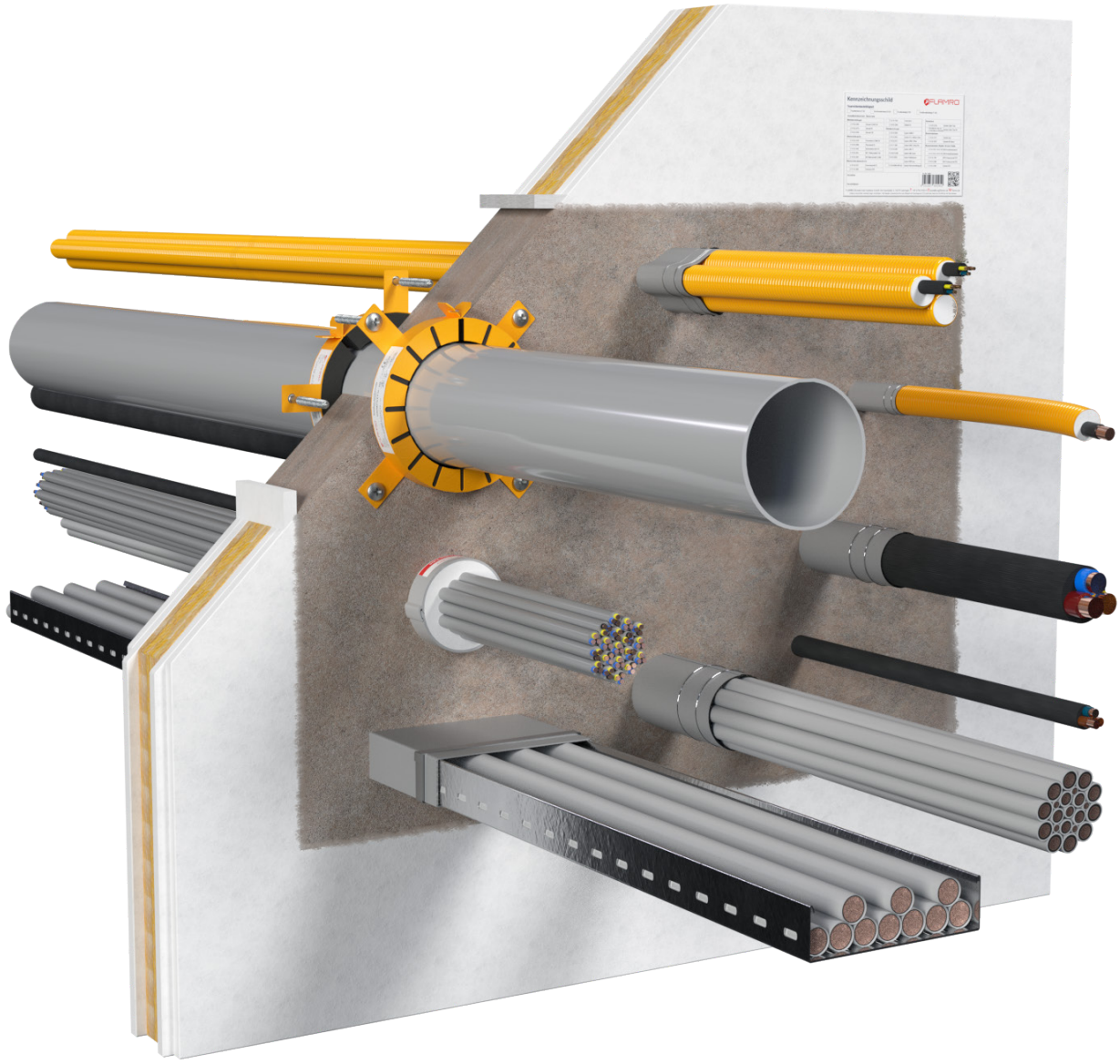
Novasit BM for plasterboard walls

Penetration sealing system made of mortar

Fibre-free cable penetration sealing system made of special mortar for electrical cables and lines of all types as well as electrical installation conduits

Fire resistance class: maximum EI 120 in accordance with EN 13501-2 as per ETA-16/0132



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Installation instructions Rev.: 23.06

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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, flamro 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.
	Use protective mask with P2 particle filter in case of short-term or low level exposure. For intensive or prolonged exposure use a breathing apparatus with independent air supply. Use breathing protection in compliance with international/national standards.
	Use chemically resistant gloves. Recommended materials: butyl rubber, nitrile rubber, fluorinated rubber, PVC.

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1.3 Field of application

The cable penetration sealing system Novasit BM in plasterboard walls using NOVASIT BM mortar to close the wall opening belongs to the product type „mortar“ in accordance with EAD 350454-00-1104 and is assessed and evaluated accordingly.

The fire protection mortar NOVASIT BM is classified as a product for use in penetration seals in accordance with ETA-16/0132.

Reaction to fire

NOVASIT BM is classified as A1 in accordance with EN 13501-1.

Fire resistance

tested	covered			
	U/U	C/U	U/C	C/C
U/U	✓	✓	✓	✓
C/U	–	✓	–	✓
U/C	–	✓	✓	✓
C/C	–	–	–	✓

The fire resistance class of the seal is reduced to the fire resistance class of the penetrating service with the lowest fire resistance class.

Release of dangerous substances

The components of Novasit BM do not contain any substances identified as dangerous in the list of the European Commission.

Durability and serviceability

The fire protection mortar NOVASIT BM meets the requirements of Z_1 in accordance with EAD 350454-00-1104.

Novasit BM can be subjected to the conditions of interior rooms with and without exposure to moisture without substantial changes to the fire protection characteristics being expected.

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1.4 Building elements

Plasterboard walls with steel substructure

In stud design and double-sided cladding with at least 2 layers of 12.5 mm cement or gypsum-bound building boards with a reaction to fire of class A1 or A2 in accordance with EN 13501-1.

The walls must be classified for the required fire resistance rating in accordance with EN 13501-2.

Plasterboard walls with wood substructure

In stud design and double-sided cladding with at least 2 layers of 12.5 mm cement or gypsum-bound building boards with a reaction to fire of class A1 or A2 in accordance withEN 13501-1.

The distance between the opening and the studs and transoms must be ≥ 100 mm and the cavities between the cladding of the wall, studs and transoms and the opening reveal must be tightly sealed to a depth of ≥ 100 mm with mineral wool, reaction to fire class A1 or A2 in accordance with EN 13501-1.

The walls must be classified for the required fire resistance rating in accordance with EN 13501-2.

Cladding of reveal 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 in accordance with EN 13501-1.

Solid walls

Made of masonry, concrete, reinforced concrete or aerated concrete with a density of ≥ 600 kg/m³.

The walls must be classified for the desired fire resistance time in accordance with EN 13501-2.

2. Fire resistance classes

Cables, cable bundles, plastic conduits and cable tubes without additional measures	Fire resistance class	Source[1]
Cables Ø ≤ 21 mm	**EI 90 / E 120**	**1**
Cable bundles Ø ≤ 60 mm with cables Ø ≤ 21 mm	**EI 90**	**1**
Plastic conduits Ø ≤ 16 mm	**EI 90**	**1**
CT Cable Tubes (length ≥ 150 mm)	**EI 90**	**1**

Cables, cable bundles and cable trays with fire protection wrap DG-CR 1.5	Measure	Fire resistance class	Source[1]
Cables Ø ≤ 50 mm	2× 2 layers, 125 mm outside seal	**EI 90 / E 120**	**1**
Cables Ø ≤ 80 mm	2× 2 layers, 125 mm outside seal	**EI 90 / E 120**	**1**
Cable bundles Ø ≤ 150 mm with cables Ø 21	2× 1 layer, 125 mm outside seal	**EI 120**	**1**

Electrical installation conduits (EIC) with fire protection wrap DG-CR 1.5 – wrap width 125 mm	Measure	Fire resistance class	Source[1]
EIC Ø ≤ 32 mm	2× 2 layers, 50 mm inside seal / 75 mm outside seal	**EI 120**	**1**
EIC bundles Ø ≤ 100 mm (single conduit Ø ≤ 32 mm)			

[1] 1 → 1883.1./14/Z00NP 2 → ETA 22/0051

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Combustible pipes			
Combustible pipes with/without 5 mm PE acoustic insulation and with fire protection collar AWM II / Variant N II A	**Measure**	**Fire resistance class**	**Source[1]**
PVC-U, Geberit Silent Pro, GF Silenta Premium, Wavin SiTECH+, Valsir TriPlus			
Pipe outer Ø ≤ 160.0 mm	on both sides	**EI 120 U/U**	**2**
PE-HD, PP-H, Geberit Silent dB 20			
Pipe outer Ø ≤ 110.0 mm	on both sides	**EI 120 U/U**	**2**
Pipe outer Ø ≤ 160.0 mm	on both sides	**EI 90 U/U**	**2**
POLO-KAL NG, POLO-KAL XS, Conel Drain, REHAU RAUPIANO LIGHT			
Pipe outer Ø ≤ 110.0 mm	on both sides	**EI 120 U/U**	**2**
REHAU RAUPIANO PLUS, Pipelife MASTER 3 PLUS, KE KELIT PHONEX AS, Wavin AS			
Pipe outer Ø ≤ 50.0 mm	on both sides	**EI 120 U/U**	**2**

[1] 1 → 1883.1./14/Z00NP 2 → ETA 22/0051

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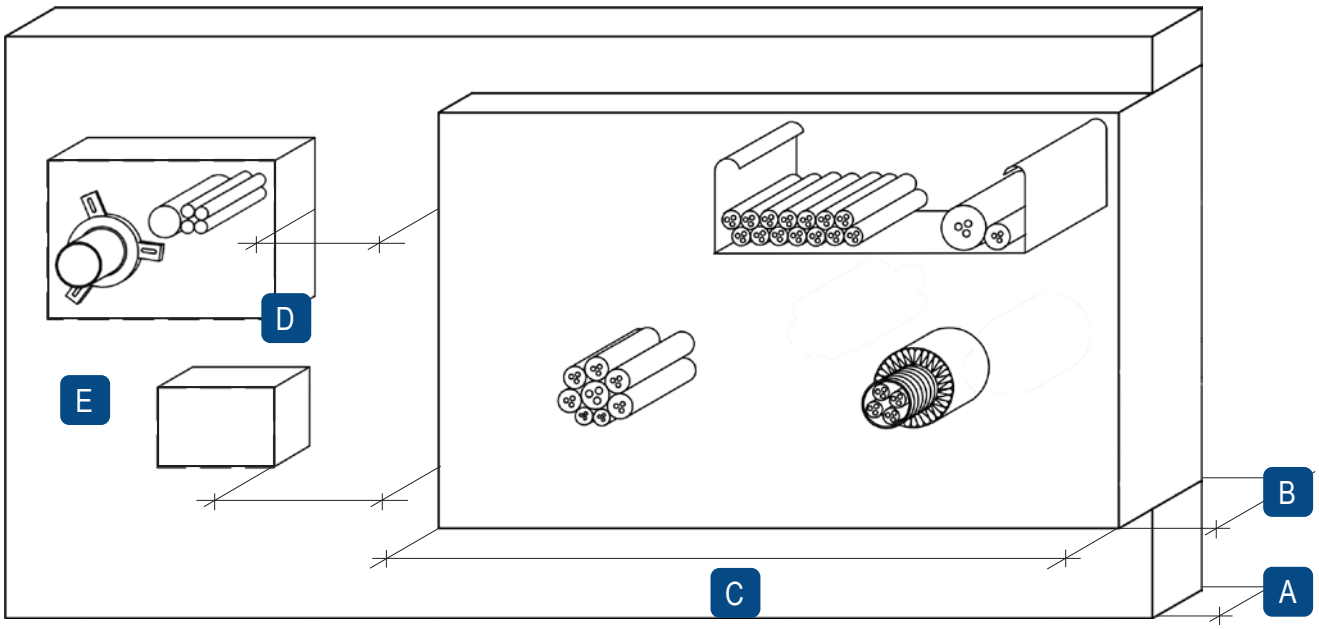
3. Thicknesses / penetration seal distances

Dimensions		
		Wall [mm]
A	Thickness of building element	≥ 100
B	Thickness of penetration seal	≥ 100
C	Maximum dimensions of the opening (width × height)	550 × 600
D	Distance to other cable or pipe penetration seals one or both openings > 400 × 400 mm	≥ 200
	both openings ≤ 400 × 400 mm	≥ 100
E	Distance to other openings or installations one or both openings > 200 × 200 mm	≥ 200
	both openings ≤ 200 × 200 mm	≥ 100



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

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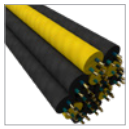
4. Allowed services

4.1 Cables / cable bundles / cable trays / electrical installation conduits

Electrical cables and lines of all types

Overall cross-section of individual cables up to Ø ≤ 80 mm.



Cable bundles

Outer Ø ≤ 150 mm with individual cables Ø ≤ 21 mm. No gusset filling necessary for tightly packed, tied cable bundles.

Cable trays

Cable trays and ladders made of steel (with organic coating if applicable) as long as the fire reaction class complies at least with class A2 according to EN 13501-1.

Electrical installation conduits, single, made of plastic

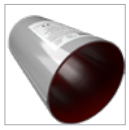
Outer Ø ≤ 32 mm, with/without cables Ø ≤ 21 mm.

Electrical installation conduits, bundled, made of plastic

Outer Ø ≤ 100 mm with individual conduits outer Ø ≤ 32 mm, with or without cables, individual cables Ø ≤ 21 mm.

Conduits made of plastic

plastic pipes with outer Ø ≤ 16 mm



CT Cable Tube

length 150 mm with cables Ø ≤ 21 mm and cable bundles 100% with single cables Ø ≤ 21 mm

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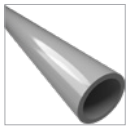
4.2 Combustible pipes



Up to an outer Ø ≤ 160 mm with or without 5 mm PE acoustic insulation.

In case of ventilated drain pipes and closed piping systems: the pipes may carry non-combustible liquids or gases (ventilation pipes excepted).

Pipe material	Pipe outer Ø [mm]	Pipe wall thickness [mm]
PVC-U	≤ 160.0	1,8–11,9
PP-H	≤ 160.0	1,8–10.0
PE-HD	≤ 160.0	
POLO-KAL NG	≤ 110.0	
	≤ 160.0	
POLO-KAL XS	≤ 160.0	
Geberit Silent-db20	≤ 160.0	
GF Silenta Premium	≤ 160.0	
CONEL DRAIN	≤ 110.0	
REHAU RAUPIANO LIGHT	≤ 110.0	
REHAU RAUPIANO PLUS	≤ 50.0	
Valsir Triplus	≤ 160.0	
Pipelife MASTER 3 PLUS	≤ 50.0	
KE KELIT PHONEX AS	≤ 50.0	
Wavin AS	≤ 50.0	
Wavin SiTech+	≤ 160.0	

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5. Spacing distances for services

Novasit BM for plasterboard walls – spacing distances

			Single cables	Cable bundles Ø ≤ 60	Cable bundles Ø > 60 – ≤ 150	Cable trays	EIC, single/bundled, made of plastic	Plastic conduits	Combustible pipes	CT Cable Tube	Seal edge Upper	Seal edge Lower	Seal edge Side
	Single cables		≥ 5 (side by side) ≥ 50 (one above the other)					≥ 5 (side by side) ≥ 50 (one above the other)	≥ 50	≥ 50	≥ 50	≥ 0	≥ 5
	Cable bundles	Ø ≤ 60	≥ 5 (side by side) ≥ 50 (one above the other)				≥ 75	≥ 5 (side by side) ≥ 50 (one above the other)	≥ 50	≥ 50	≥ 50	≥ 0	≥ 5
		Ø > 60 – ≤ 150					≥ 5 (side by side) ≥ 50 (one above the other)						
	Cable trays		≥ 5 (side by side) ≥ 50 (one above the other)					≥ 5 (side by side) ≥ 50 (one above the other)	≥ 50	≥ 50	≥ 50	≥ 0	≥ 5
	EIC, single/bundled, made of plastic		≥ 5 (side by side) ≥ 50 (one above the other)	≥ 75		≥ 5 (side by side) ≥ 50 (one above the other)		≥ 5 (side by side) ≥ 50 (one above the other)	≥ 100	≥ 50	≥ 50	≥ 0	≥ 5
	Plastic conduits		≥ 5 (side by side) ≥ 50 (one above the other)					≥ 5 (side by side) ≥ 50 (one above the other)	≥ 50	≥ 50	≥ 50	≥ 0	≥ 5
	Combustible pipes		≥ 50				≥ 100	≥ 50	≥ 0	≥ 100	≥ 0	≥ 0	≥ 0
	CT Cable Tube		≥ 50				≥ 100	≥ 50	≥ 100	≥ 10	≥ 5	≥ 5	≥ 5

Maße in mm

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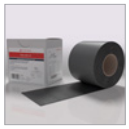
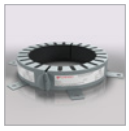
6. Used products

NOVASIT BM
Fire protection mortar
20 kg bag – Art. no. 01161000
10 kg pail – Art. no. 01161010



DG-CR 1.5
Fire protection wrap
Roll, 10 m × 125 mm – Art. no. 01261931



AWM II
Fire protection collar
Ø 32–400 mm
Art.-Nr. 01142032–01142400

Variant N II A
Fire protection collar
Ø 32–160 mm – Art. no. 15032–15160

Cable Tube CT

comprising Cable Tube CT and 2 flexible foam stoppers
Ø 60 mm / L 150 mm – Art. no. 01276101
Ø 90 mm / L 150 mm – Art. no. 01279101
Ø 90 mm / L 200 mm – Art. no. 01279201
Ø 90 mm / L 300 mm – Art. no. 01279301
Ø 120 mm / L 150 mm – Art. no. 01281151
Ø 120 mm / L 200 mm – Art. no. 01281201
Ø 120 mm / L 300 mm – Art. no. 01281301

Recommended tools

Mixing container – mortar cask
Mixing paddle
Cover sheeting
Masonry tools (round dippers)
Wire binding pliers, size 10 key or ratchet steel wire

6.1 Declarations of Performance

The Declarations of Performance for the featured products are available for download on our website:
https://svt-global.com/downloads

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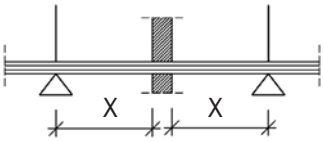
7. Initial brackets (supports)

Essential parts of the brackets/supports for the installations used with the penetration sealing system must be non-combustible (building material category DIN 4102-A) and installed at distances as follows:

		Wall – X [mm]
	Cables, cable bundles, cable trays, EIC, cable tubes	≤ 500 mm

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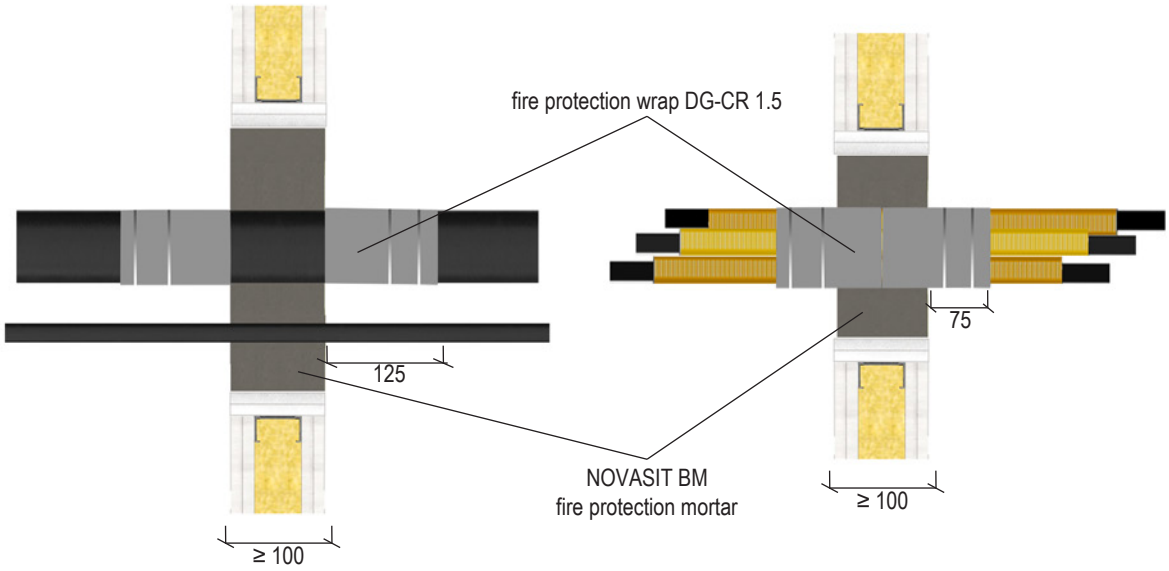
8. Fire protection measures

8.1 Cables / cable bundles / cable trays / EIC single and bundled /Cable Tubes

- Cables and cable bundles may be installed with or without cable trays.
- Cable bundles may be installed unopened in the seal. It is not necessary to fill the gussets if the bundles consist of parallel-running cables that are tightly packed, tied, stitched or welded together.
- The supporting structures for cable trays must be designed in such a way that the penetration seal will not be subjected to additional mechanical stress in case of fire.
- In case of cable support structures made of sheet steel or hollow aluminium profiles, the spars must be drilled and filled with the ablative filler FLAMMOTECT-A in the penetration area (necessary measures must be coordinated on site).
- The fire protection wrap DG-CR 1.5 is coated on one side and equipped with a protective film. The film must be removed before applying the wrap. The wrap is applied with the coated side facing inwards and fastened with steel wires.

Design with fire protection wrap DG-CR 1.5



For thicknesses and design variants, see page 7

All specifications in mm

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Service	Dimensions [mm]	Fire protection wrap DG-CR 1.5						Fire resistance class
		Wrap width [mm]	Number of wraps [n]	Number of layers [n]	Overlap [mm]	Inside seal [mm]	Outside seal [mm]	
Cables	Ø ≤ 21	–	–	–	–	–	–	EI 90
	Ø ≤ 50	125	2	2	0	0	125	EI 90 / E 120
	Ø ≤ 80							EI 90 / E 120
Cable bundles	Ø ≤ 60	–	–	–	–	–	–	EI 90
	Ø > 60 – ≤ 150	125	2	1	0	50	75	EI 120
EIC made of plastic, single	EIC Ø ≤ 32 cable Ø ≤ 21			2				EI 120 U/U
EIC made of plastic, bundled	bundle Ø ≤ 100 EIC Ø ≤ 32 Cable Ø ≤ 21							
Plastic conduits	Ø ≤ 16	–	–	–	–	–	–	EI 90
CT Cable Tube	L = 150	–	–	–	–	–	–	EI 90

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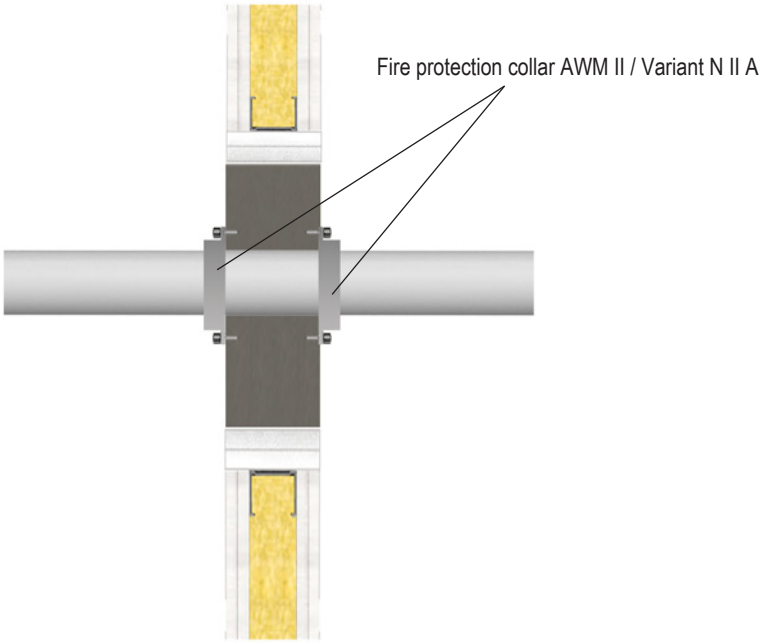
8.2 Combustible pipes

Design variant with fire protection collar AWM II / N II A



For thicknesses and design variants, see page 7

All specifications in mm

Combustible pipes with/without 5 mm PE acoustic insulation and with fire protection collar AWM II / Variant N II A	Measure	Fire resistance class
PVC-U, Geberit Silent Pro, GF Silenta Premium, Wavin SiTECH+, Valsir TriPlus		
Pipe outer Ø ≤ 160.0 mm	on both sides	**EI 120 U/U**
PE-HD, PP-H, Geberit Silent dB 20		
Pipe outer Ø ≤ 110.0 mm	on both sides	**EI 120 U/U**
Pipe outer Ø ≤ 160.0 mm	on both sides	**EI 90 U/U**
POLO-KAL NG, POLO-KAL XS, Conel Drain, REHAU RAUPIANO LIGHT		
Pipe outer Ø ≤ 110.0 mm	on both sides	**EI 120 U/U**
REHAU RAUPIANO PLUS, Pipelife MASTER 3 PLUS, KE KELIT PHONEX AS, Wavin AS		
Pipe outer Ø ≤ 50.0 mm	on both sides	**EI 120 U/U**

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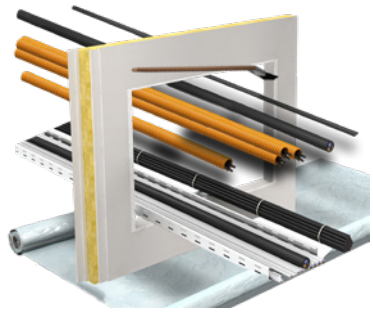
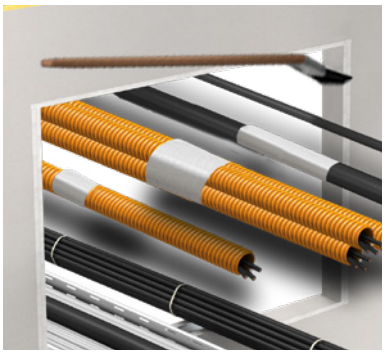
9. Installation steps

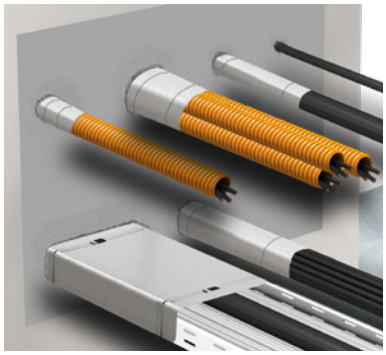
1. If necessary, cover the floor on both sides with protective sheets, clean the reveal and wet absorbing surfaces of the reveal with water. Prepare NOVASIT BM fire protection mortar according to the instructions on the packaging.



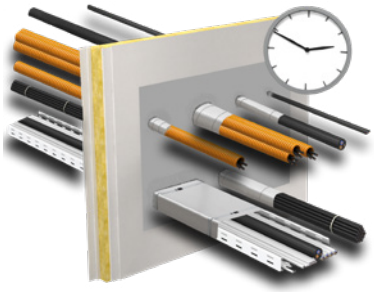
2. When installing cables with Ø > 21 mm or electrical installation conduits apply the fire protection wrap DG-CR 1.5 as necessary.



3. Apply the mortar in such a way that it tightly and firmly connects to the building element. All gussets and cavities must be filled completely.



4. After hardening, smooth the surfaces with the trowel and fully rework any shrinkage cracks. The same applies to any areas revealed after removing the formwork.



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

6. After the mortar residues have dried, remove them from cables, walls and floors, clean surfaces. Remove the protective sheets and ensure their proper disposal.