ABS, SAN+PVC	40.0–50.0	1.8–4.6	on both sides in walls, on the lower side in floors	EI 120 U/U*	–
		4.6		–	EI 90 U/U*
	63.0–75.0	2.2–3.8		EI 90 U/U*	–
		3.8		–	EI 90 U/U*
	90.0	2.4–3.3		EI 90 U/U*	–
		2.7–3.4		–	EI 90 U/U*
110.0	2.7	EI 90 U/U*		EI 90 U/U*	
PP	40.0–50.0	1.8–4.6		–	EI 120 U/U*
	63.0–75.0	2.2–6.8		–	EI 90 U/U*
	63.0	3.8–6.8		–	EI 120 U/U*
	75.0	5.2–6.8		–	EI 120 U/U*
	90.0–110.0	2.7		EI 120 U/U*	–
		2.7–10.0	–	EI 90 U/U*	
	90.0	7.3–10.0	–	EI 120 U/U*	
	110.0	10.0	–	EI 120 U/U*	
POLO-KAL NG / POLO-KAL XS	90.0	3.0	EI 90 U/U*	–	
	110.0	3.4	EI 120 U/U**	–	
			EI 90 U/U*	–	
			EI 120 U/U**	–	
125.0	3.9	EI 120 U/U**	–		
160.0	4.9	EI 120 U/U**	–		
REHAU RAUPIANO PLUS	75.0	1.9	EI 90 U/U*	EI 120 U/U*	
	90.0	2.2	EI 90 U/U*	EI 120 U/U*	
	110.0	2.7	EI 120 U/U**	–	
	125.0	3.1	EI 120 U/U**	–	
	160.0	3.9	EI 120 U/U**	–	
Geberit Silent-PP	32.0	2.0	EI 120 U/U**	EI 90 U/U*, **	
	50.0	2.0	EI 120 U/U**	EI 90 U/U*, **	
	75.0	2.6	EI 120 U/U**	–	
	90.0	3.1	EI 90 U/U*	–	
	110.0	3.6	EI 120 U/U**	–	
			EI 90 U/U*	–	
			EI 120 U/U**	–	

* Fastened with coarse thread screws Würth ASSY D, HECO-TOPIX-plus or SPAX T-STAR plus.

** Fastened with coil spring fasteners Rockwool Conlit Screw or Bohl Fireprotect Screw.

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Walraven Pacifyre® MWB System 2 x 50 mm

Pipe material / type	Pipe outer Ø [mm]	Pipe wall thickness [mm]	Walraven Pacifyre® EFC Endless collar	Fire resistance class	
				Wall	Floor
Wavin SiTech+	32.0	2.0	on both sides in walls, on the lower side in floors	EI 90 U/U*	EI 90 U/U*
				EI 120 U/U**	EI 90 U/U**
	50.0	2.1		EI 90 U/U*	EI 90 U/U*
				EI 120 U/U**	EI 90 U/U**
	75.0	2.6		EI 90 U/U*	–
	90.0	3.1		EI 90 U/U*	–
110.0	3.6	EI 90 U/U*	–		

* Fastened with coarse thread screws Würth ASSY D, HECO-TOPIX-plus or SPAX T-STAR plus.

** Fastened with coil spring fasteners Rockwool Conlit Screw or Bohl Fireprotect Screw.

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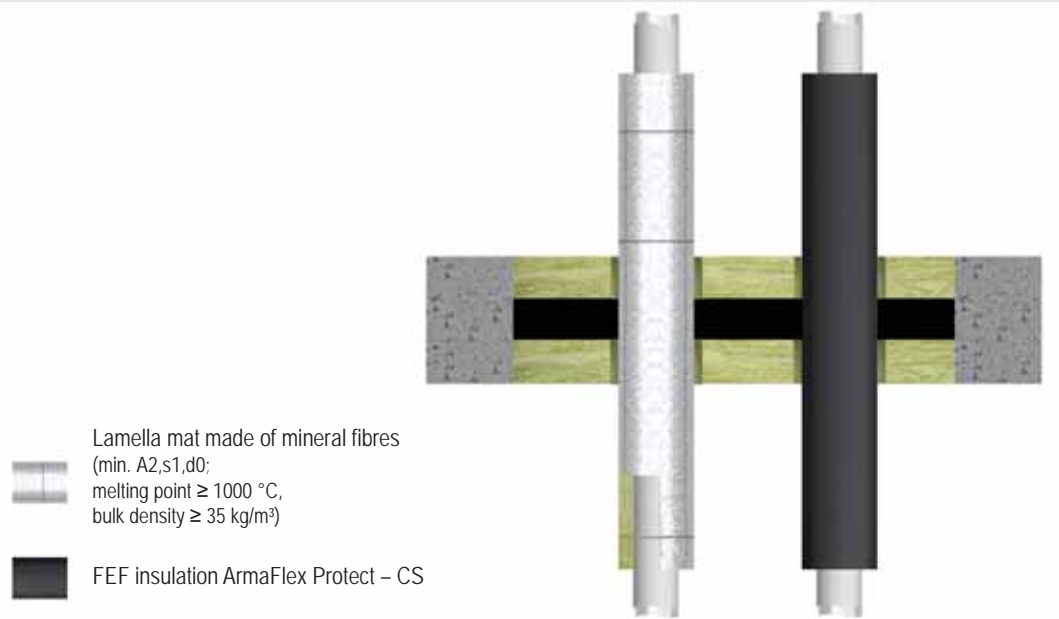
Walraven Pacifyre® MWB System 2 x 50 mm

8.6 Multilayer pipes

8.6.1 Design with FEF insulation ArmaFlex Protect or lamella mat

The lamella mat must be secured with winding wire against falling out.

Design for floor penetration seals



For building element and seal thicknesses see page 8. For design variants see page 14.

Floor					
Service		Insulation			Fire resistance class
Pipe outer Ø [mm]	Pipe wall thickness [mm]	Type	Length L [mm]	Thickness S [mm]	
Henco					
≤ 12	≥ 1.6	lamella mat	≥ 250	≥ 20	EI 90 U/C
		ArmaFlex Protect	≥ 240	≥ 13	EI 90 U/C
≤ 32	≥ 3.0	lamella mat	≥ 250	≥ 20	EI 90 U/C
		ArmaFlex Protect	≥ 240	≥ 13	EI 90 U/C
≤ 63	≥ 4.5	lamella mat	≥ 250	≥ 30	EI 90 U/C
		ArmaFlex Protect	≥ 240	$\geq 26 (2 \times 13)$	EI 90 U/C

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Walraven Pacifyre® MWB System 2 x 50 mm

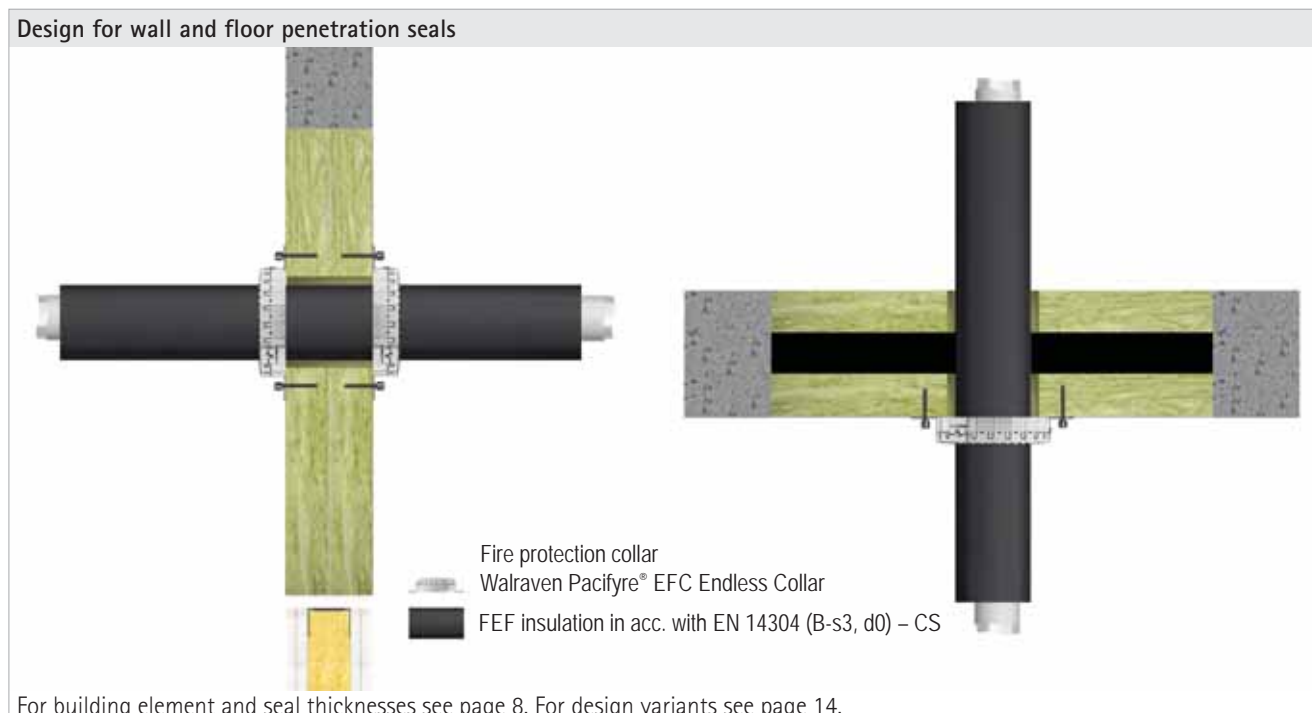
8.6.2 Design with fire protection collar Walraven Pacifyre® EFC Endless Collar and FEF insulation

The fire protection collar must be attached on both sides in walls and on the lower side in floors. Always use the smallest fitting collar.

The collars must be fastened to the seal with the following coarse thread screws or coil spring fasteners:

- Würth ASSY D (8 x 70 mm)
- HECO-TOPIX-plus (8 x 80 mm)
- SPAX T-STAR plus (8 x 80 mm)

or equivalent.



For building element and seal thicknesses see page 8. For design variants see page 14.

Wall					
Service		Insulation	Walraven Pacifyre® EFC		Fire resistance class
Pipe outer Ø [mm]	Pipe wall thickness [mm]	Thickness [mm]	Installation	Layers	
FRÄNKISCHE alpex L, FRÄNKISCHE alpex F50					
16	2.0	8.0–30.0	on both sides	2	EI 120 U/C
32		9.0–11.5			EI 120 U/C

Floor					
Service		Insulation	Walraven Pacifyre® EFC		Fire resistance class
Pipe outer Ø [mm]	Pipe wall thickness [mm]	Thickness [mm]	Installation	Layers	
FRÄNKISCHE alpex L, FRÄNKISCHE alpex F50					
16	2.0	9.0–38.0	on the lower side	2	EI 90 U/C
20					EI 90 U/C
26					EI 90 U/C
32	3.0	10.0–38.0			EI 90 U/C
40					EI 90 U/C
50					EI 90 U/C
63	4.5	20.0–38.0			EI 90 U/C
75	5.0		EI 90 U/C		

Technical manual

Walraven Pacifyre® MWB System 2 x 50 mm

8.6.3 Design with pipe shells made of mineral fibres



Pipe outer Ø [mm]	Insulation thickness [mm]	Fire resistance class	
		Wall	Floor
Geberit Mepla			
16	20-30	EI 120 U/C	EI 120 U/C
20		EI 120 U/C	EI 120 U/C
26	20-40	EI 120 U/C	EI 120 U/C
32		EI 120 U/C	EI 120 U/C
40	20-50	EI 120 U/C	EI 120 U/C
50		EI 120 U/C	EI 120 U/C
63	20-60	EI 120 U/C	EI 120 U/C
75	20-80	EI 120 U/C	EI 120 U/C

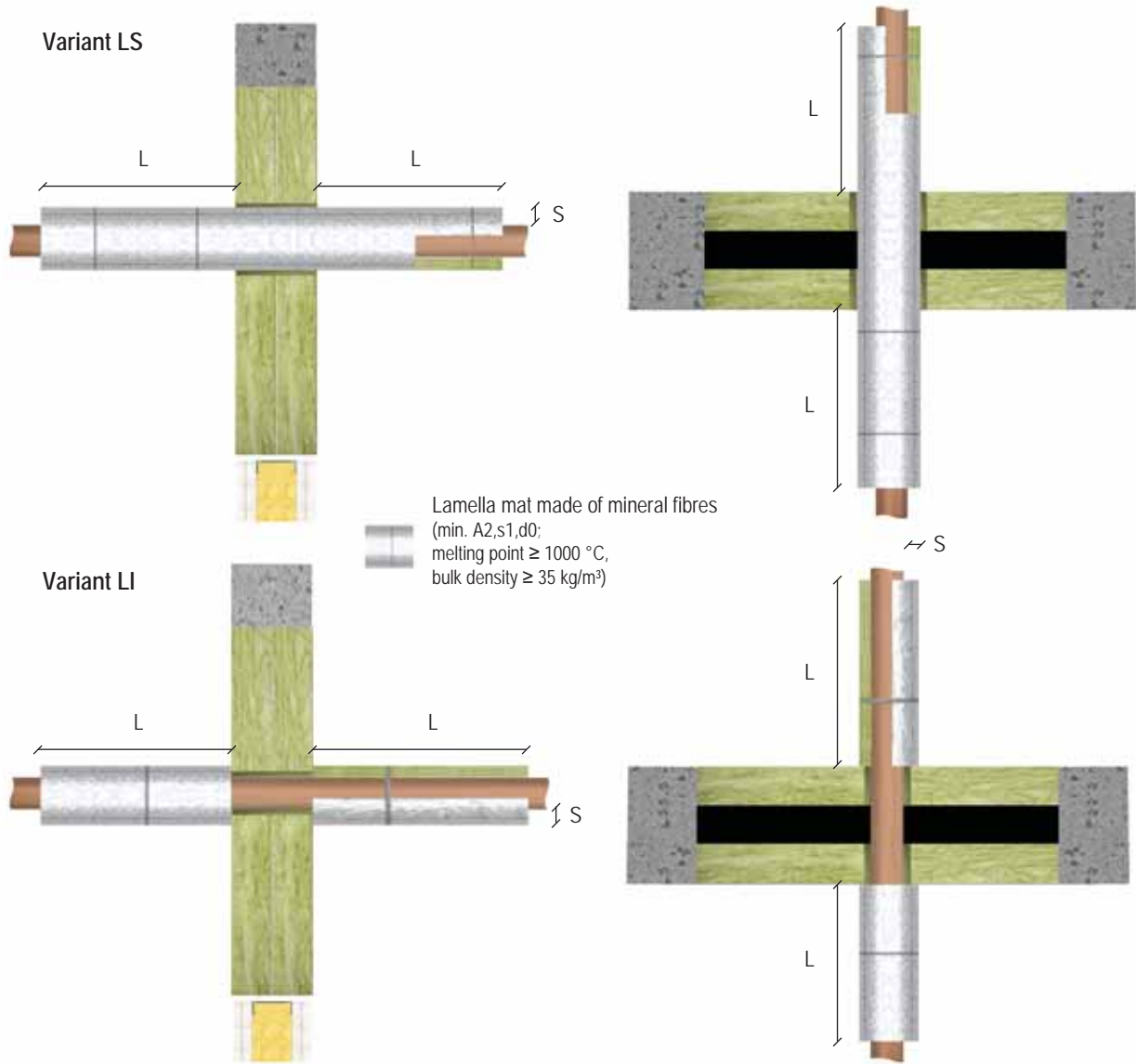
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8.7 Non-combustible pipes

8.7.1 Design with lamella mat

Design for wall and floor penetration seals



For building element and seal thicknesses see page 8. For design variants see page 14.

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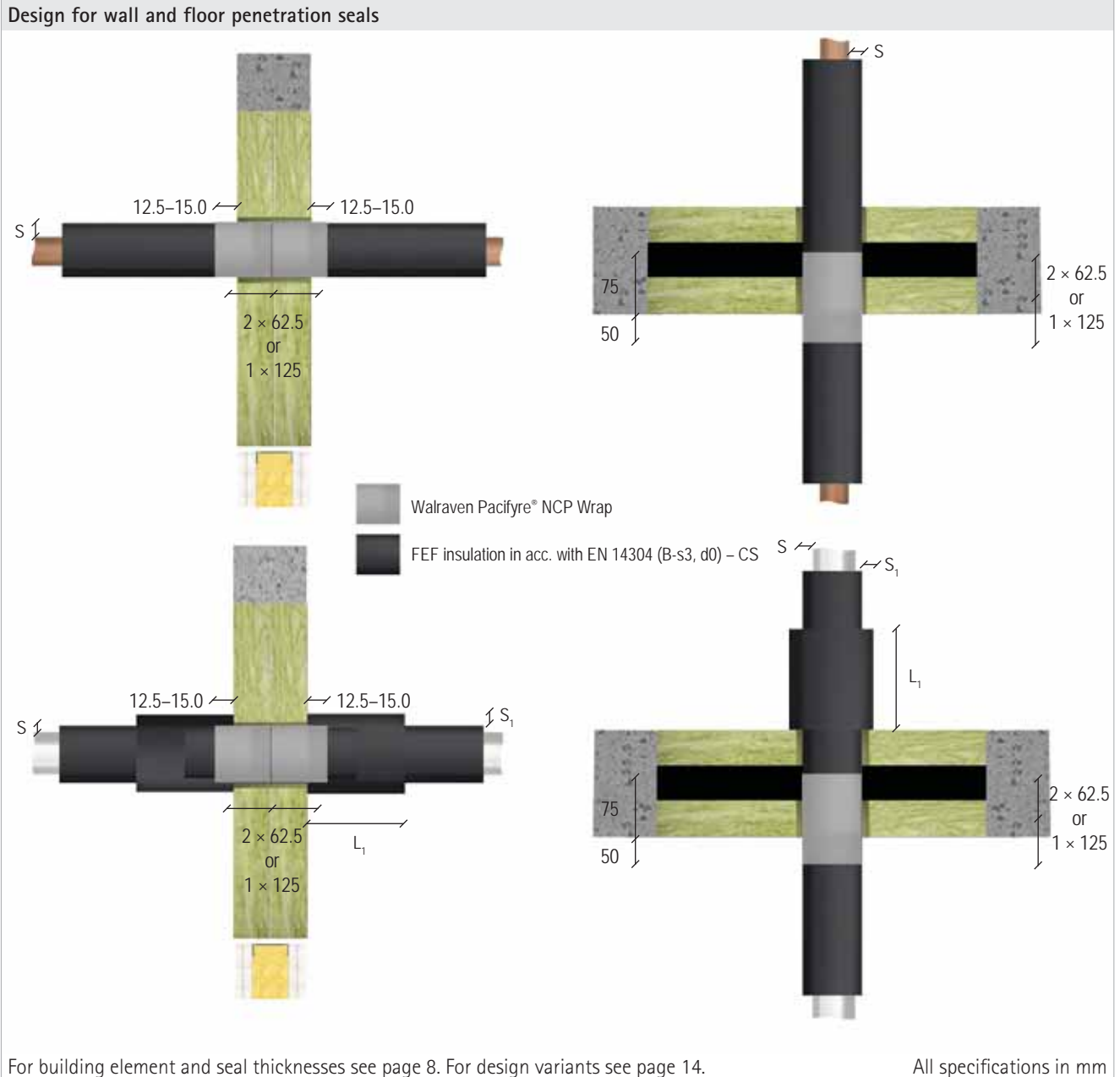
Wall				
Service		Mineral fibre lamella mat		Fire resistance class
Pipe outer Ø [mm]	Pipe wall thickness [mm]	Length L [mm]	Thickness S [mm]	
Copper, steel, stainless steel or cast iron				
≤ 22.0	0.6-14.2	≥ 450 on both sides	20-100	EI 120 U/C
> 22.0 - ≤ 60.0		≥ 200 on both sides	30-100	EI 120 U/C
> 60.0 - ≤ 88.9		≥ 450 on both sides	30-100	EI 120 U/C
Steel, stainless steel or cast iron				
≤ 42.0	1.8-14.2	≥ 200 on both sides	30-100	EI 120 U/C
> 42.0 - ≤ 114.3	1.8/3.2-14.2	≥ 450 on both sides	30-100	EI 120 U/C
> 114.3 - ≤ 159.0	3.2/4.0-14.2	≥ 1200 on both sides	100	EI 120 U/C
> 114.3 - ≤ 219.1	3.2/4.5-14.2	≥ 1200 on both sides	30-100	EI 90 U/C

Floor				
Service		Mineral fibre lamella mat		Fire resistance class
Pipe outer Ø [mm]	Pipe wall thickness [mm]	Length L [mm]	Thickness S [mm]	
Copper, steel, stainless steel or cast iron				
≤ 22.0	0.6-14.2	≥ 425 on both sides	20-100	EI 120 U/C
> 22.0 - ≤ 42.0		≥ 175 on both sides	30-100	EI 120 U/C
		≥ 425 on both sides	30-100	EI 120 U/C
		≥ 675 on both sides	30-100	EI 90 U/C
> 42.0 - ≤ 88.9				
Steel, stainless steel or cast iron				
≤ 42.0	1.8-14.2	≥ 125 on both sides	30-100	EI 120 U/C
> 42.0 - ≤ 114.3	1.8/3.2-14.2	≥ 425 on both sides	30-100	EI 120 U/C
> 114.3 - ≤ 159.0	3.2/4.0-14.2	≥ 1175 on both sides	30-100	EI 120 U/C
> 114.3 - ≤ 219.1	3.2/4.5-14.2	≥ 1175 on both sides	30	EI 120 U/C
		≥ 1175 on both sides	30-100	EI 90 U/C

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8.7.2 Design with FEF insulation and fire protection wrap Walraven Pacifyre® NCP Wrap



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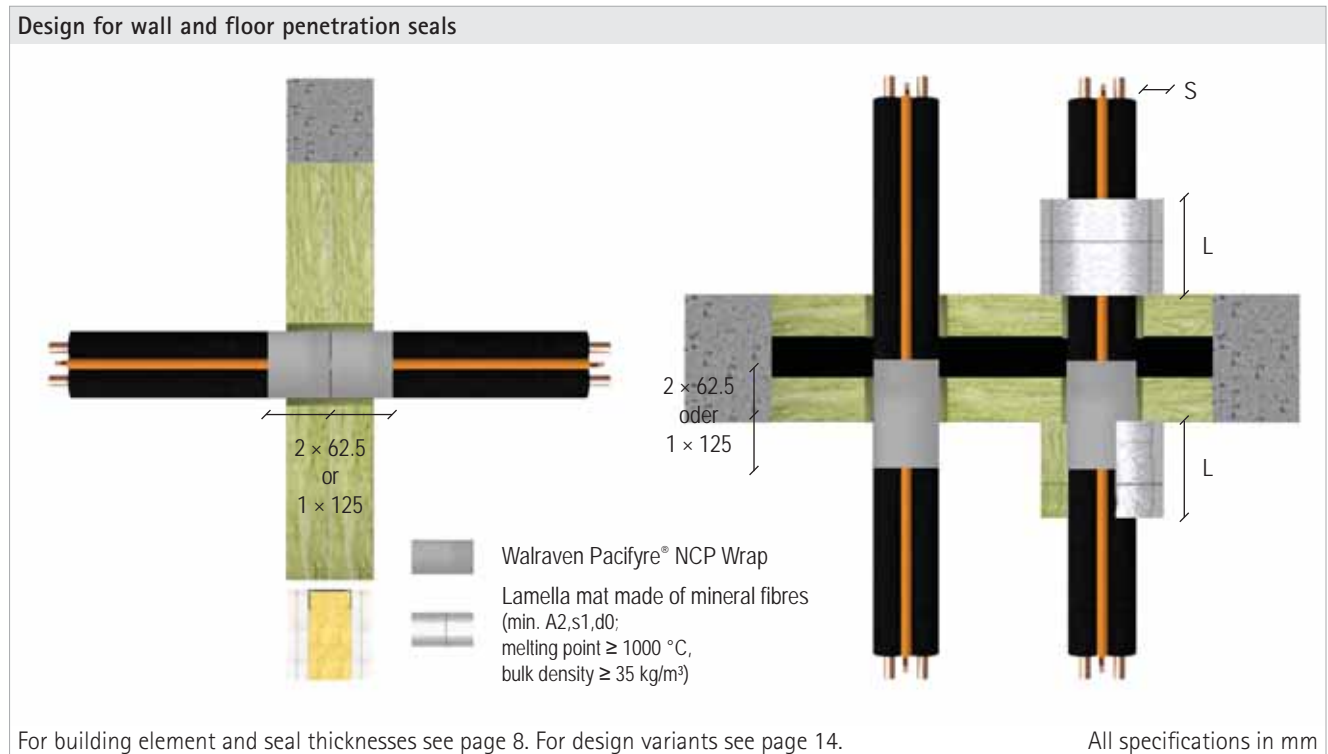
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Wall							
Service		Section insulation made of FEF	Protective insulation made of FEF		Fire protection wrap Walraven Pacifyre® NCP Wrap		Fire resistance class
Pipe outer Ø [mm]	Pipe wall thickness [mm]	Thickness S [mm]	Length L ₁ [mm]	Thickness S ₁ [mm]	Number of wraps [n]	Number of layers [n]	
Copper, steel, stainless steel or cast iron							
≤ 15.0	0.8-14.2	10.0	-	-	1 × 125 or 2 × 62.5	1	EI 120 U/C
> 15.0 – ≤ 54.0		19.0-38.0				2	EI 120 U/C
> 54.0 – ≤ 88.9		25.0				2	EI 120 U/C
≤ 42.0		10.0				1	EI 90 U/C
> 42.0 – ≤ 88.9		19.0-38.0				2	EI 90 U/C
Steel, stainless steel or cast iron							
≤ 15.0	0.8-14.2	10.0-38.0	-	-	1 × 125 or 2 × 62.5	2	EI 120 U/C
> 15.0 – ≤ 88.9		19.0-38.0				2	EI 120 U/C
> 88.9 – ≤ 114.3		19.0-38.0	250	19		2	EI 120 U/C
> 114.3 – ≤ 159.0		25.0-38.0	250	19		2	EI 120 U/C
> 159.0 – ≤ 219.1		25.0-38.0	600	38		2	EI 120 U/C
Floor							
Service		Section insulation made of FEF	Protective insulation made of FEF		Fire protection wrap Walraven Pacifyre® NCP Wrap		Fire resistance class
Pipe outer Ø [mm]	Pipe wall thickness [mm]	Thickness S [mm]	Length L ₁ [mm]	Thickness S ₁ [mm]	Number of wraps [n]	Number of layers [n]	
Copper, steel, stainless steel or cast iron							
≤ 42.0	0.6-14.2	9.0-40.0	-	-	1 × 125 or 2 × 62.5	2	EI 90 U/C
> 42.0 – ≤ 60.0		10.0				1	EI 90 U/C
		13.0-40.0				2	EI 90 U/C
≤ 60.0		13.0-40.0				2	EI 120 U/C
> 60.0 – ≤ 88.9		25.0				2	EI 120 U/C
	19.0-38.0	2	EI 90 U/C				
Steel, stainless steel or cast iron							
≤ 159.0	0.6-14.2	25.0-38.0	250	25	1 × 125 or 2 × 62.5	2	EI 90 U/C
> 159.0 – ≤ 219.1			250	38			EI 90 U/C

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8.8 HVAC split line combinations



Combination	Fire protection wrap Walraven Pacifyre® NCP Wrap		Mineral fibre lamella mat		Fire resistance class	
	Number of wraps [n]	Number of layers [n]	Length L [mm]	Thickness S [mm]	Wall	Floor
Copper pipe ≤ 2 × Ø 18 mm, + 9 mm PE foam, + 1 pipe PVC-U Ø ≤ 25.0 × 1.5 mm, + ≤ 3 × cables Ø ≤ 14.0 mm	1 × 125 or 2 × 62.5	2	-	-	EI 120	EI 120
Copper pipe ≤ 2 × Ø 22 mm, + 9 mm PE foam, + 1 pipe PVC-U Ø ≤ 25.0 × 1.5 mm, + ≤ 2 × cables Ø ≤ 21.0 mm	1 × 125 or 2 × 62.5	2	≥ 250	≥ 30	-	EI 90

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9. Installation steps

1. Clean the aperture edge. When installing in sandwich panel walls, attach L profiles with the dimensions 30 x 30 x 2 mm alongside the aperture edge on both sides of the seal.



2. Mask the aperture with crepe tape on all sides, keeping 20 mm distance to the edge. Coat the cables with Walraven Pacifyre® MWB-A.



3. Apply the required fire protection wraps to non-combustible pipes.



4. Cut mineral fibre boards to size (make cut-outs for the installations).



5. Coat the edges of the mineral fibre boards with Walraven Pacifyre® MWB-A and firmly place boards in position.



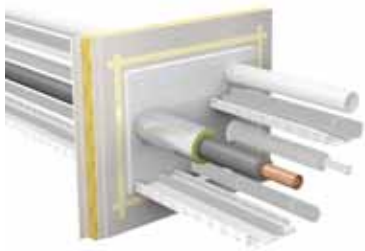
6. Seal the remaining opening/joints with mineral fibre or fill them with Walraven Pacifyre® MWB-A.



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7. Apply lamella mat insulation to pipes, if necessary.



8. Final coating with Walraven Pacifyre® MWB-A. Install pipe collars if necessary.



9. If required, label the penetration seal.
Fill out the label neatly and attach it firmly next to/above (not on) the penetration seal.



Find out how we can support you

Would you like to find out more about any of the solutions described in this technical manual?
Or would you like to discuss how we could help you find the best possible solution for your project?
Get in touch today!

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