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Designated according to Article 29 of Regulation (EU) No 305/2011

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European Technical Assessment

ETA-16/0103
Of 22/03/2022

General part

Technical Assessment Body issuing the European Technical Assessment: **SKG-IKOB Certificatie BV**	
Trade name of the construction product	**Firesafe FT Board** **Firesafe FT Coating**
Product family to which the construction product belongs	**Fire Stopping and Sealing Product:** **Penetration Seals**
Manufacturer	**Firesafe AS** **Robsrudskogen 15** **NO – 1470 Lørenskog** **Norway** **Tel.: +47 09 110** **E-mail: info@firesafe.no** **Web: www.firesafe.no**
Manufacturing plants	A007
This European Technical Assessment contains	68 pages including 2 Annex which form an integral part of this assessment.
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	EAD 350454-00-1104, edition September 2017
This ETA replaces/amends/is a corrigendum to	ETA 16-0103, version 6, issued on 27-02-2020

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Specific parts

1 Technical description of the product

Firesafe FT Board and Firesafe FT Coating is a service closure used to form a penetration seal around metal pipes, plastic pipes, electrical cables and cable carriers to reinstate the fire resistance performance of wall and floor constructions, where they have been provided with apertures for the penetration of services.
The Firesafe FT Board is composed of mineral wool with a Firesafe FT Coating on the facing side(s).

Product	Properties
Firesafe FT Board	Mineral wool slab (acc. EN 14303:2009+A1:2013) individually packed in a seal bag Surface treatment PA coating on 1 side or 2 sides Dimensions: 600 mm x 1200 mm Thickness: 50 mm or 60 mm

Product	Properties
Firesafe FT Coating	Pails of 4kg, 10 kg or drums of 200kg 600 à 800 mμ

The applicant has submitted a written declaration that the product and/or constituents of the product contains no substances which have to be classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the "Indicative list on dangerous substances" of the EGDS - taking into account the installation conditions of the construction product and the release scenarios resulting from there.

In addition to the specific clauses relating to dangerous substances contained in this European technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

2 Specification of the intended uses in accordance with the applicable Assessment Document (hereinafter EAD)

2.1 Intended use

The intended use of system Firesafe FT Board and Firesafe FT Coating is to reinstate the fire resistance performance of gaps in flexible wall and rigid wall constructions, gaps in rigid floor constructions, and where they are penetrated by services.

The specific elements of construction that the system Firesafe FT Board and Firesafe FT Coating may be used to provide a gap or penetration seal in, are as follows:

- Flexible walls: The wall must have a minimum thickness of 75 mm and comprise steel studs lined on both faces with minimum 2 layers of 12.5 mm thick boards; in compliance with EN 1363-1.
- Rigid walls: The wall must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg/m^3 or 100 mm 5 layered CLT wall.
- Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m^3 or 140 mm 5 layered CLT floor.

The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period. Detailed information and data are given in Annex A.

Environmental conditions are type Z_2: Intended for uses in internal conditions with humidity lower than 85 % RH excluding temperatures below 0°C, without exposure to rain or UV.

2.2 Working life

The assumed working life of Firesafe FT Board and Firesafe FT Coating are for the intended use 10 years, provided that the assembled product is subject to appropriate installation, use and maintenance. The indication of 10 years cannot be interpreted as a guarantee given by Firesafe, but should only be regarded as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3. Performance of the product and references to the methods used for its assessment

The assessment of fitness for use has been made in accordance with EAD 350454-00-1104.

Firesafe FT Board		
No	Essential Characteristic	Product performances
BWR 2 Safety in case of fire		
1	Reaction to fire	No performance assessed
2	Resistance to fire	See annex A, Sa - Sm
BWR 3 Hygiene, health and environment		
3	Air permeability	No performance assessed
4	Water permeability	No performance assessed
5	Content, emission and/or release of dangerous substances	Declaration of manufacturer
BWR 4 Safety and accessibility in use		
6	Mechanical resistance and stability	No performance assessed
7	Resistance to movement	No performance assessed
8	Adhesion	No performance assessed
9	Durability	Z_2
BWR 5 Protection against noise		
10	Airborne sound insulation	No performance assessed
BWR 6 Energy economy and heat retention		
11	Thermal properties	No performance assessed
12	Water vapour permeability	No performance assessed

Firesafe FT Coating		
No	Essential Characteristic	Product performances
BWR 2 Safety in case of fire		
1	Reaction to fire	Class F
2	Resistance to fire	See annex A, Sa - Sm
BWR 3 Hygiene, health and environment		
3	Air permeability	No performance assessed
4	Water permeability	No performance assessed
5	Content, emission and/or release of dangerous substances	Declaration of manufacturer
BWR 4 Safety and accessibility in use		
6	Mechanical resistance and stability	No performance assessed
7	Resistance to movement	No performance assessed
8	Adhesion	No performance assessed
9	Durability	Z_2
BWR 5 Protection against noise		
10	Airborne sound insulation	No performance assessed
BWR 6 Energy economy and heat retention		
11	Thermal properties	No performance assessed
12	Water vapour permeability	No performance assessed

4 Assessment and verification of consistency of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the decision 1999/454/EC – Commission Decision of date 22nd June 1999 on the procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards fire stopping, fire sealing and fire protective products, published in the Official Journal of the European Union (OJEU) L178/52 of 14/07/1999, see http://eur-lex.europa.eu/JOIndex.do) of the European Commission1, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table(s) applies (apply).

Product(s)	Intended use(s)	Level(s) or class(es)	System(s)
Fire stopping and fire sealing products	For fire compartmentation and/or fire protection or fire performance	Any	1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Tasks of the manufacturer

Factory production control
The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this European technical Assessment. The manufacturer may only use initial / raw / constituent materials stated in the technical documentation of this European Technical Assessment.
The factory production control shall be in accordance with the Control Plan of 27/02/2020 relating to the European technical assessment ETA 16/0103 issued on 22/03/2022 which is part of the technical documentation of this European technical approval. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at SKG-IKOB.
The results of factory production control shall be recorded and evaluated in accordance with the provisions of the Control Plan.

Other tasks of the manufacturer

Additional information
The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

(a) Technical data sheet:
- Field of application:
- Building elements for which the penetration seal is suitable, type and properties of the building elements like minimum thickness, density, and - in case of lightweight constructions – the construction requirements.
- Limits in size, minimum thickness etc. of the penetration seal
- Construction of the penetration seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.
- Services which the penetration seal is suitable, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. cable trays)

(b) Installation instruction:
- Steps to be followed
- Procedure in case of retrofitting
- Stipulations on maintenance, repair and replacement

Issued in Geldermalsen, the Netherlands on 22/03/2022

The original English version is signed on behalf of SKG-IKOB
by

ir. H.A.J. van Dartel
Certification Manager

Firesafe Field of Application

subpage

2 How-to-read FoA charts

ANNEX A fire resistant performances

pipe penetrations

4 plastic pipes - EN norms
5 PE + PP + PVC
6 PP-R
7 PP-MD
8 PP-MX
9 aluPE-X
10 PE-Xa

metal pipes

11 copper
12 steel
13 cast iron

cable penetrations

14 cable trays + ladders + wire mesh
15 cables + bundles

air control services

16 fire dampers
16 air transfer grilles
16 duct cladding

structural joints

17 linear (expansion) joints

18 **electrical socket boxes**
FR sockets + wiring

3 **blank seals**
gaps + openings without any service penetrations

ANNEX B acoustical performances

sound insulation: penetrations + joints + blank seals

How-to-read

charts Field of Application Firesafe fire rated building products

certification

Use FoA charts as guideline to quickly identify suitable Firesafe products within classification.

Always apply acc. details as stated per principle detail; click EI performance in chart.

supporting construction

product has been tested in + certified for constructive element, default type:

1	flexible wall ≥100mm; metal or timber studs, plaster board type A + wall insulation
1-n100	flexible wall ≥100mm; metal or timber studs, plaster board type F, no wall insulation
1-n75	flexible wall ≥75mm; metal or timber studs, plaster board type F, no wall insulation
2	rigid wall ≥100mm: blockwork/concrete/masonry, density ≥ 600 kg/m^3
3	rigid wall ≥150mm: blockwork/concrete/masonry, density ≥ 600 kg/m^3
4	flexible ceiling ≥150mm: metal studs, plaster board type F
5	rigid floor ≥150mm: (aerated) concrete, density ≥ 600 kg/m^3
6	CLT wall ≥100mm
7	CLTfloor ≥140mm

Note Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

tested in construction type 1	also applicable in constructive element type 2+3 if wall thickness + m^3 weight are either equal or increased
tested in construction type 2	also application in constructive element type 3 if wall thickness + m^3 weight are either equal or increased
tested in FT Board	also applicable in GPG fireseal

"you may always upgrade, but never downsize"

pipe penetrations

type of plastic	all plastic pipe types acc. EN norms
type of metal	all copper or steel or pipes; also suitable for material with lower thermal conductivity + melting point at least equal to tested material
EI	fire resistance in minutes (integrity + insulation)
U/U + U/C + C/U + C/C	pipe end uncapped U / capped C at resp. exposed + unexposed side
pipe insulation	- all synthetic rubber min. 60 kg/m^3 eg Armaflex
	- all glass wool or rock wool min. 75 kg/m^3 eg Climpipe or U Protect Pipe Section Alu2
	- all polyolefin foam min. 28 kg/m^3 eg Uponor
	- all PIR min. 33 kg/m^3
LS	local sustained = partly insulated pipe; total insulation length in mm through constructive element (symmetrically)
LI	local interrupted = partly insulated pipe; insulation length in mm on either side of constructive element
CS	continued sustained = fully insulated pipe
CI	continued interrupted = fully insulated pipe, yet interrupted in constructive element
max. opening	see principle detail, plus:
	- allowed oversize opening ≤ 15mm with FIRE COLLAR + Fire Wrap; if larger, use FT Board:
	walls: max. 600 x 1200 mm + 25%, floors: max. 1000 x 1200 mm up to 600 x 5000 mm
	- allowed 'oversized' collar ≤ 15mm, eg use Ø90 collar for Ø80 pipe
Note	Support pipes; support distance: see principle detail.
	Fasten glass wool or rock wool individually (not wrapped!) with steel wire; see principle detail.

How-to-read

charts Field of Application Firesafe fire rated building products

certification

Use FoA charts as guideline to quickly identify suitable Firesafe products within classification.

Always apply acc. details as stated per principle detail; click EI performance in chart.

cable penetrations

type of service: all steel (galvanised) cable trays + ladders, non-perforated + perforated
all steel (galvanised) mesh wire cable trays

EI: fire resistance in minutes (integrity + insulation)

minimum working spaces

	configuration	horizontal	vertical
Min. distances from opening edges	LARGE	35mm	30 mm
	MIXED	30 mm	0 mm
Min. distances between services	LARGE	5mm	100 mm
	MIXED	20 mm	20 mm

cable groups

group 1 - small sheathed	max. Ø 21mm
group 2 - medium sheathed	max. Ø 50mm
group 3 - large sheathed	max. Ø 80mm
group 4 - data + fibre optic	max. Ø 100mm bundle
group 5 - non-sheathed	max. Ø 23mm
conduit, steel or plastic	max. Ø 16mm

max. opening: see principle detail

Note: Support cable services; support distance: see principle detail.

blank seals

gaps + openings without any service penetrations

EI: fire resistance in minutes (integrity + insulation)

up to EI 120 for application in walls + floors

FoA plastic pipes

Firesafe fire rated building products are applicable for:

PE
polyethylene

aluPE-X
heating + water supply
aka PEX-AL-PEX,
Al-Composite or Multilayer

PE-Xa
high pressure + temperature
cross-linked PE

PE-LD + PE-HD	aluPE-X	PE-Xa
dØ up to 250 mm	dØ up to 75 mm	dØ up to 32 (54) mm
s1 3,2 up to 22,7 mm	s1 2,0 up to 7,5 mm	s1 2,2 up to 4,4 mm
pipes within range (dØ+s1) acc.	pipes within range (dØ+s1) acc.	pipes within range (dØ+s1) acc.
EN 1519-1	EN 1519-1	EN 1519-1
EN 12666-1	EN 12201-2	EN 12201-2
EN 12201-2	EN 12666-1	EN 12666-1
EN ISO 15494	EN ISO 15494	EN 15875
DIN 8074	DIN 8074	EN ISO 15494
DIN 8075	DIN 8075	ISO 21003
DIN 19535-10	DIN 19535-10	DIN 8074
		DIN 8075
		DIN 19535-10
eg Wavin TS	eg Uponor MLC	eg Uponor Aqua
Agru PE 100	TECEflex	Geberit Mepla
Agru PE 100-RC	Geberit Mepla	Kekelit Kelox KM 110
	Kekelit Kelox KM 110	Rehau Rautitan flex
	Rehau Rautitan stabil	Rehau Rautitan stabil
	Henco Alupex	
	Begetube Alpex	

PP
polypropylene

PP-R
high pressure + temperature

PP-MD
low noise

PP	PP-R	PP-MD	PP-MX
dØ up to 250 mm	dØ up to 110 mm	dØ up to 160 mm	dØ up to 160 mm
s1 2,7 up to 22,7 mm	s1 3,7 up to 15,1 mm	s1 1,8 up to 5,4 mm	s1 2,7 up to 5,7 mm
pipes within range (dØ+s1) acc.	pipes within range (dØ+s1) acc.	pipes within range (dØ+s1) acc.	pipes within range (dØ+s1) acc.
EN 1451-1	EN 1451-1	EN 1451-1	EN 1451-1
EN ISO 15494	EN ISO 15494	EN ISO 15494	EN ISO 15494
EN ISO 15874	EN ISO 15874	EN ISO 15874	EN ISO 15874
DIN 8077	ISO 21003	DIN 8077	DIN 8077
DIN 8078	DIN 8077	DIN 8078	DIN 8078
	DIN 8078		
eg Dyka PP	eg Aquatherm Blue	eg Uponor Decibel	eg Geberit Silent-Pro
Agru PP-H	Aquatherm Green	Geberit Silent-PP	
	Aquatechnik PP-R	Pipelife Master 3	
	Akatherm PP-R	Rehau Raupiano Plus	
	Wavin Pilsa	Poloplast Polo-Kal NG / 3S	
		Wavin SiTech / AS	
		Valsir Silere / Triplus	

PVC
polyvinyl chloride

PVC + PVC-C + PVC-U
dØ up to 400 mm
s1 2,7 up to 22,7 mm
pipes within range (dØ+s1) acc.
EN 1329-1
EN 1453-1
EN 1452
EN 1566-1
EN ISO 15493
ISO 15877
DIN 8061
DIN 8062
DIN 19531-10

► INDEX
PE + PP + PVC
plastic cable conduits
PP-R
PP-MD
PP-MX
aluPE-X
PE-Xa
copper
steel
steel conduits
cast iron
trays + ladders + wire mesh
cables + bundles
fire dampers
air transfer grilles
duct cladding
linear joints
socket boxes
blank seals
EN norms for plastic pipes
how-to-read
acoustical
environmental

PE + PP + PVC classification ≤ Ø250 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

PE + PP + PVC acc. EN norms
dØ up to 250 mm
s1 up to 22,7 mm
pipe brands eg Pipelife, Agru, Dyka, Wavin

suitable Firesafe products within classification: *

dØ	s1	pipe insulation	FT Graphite (DoP CPR-16/0094) walls	FT Graphite floors	FIRE COLLAR (DoP CPR-15/0339) walls	FIRE COLLAR floors	Fire Wrap (DoP CPR-15/0339) walls	Fire Wrap floors
up to Ø110	2,7 up to 10,0 PE 3,4 up to 10,0 PP 2,7 up to 6,3 PVC 2,7 up to 10,0	non-insulated	EI 90 in wall 1+2+3 EI 90 in wall 1-n100 EI 30 in wall 1-n75 EI 90 in wall 6	EI 90 in floor 5 EI 90 in floor 7	EI 60 in wall 1+2+3 EI 60 in wall 1-n100 EI 30 in wall 1-n75 also on FT Board: screwed on or cast-in	EI120 in ceiling 4 EI 120 in floor 5 EI 90 in floor 7 also on FT Board: screwed on or cast-in	EI 120 in wall 1+2+3 2 layer	EI 180 in floor 5 2 layer EI 90 in floor 7 2 layer
Ø125	3,1 up to 11,7 PE 3,9 up to 11,7 PP 3,1 up to 7,1 PVC 3,1 up to 11,7	non-insulated			EI 60 in wall 1+2+3 EI 60 in wall 1-n100 collar Ø125		EI 60 in wall 1+2+3 2 layer	EI 180 in floor 5 3 layer
Ø140 - Ø160	4,0 up to 14,6 PE 4,9 up to 14,6 PP 4,0 up to 14,6 PVC 4,0 up to 14,6	non-insulated			EI 60 in wall 1+2+3 EI 60 in wall 1-n100 collar Ø140 or Ø160	EI 90 in floor 5 collar Ø140 or Ø160		EI 180 in floor 5 3 layer
Ø200	4,9 up to 18,2 PE 6,2 up to 18,2 PP 4,9 up to 18,2 PVC 4,9 up to 18,2	non-insulated			EI 60 in wall 1+2+3 EI 60 in wall 1-n100 collar Ø200			
Ø250	6,2 up to 22,7 PE 9,6 up to 22,7 PP 6,2 up to 22,7 PVC 6,2 up to 22,7	non-insulated			EI 60 in wall 1+2+3 also in FT Board collar Ø250			

non-standard configurations eg angled, bundled or XL:
up to Ø400mm with FIRE COLLAR

joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides	default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides	default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported**;
support distance walls max. 500mm
support distance floors max. 400mm

*** Alternatively, use FT Acrylic or FT Paste for pipes ≤ Ø50mm; see individual results.**

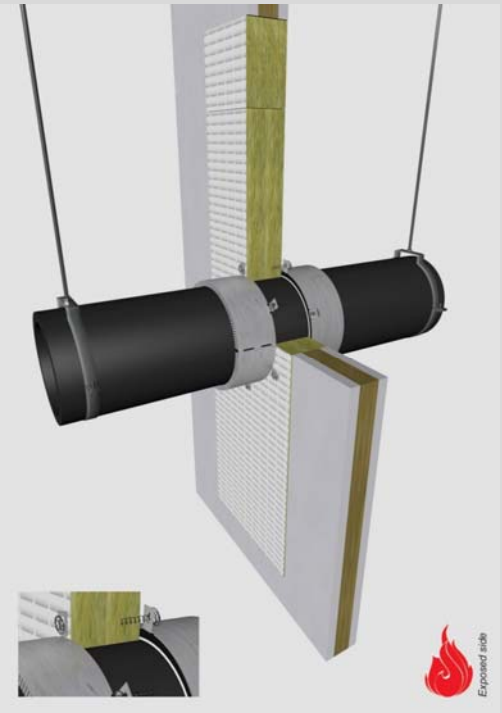
NOTE:
CONDUITS: see
PLASTIC CABLE CONDUITS

► INDEX
PE + PP + PVC
plastic cable conduits
PP-R
PP-MD
PP-MX
aluPE-X
PE-Xa
copper
steel
steel conduits
cast iron
trays + ladders + wire mesh
cables + bundles
fire dampers
air transfer grilles
duct cladding
linear joints
socket boxes
blank seals
EN norms for plastic pipes
how-to-read
acoustical
environmental

Notes:
- installation instructions in TDS
- apply smokeseal Firesafe FT Acrylic on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45° (default for range) or 15° (individually tested)

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	7-14



PE + PP + PVC pipes

FIRE COLLAR

dØ (mm)	service type [1]	s1 (mm)	non-standard config.		EI	constructive element [2]	Firesafe pipe collar Ø in mm	application 1 or 2 sides	finish required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø110	PE	3,4 up to 10,0			EI 60	flexible walls ≥ 100 mm	Ø110	2 sides	*	110 mm	U/C + C/C + C/C	perpendicular + all angles between 90° and 45°
	PVC	2,7 up to 10,0	non-insulated walls		EI 60	flexible walls ≥ 100 mm	Ø110	2 sides	*	130 mm	U/C + C/C + C/C	
	PP	2,7 up to 6,3	non-insulated walls		EI 30	flexible walls ≥ 75 mm	Ø110	2 sides	*	130 mm	U/C + C/C + C/C	
				screwed on or cast-in with Firesafe FT Spirals	EI 60	flexible walls ≥ 100 mm	Ø110	2 sides	*	600x1500 mm	U/C + C/C + C/C	
					EI 60	flexible walls ≥ 100 mm	Ø110	2 sides	*	600 x 1200 mm	U/C + C/C + C/C	
					EI 60	flexible walls ≥ 100 mm	Ø110	2 sides	*	264 x 264 mm	U/C + C/C + C/C	
Ø125	PE	3,9 up to 11,7			EI 60	flexible walls ≥ 100 mm	Ø125	2 sides	*	127 mm	U/C + C/C + C/C	
	PVC	3,1 up to 11,7										
	PP	3,1 up to 7,1	non-insulated walls		EI 60	flexible walls ≥ 100 mm	Ø125	2 sides	*	145 mm	U/C + C/C + C/C	
Ø140	PE	4,9 up to 14,6			EI 60	flexible walls ≥ 100 mm	Ø140	2 sides	*	140 mm	U/C + C/C + C/C	
	PVC	4,0 up to 14,6										
	PP	4,0 up to 14,6	non-insulated walls		EI 60	flexible walls ≥ 100 mm	Ø140	2 sides	*	160 mm	U/C + C/C + C/C	
Ø160	PE	4,9 up to 14,6			EI 60	flexible walls ≥ 100 mm	Ø160	2 sides	*	160 mm	U/C + C/C + C/C	
	PVC	4,0 up to 14,6										
	PP	4,0 up to 14,6	non-insulated walls		EI 60	flexible walls ≥ 100 mm	Ø160	2 sides	*	180 mm	U/C + C/C + C/C	
Ø200	PE	6,2 up to 18,2			EI 60	flexible walls ≥ 100 mm	Ø200	2 sides	*	200 mm	U/C + C/C + C/C	
	PVC	4,9 up to 18,2										
	PP	4,9 up to 18,2	non-insulated walls		EI 60	flexible walls ≥ 100 mm	Ø200	2 sides	*	220 mm	U/C + C/C + C/C	
max.												
Ø250	PE	9,6 up to 22,7		screwed on with Firesafe FT Spirals	EI 60	flexible walls ≥ 100 mm	Ø250	2 sides	*	400 x 1375 mm	U/C + C/C + C/C	
	PVC	6,2 up to 22,7										
	PP	6,2 up to 22,7										

>> contined on page 2

* smokeseal FT Acrylic on 2 sides

in FT Board 2S 50 mm

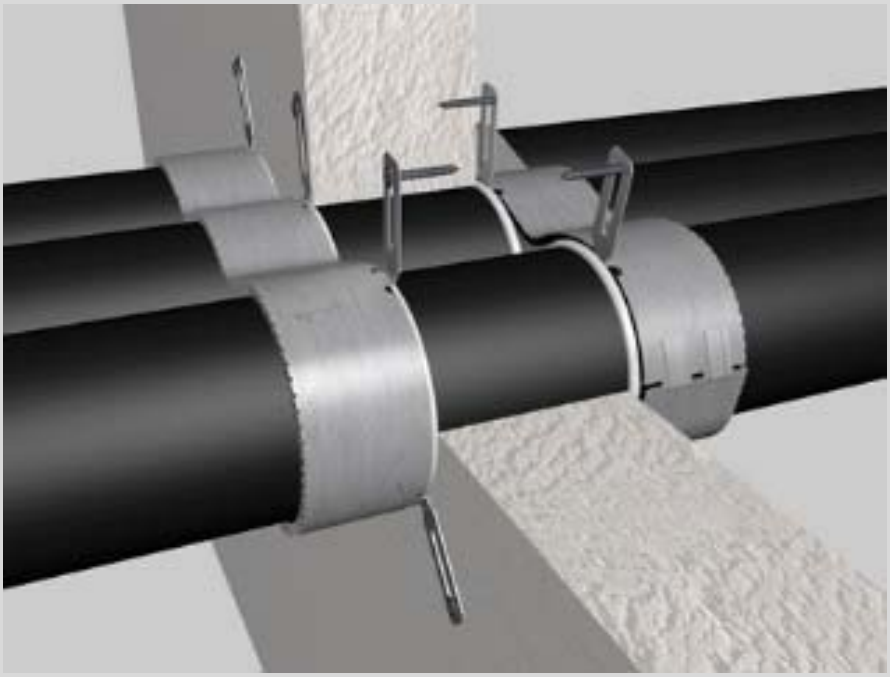
[1] Penetration services must be supported; support distance ≤ 500mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- apply smokeseal Firesafe FT Acrylic on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45° (default for range) or 15° (individually tested)

principle detail Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	0257



PE + PP + PVC pipes

service type [1] dØ (mm)		s1 (mm)	non-standard config.		EI	constructive element [2]	FIRE COLLAR Firesafe pipe collar Ø in mm	application 1 or 2 sides	finish required	max. opening in construction	pipe end configuration	max. angle
individual test results												
Ø75	PE	3,0	non-insulated walls	with pipe insulation 13mm AF	EI 60	flexible walls ≥ 75 mm	Ø110	2 sides	*	121 mm	U/C + C/C	default: perpendicular + all angles between 90° and 45° or tested with max. 15° angle
			non-insulated walls	with steel support	EI 60	flexible walls ≥ 75 mm	Ø80	2 sides	*	95 mm	U/C + C/C	
Ø90	PE	4,0	non-insulated walls	with steel support	EI 60	flexible walls ≥ 75 mm	Ø90	2 sides	*	110 mm	U/C + C/C	
Ø110	PE	3,4			EI 120	flexible walls ≥ 100 mm	Ø110	2 sides	*	110 mm	U/U + C/U + U/C + C/C + C/C	
	PP	2,7			EI 120	flexible walls ≥ 100 mm	Ø110	2 sides	*	110 mm	U/U + C/U + U/C + C/C + C/C	
	PE	4,2	non-insulated walls	with pipe insulation 13mm AF	EI 60	flexible walls ≥ 75 mm	Ø140	2 sides	*	156 mm	U/C + C/C	
	PE	4,2	non-insulated walls	with steel support	EI 30	flexible walls ≥ 75 mm	Ø110	2 sides	*	130 mm	U/C + C/C	
	PE	6,0	non-insulated walls	with acoustical demper	EI 60	flexible walls ≥ 75 mm	Ø110	2 sides	*	130 mm	U/U + C/U + U/C + C/C + C/C	
	PE	4,2		max. 15° angle 3)	EI 120	rigid walls ≥ 100 mm	Ø125	2 sides	*	115 mm	U/C + C/C + C/C	
	PE	10,0		3x bundled	EI 90	rigid walls ≥ 100 mm	Flex collar OR FMU chain	2 sides	*	330 x 330 mm	U/C + C/C	
Ø125	uPVC	3,7		with pipe socket	EI 90	flexible walls ≥ 100 mm	Ø125	2 sides	*	125 mm	U/C + C/C	
	PP	3,1		screwed on FT Board box	EI 90	flexible walls ≥ 100 mm	Ø125	2 sides	*	125 mm	U/C + C/C	
Ø200	PVC	6,0		cast-in	EI 60	rigid walls ≥ 150 mm	Ø200	2 sides	*	255 mm	U/C + C/C	
Ø400	PVC	12,5		XL size	EI 90	rigid walls ≥ 150 mm	up to Ø400	2 sides	*	405 mm	C/C	

* smokeseal FT Acrylic on 2 sides

[1] Penetration services must be supported; support distance ≤ 500mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

[3] Max. angle: perpendicular + all angles between 90° and 45° + 0° to max. 15°

PP-R classification ≤ Ø125 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

PP-R acc. EN norms
dØ 40 up to 125 mm
s1 3,7 up to 17,1 mm
pipe brands eg Aquatherm, Aquatechnik, Wavin Pilsa

suitable Firesafe products within classification:

dØ	s1	pipe insulation	FT Graphite (DoP CPR-16/0094) walls	FT Graphite floors	FIRE COLLAR (DoP CPR-15/0339) walls	FIRE COLLAR floors	Fire Wrap (DoP CPR-15/0339) floors
Ø40	3,7 up to 5,5	non-insulated	EI 120 in wall 1+2 EI 240 in wall 3	results max. EI 240 in floor 5	results max. EI 120 in wall 1+2 EI 240 in wall 3 collar Ø40	results max. EI 240 in floor 5 collar Ø40	
		+ pipe insulation + **polythylene rubber**, min. 25 kg/m³ 25 mm	individual result: EI 60 in wall 1-n100 in FT Board				
Ø50	4,6	non-insulated	individual result: EI 60 in wall 1-n75				
Ø63	5,8 up to 8,6	non-insulated	results max. EI 120 in wall 1+2 EI 240 in wall 3	results max. EI 240 in floor 5	EI 90 in wall 1+2 EI 120 in wall 3 collar Ø63	results max. EI 120 in floor 5 collar Ø63	
Ø75	6,8 up to 10,3 s1 up to 10,3	non-insulated	results max. EI 120 in wall 1+2 EI 240 in wall 3 individual result: EI 60 in wall 1-n75	results max. EI 240 in floor 5	EI 90 in wall 1+2 EI 120 in wall 3 collar Ø75	EI 120 in floor 5 collar Ø75	
Ø90	8,2	+ pipe insulation + **polythylene rubber**, min. 25 kg/m³ 25 mm	individual result: EI 60 in wall 1-n100				
Ø110	10,0 up to 15,1	non-insulated	results max. EI 120 in wall 1+2+3	results max. EI 180 in floor 5	EI 60 in wall 1+2+3 collar Ø110	results max. EI 120 in floor 5 collar Ø110	
Ø125	11,4 up to 17,1	non-insulated				results max. EI 180 in floor 5 collar Ø125	EI 240 in floor 5 3 layer
			joint details: min. W x D, default: walls: 10 x 40 mm, apply on 2 sides floors: 15 x 40mm, apply on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides		default: floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported**;
support distance walls max. 500mm
support distance floors max. 400mm

Min. length pipe insulation LI / LS / CS / CI:
see principle detail.

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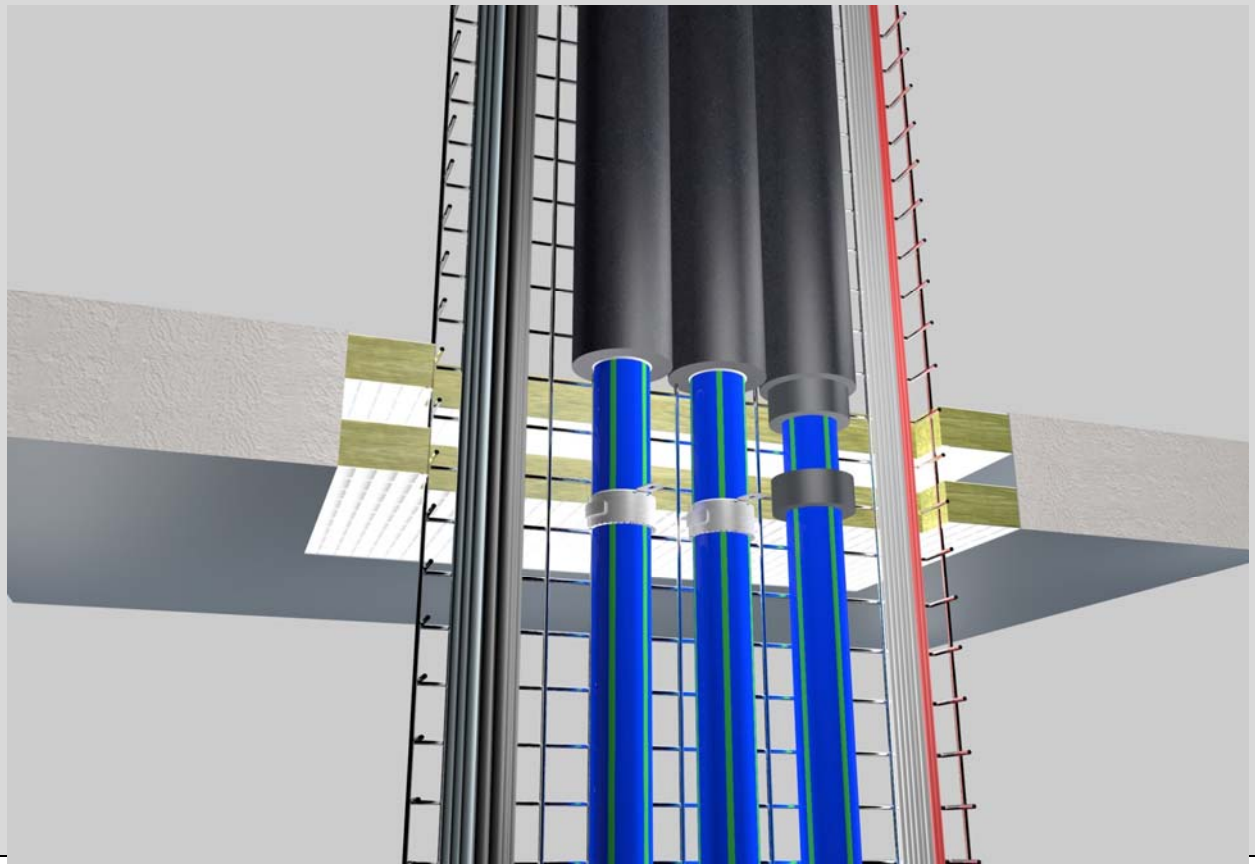
Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	17-6-6g



PP-R pipes

service type dØ (mm)	s1 (mm)	pipe insulation min. 28 kg/m3 eg Uponor		EI	constructive element [2]	FT Graphite Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø40	min. 3,7	-		EI 240	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	70 mm	U/C + C/C	perpendicular + all angles between 90° and 45°
	max. 5,5	-		EI 240	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	70 mm	U/C + C/C	
Ø63	min. 5,8	-		EI 240	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	93 mm	U/C + C/C	
	max. 8,6	-		EI 180	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	93 mm	U/C + C/C	
	5,8	polyolefin 25mm	750 LS + LI + CS + CI	EI 60	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	600 x 800 mm	U/C + C/C	
Ø75	min. 6,8	-		EI 240	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	105 mm	U/C + C/C	
	max. 10,3	-		EI 180	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	105 mm	U/C + C/C	
max.												
Ø110	min. 10	-		EI 180	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	140 mm	U/C + C/C	
	max. 15,1	-		EI 90	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	140 mm	U/C + C/C	

in FT Board 2S 50 mm

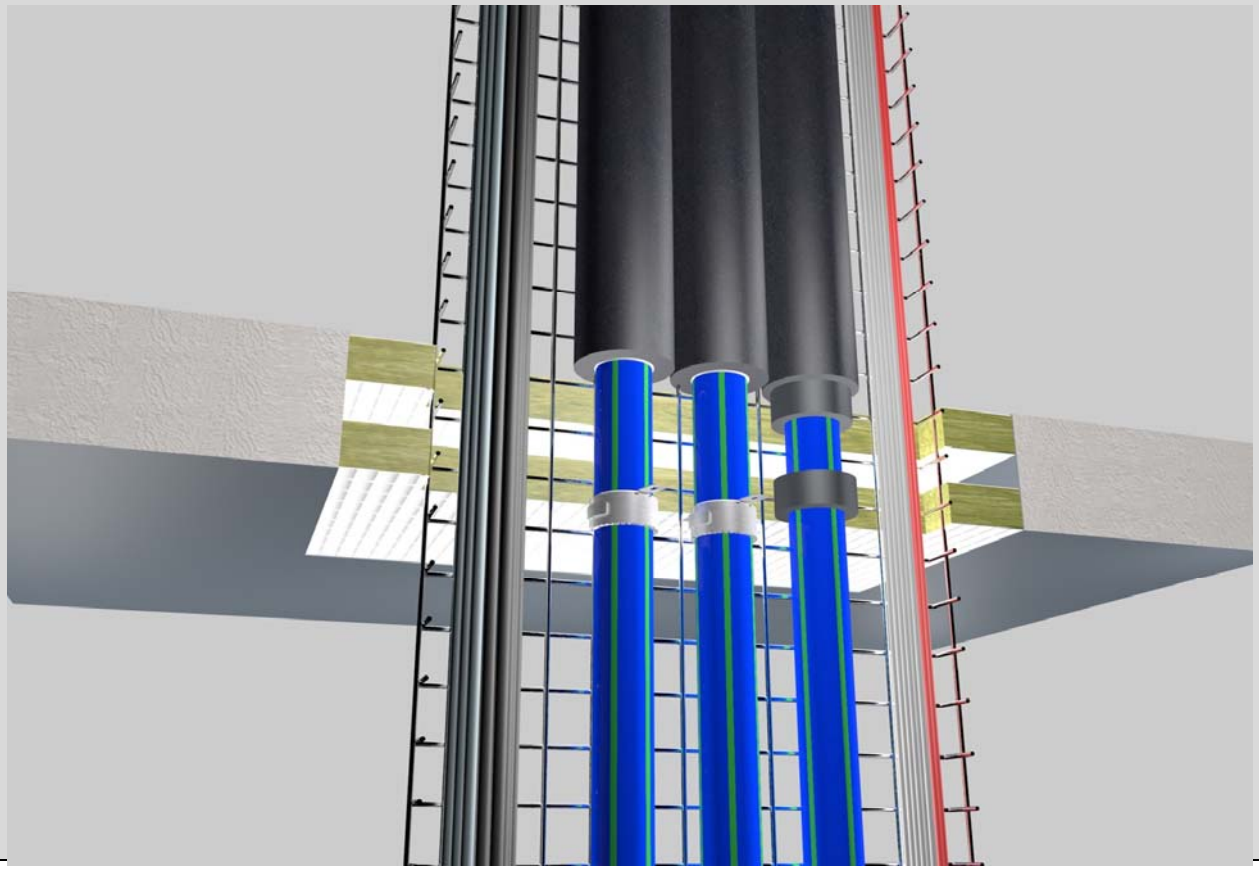
[1] Penetration services must be supported; support distance ≤ 400mm.

[3] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Installation:
- installation instructions in TDS
- FIRE COLLAR fastened onto FT Board with FT Board spiral screws
- 5mm Firesafe FT Acrylic around cables + wire mesh cable tray
- no coat back!

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	17-6-6



PP-R pipes

service type dØ (mm)	s1 (mm)	pipe insulation min. 28 kg/m3 eg Uponor		EI	constructive element [2]	FIRE COLLAR Firesafe pipe collar Ø in mm	application 1 or 2 sides	finish required	max. opening in construction	pipe end configuration	max. angle
Ø40	min. 3,7	-		EI 240	rigid floors ≥ 150 mm	Ø40	1 side	*	40 mm	U/C + C/C	perpendicular + all angles between 90° and 45°
	max. 5,5	-		EI 180	rigid floors ≥ 150 mm	Ø40	1 side	*	40 mm	U/C + C/C	
Ø63	min. 5,8	-		EI 120	rigid floors ≥ 150 mm	Ø63	1 side	*	63 mm	U/C + C/C	
	max. 8,6	-		EI 120	rigid floors ≥ 150 mm	Ø63	1 side	*	63 mm	U/C + C/C	
2x bundled	5,8	polyolefin 25mm	750 LS + LI + CS + CI	EI 60	rigid floors ≥ 150 mm	Ø63	1 side	*	600 x 800 mm	U/C + C/C	
Ø75	min. 6,8	-		EI 120	rigid floors ≥ 150 mm	Ø75	1 side	*	75 mm	U/C + C/C	
	max. 10,3	-		EI 120	rigid floors ≥ 150 mm	Ø75	1 side	*	75 mm	U/C + C/C	
Ø110	min. 10	-		EI 90	rigid floors ≥ 150 mm	Ø110	1 side	*	110 mm	U/C + C/C	
	max. 15,1	-		EI 120	rigid floors ≥ 150 mm	Ø110	1 side	*	110 mm	U/C + C/C	
max.											
Ø125	11,4	-		EI 180	rigid floors ≥ 150 mm	Ø125	1 side	*	132 mm	U/C + C/C	
	17,1	-		EI 120	rigid floors ≥ 150 mm	Ø125	1 side	*	132 mm	U/C + C/C	

* smokeseal FT Acrylic on 2 sides

in FT Board 2S 50 mm

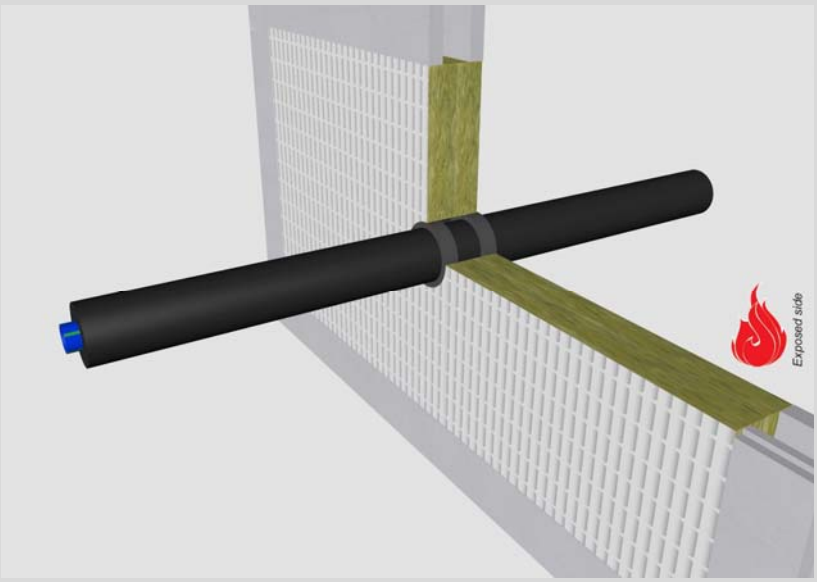
[1] Penetration services must be supported; support distance ≤ 400mm.

[3] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	30-59



PP-R pipes

FT Graphite

service type dØ (mm)	s1 (mm)	non-standard config.	pipe insulation min. 25 kg/m³ eg Thermasmart	EI	constructive element [2]	Firesafe joint seal width	Firesafe joint seal depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø40	3,7			EI 120	flexible walls ≥ 100 mm	10 mm	40 mm	2 sides	-	60 mm	U/C + C/C	perpendicular + all angles between 90° and 45°
	3,7			EI 240	rigid walls ≥ 150 mm	15 mm	40 mm	2 sides	-	70 mm	U/C + C/C	
	max. 5,5			EI 120	flexible walls ≥ 100 mm	10 mm	40 mm	2 sides	-	60 mm	U/C + C/C	
	max. 5,5			EI 240	rigid walls ≥ 150 mm	15 mm	40 mm	2 sides	-	70 mm	U/C + C/C	
Ø63	5,8			EI 120	flexible walls ≥ 100 mm	10 mm	40 mm	2 sides	-	83 mm	U/C + C/C	
	5,8			EI 240	rigid walls ≥ 150 mm	15 mm	40 mm	2 sides	-	93 mm	U/C + C/C	
	max. 8,6			EI 120	flexible walls ≥ 100 mm	10 mm	40 mm	2 sides	-	83 mm	U/C + C/C	
	max. 8,6			EI 180	rigid walls ≥ 150 mm	15 mm	40 mm	2 sides	-	93 mm	U/C + C/C	
Ø75	6,8			EI 120	flexible walls ≥ 100 mm	10 mm	40 mm	2 sides	-	95 mm	U/C + C/C	
	6,8			EI 240	rigid walls ≥ 150 mm	15 mm	40 mm	2 sides	-	105 mm	U/C + C/C	
	max. 10,3			EI 120	flexible walls ≥ 100 mm	10 mm	40 mm	2 sides	-	95 mm	U/C + C/C	
	max. 10,3			EI 180	rigid walls ≥ 150 mm	15 mm	40 mm	2 sides	-	105 mm	U/C + C/C	
max.												
Ø110	10,0			EI 120	flexible walls ≥ 100 mm	10 mm	40 mm	2 sides	-	130 mm	U/C + C/C	
	10.0			EI 120	rigid walls ≥ 150 mm	10 mm	40 mm	2 sides	-	105 mm	U/C + C/C	
	max. 15,1			EI 60	flexible walls ≥ 100 mm	10 mm	40 mm	2 sides	-	130 mm	U/C + C/C	
	max. 15,1			EI 60	rigid walls ≥ 150 mm	10 mm	40 mm	2 sides	-	105 mm	U/C + C/C	

individual test results

Ø40	3,7	non-insulated walls	polythylene rubber 25mm CS + CI	EI 60	flexible walls ≥ 100 mm	10mm	100 mm	2 sides	-	1200 x 600 mm	U/C + C/C	perpendicular + all angles between 90° and 45°
Ø50	4,6	non-insulated walls		EI 60	flexible walls ≥ 75 mm	10mm	12,5 mm	2 sides	-	70 mm	U/C + C/C	
Ø75	6,8	non-insulated walls		EI 60	flexible walls ≥ 75 mm	10mm	12,5 mm	2 sides	-	95 mm	U/C + C/C	
Ø90	8,2	non-insulated walls	polythylene rubber 25mm CS + CI	EI 60	flexible walls ≥ 100 mm	10mm	25 mm	2 sides	-	160 mm	U/C + C/C	

in FT Board 2S 50 mm

[1] Penetration services must be supported; support distance ≤ 500mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

PP-MD classification ≤ Ø160 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

PP-MD acc. EN norms
dØ 32 up to 160 mm
s1 1,8 up to 5,4 mm
pipe brands eg Uponor, Poloplast, Rehau, Geberit, Pipelife
acoustical damper brands eg Uponor Bottom Bend

suitable Firesafe products within classification:

dØ	s1	configuration	FT Graphite (DoP CPR-16/0094) walls	FT Graphite floors	FIRE COLLAR (DoP CPR-15/0339) walls	FIRE COLLAR floors	Fire Wrap (DoP CPR-15/0339) walls	Fire Wrap floors
Ø32	1,8	non-insulated	EI 120 in wall 1+2 Ei 240 in wall 3	EI 240 in floor 5	EI 120 in wall 1+2 EI 240 in wall 3 collar Ø40	EI 240 in floor 5 collar Ø40	EI 120 in wall 1+2 EI 180 in wall 3 1 layer	EI 180 in floor 5 2 layer
Ø50	2,0	non-insulated	EI 90 in wall 1+2 EI 180 in wall 3	EI 180 in floor 5	EI 120 in wall 1+2 EI 180 in wall 3 collar Ø50	EI 240 in floor 5 collar Ø50	EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 1 layer
Ø75	2,6	non-insulated	EI 60 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5	EI 120 in wall 1+2 EI 240 in wall 3 collar Ø75	EI 240 in floor 5 collar Ø75	EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 1 layer
Ø110	3,8	non-insulated	EI 60 in wall 1+2+3	EI 60 in floor 5	EI 120 in wall 1+2+3 collar Ø110	EI 180 in floor 5 collar Ø110	EI 120 in wall 1+2+3 2 layer	EI 240 in floor 5 2 layer
						EI 90 in floor 7 collar Ø160 in GPG or FT Board		EI 90 in floor 7 2 layer
		+ pipe socket			EI 60 in wall 1+2+3 collar Ø140	EI 240 in floor 5 collar Ø140	EI 90 in wall 1+2+3 3 layer	
						EI 90 in floor 7 collar Ø160 in GPG or FT Board		
		+ acoustical damper				EI 180 in floor 5 collar Ø110 in GPG or FT Board		
Ø160	5,4	non-insulated			EI 60 in wall 1+2+3 collar Ø160	EI 180 in floor 5 collar Ø160		EI 240 in floor 5 3 layer
		+ pipe socket			EI 60 in wall 1+2+3 collar Ø200			
			joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides	

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported**;
support distance walls max. 500mm
support distance floors max. 400mm

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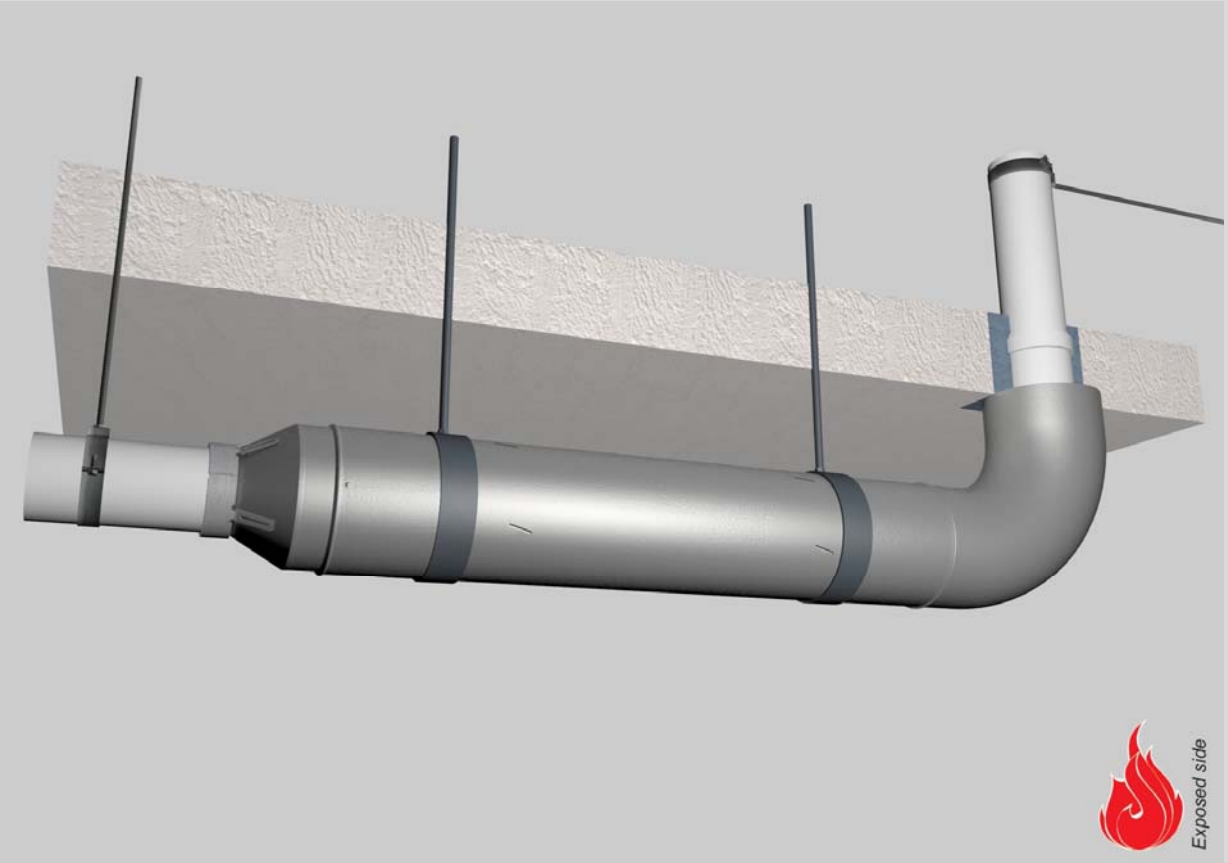
Notes:
- installation instructions in TDS
- apply smokeseal Firesafe FT Acrylic on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	17-6-1



PP-MD pipes

FIRE COLLAR

service type [1] dØ (mm)	s1 (mm)	pipe socket	non-standard config.	EI	constructive element [2]	Firesafe pipe collar Ø in mm	application 1 or 2 sides	finish required	max. opening in construction	pipe end configuration	max. angle
Ø32	1,8	-		EI 240	rigid floors ≥ 150 mm	Ø40	1 side	*	32 mm	U/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø50	2,0	-		EI 240	rigid floors ≥ 150 mm	Ø50	1 side	*	50 mm	U/U + U/C + C/C	
Ø75	2,6	-		EI 240	rigid floors ≥ 150 mm	Ø75	1 side	*	75 mm	U/U + U/C + C/C	
Ø110	3,8	-		EI 180	rigid floors ≥ 150 mm	Ø110	1 side	*	110 mm	U/U + U/C + C/C	
		-		EI 90	CLT floors ≥ 140 mm	Ø110	1 side	3)	150 mm	U/C + C/C	
		-	at 45° angle, U-shape	EI 90	CLT floors ≥ 140 mm	Ø160	1 side	3)	336 mm	U/C + C/C	
		socket on 1 side		EI 240	rigid floors ≥ 150 mm	Ø140	1 side	*	140 mm	U/C + C/C	
		socket on 1 side	at 90° angle	EI 90	CLT floors ≥ 140 mm	Ø160	1 side	*	140 mm	U/C + C/C	
		-	with acoustical damper	EI 180	rigid floors ≥ 150 mm	Ø110	1 side	*	250 x 250 mm	U/C + C/C	
		-	with acoustical damper	EI 180	rigid floors ≥ 150 mm in FR mortar	Ø110	1 side	*	202 mm	U/C + C/C	
max.											
Ø160	5,4	-		EI 180	rigid floors ≥ 150 mm	Ø160	1 side	*	160 mm	U/C + C/C	

in FT Board 2S 50 mm

* smokeseal FT Acrylic on 2 sides

[1] Penetration services must be supported; support distance ≤ 400mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

3) Aperture sealed with Firesafe GPG 140mm depth.

aluPE-X (composite) classification ≤ Ø75 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

aluPE-X (composite) acc. EN norms
dØ 16 up to 75 mm
s1 2,0 up to 7,5 mm

pipe brands eg Uponor, Rehau, Geberit, Henco
pipe insulation brands eg Climpipe, Rockwool, Armaflex, U Protect Pipe Section Alu2

suitable Firesafe products within classification:

dØ	s1	pipe insulation	FT Graphite (DoP CPR-16/0094) walls	FT Graphite floors	FT Acrylic or FT Paste (DoP CPR-16/0094) walls	FT Acrylic or FT Paste floors	FIRE COLLAR (DoP CPR-15/0339) floors	Fire Wrap (DoP CPR-15/0339) walls	Fire Wrap floors
up to Ø25	2,0 up to 2,5	non-insulated	EI 120 in wall 1+2+3		EI 120 in wall 1+2+3				
Ø16 up to Ø75 + synth. rubber insulation	2,0 up to 7,5	+ pipe insulation							
		+ synth. rubber, min. 60 kg/m³ up to 13mm	EI 60 in wall 1+2+3 EI 90 in wall 1-n100 EI 60 in wall 1-n75 also in FT Board	individual results max. EI 90 in floor 5 EI 90 in floor 7	EI 120 in wall 3 EI 90 in wall 6	EI 120 in floor 5 EI 90 in floor 7 10 x 25 mm	EI 90 in floor 7 collar Ø50 - Ø90	EI 60 in wall 1+2+3 2 layer also in FT Board	EI 90 in floor 7 2 layer
			EI 120 in wall 2+3 in GPG		EI 60 in wall 2+3 in GPG			EI 90 in wall 2+3 1 layer in GPG	
Ø16 up to Ø75 + glass or rock wool (alu) insulation	2,0 up to 7,5	+ pipe insulation							
		+ glass or rock wool (alu), min. 75 kg/m³ 20 + 30mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5				EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 2 layer
		40mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5				EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 2 layer
		50mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5				EI 120 in wall 1+2 EI 240 in wall 3 2 layer	EI 240 in floor 5 2 layer
		60mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5				EI 120 in wall 1+2+3 3 layer	EI 120 in floor 5 3 layer
		80mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5				EI 120 in wall 1+2+3 3 layer	EI 120 in floor 5 3 layer
			joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides	default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides	

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported**;
support distance walls max. 500mm
support distance floors max. 400mm

Min. length pipe insulation LI / LS / CS / CI:
see principle detail.

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socket boxes
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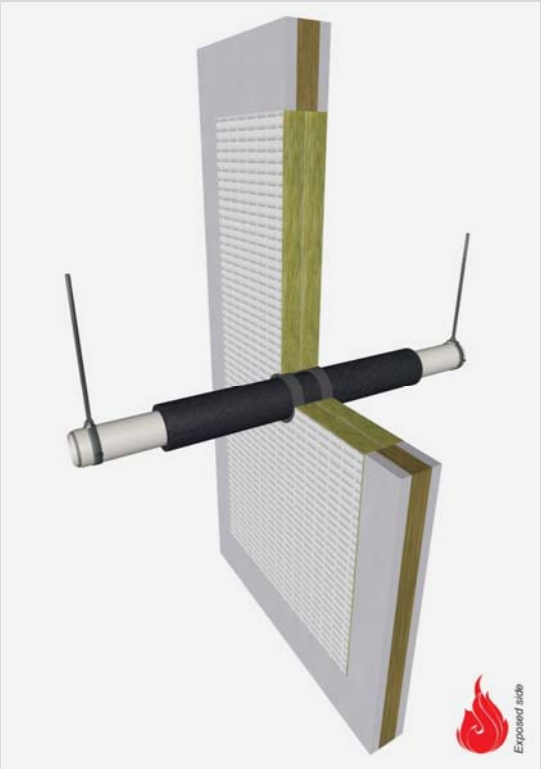
Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0265



aluPE-X pipes

FT Graphite

service type [1] dØ (mm)	s1 (mm)	non-standard config.	pipe insulation min. 60 kg/m³ eg Armaflex	EI	constructive element [2]	Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø16	2,0		-	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	36 mm	U/C + C/C	perpendicular + all angles between 90° and 45°
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	71 mm	U/C + C/C	
		non-insulated walls	synth. rubber 10mm CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	58 mm	U/C + C/C	
		non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	12,5 mm	2 sides	-	62 mm	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600x1200 mm + 25%	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 90	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	62 mm	U/C + C/C	
Ø25	2,5		-	EI 120	flexible walls ≥ 100 mm	5 mm	25 mm	2 sides	-	45 mm	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	71 mm	U/C + C/C	
		non-insulated walls	synth. rubber 10mm CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	67 mm	U/C + C/C	
		non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	12,5 mm	2 sides	-	71 mm	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600x1200 mm + 25%	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 90	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	71 mm	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 100 mm in FR mortar	10 mm	25 mm	2 sides	-	200x1000 mm	U/C + C/C	
Ø63	6,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600x1200 mm	U/C + C/C	
		non-insulated walls	synth. rubber 10mm CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	105 mm	U/C + C/C	
		non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	12,5 mm	2 sides	-	109 mm	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600x1200 mm	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 100 mm in FR mortar	10 mm	25 mm	2 sides	-	200x1000 mm	U/C + C/C	
max.												
Ø75	7,5		synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600x1200 mm	U/C + C/C	
		non-insulated walls	synth. rubber 10mm CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	117 mm	U/C + C/C	
		non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	12,5 mm	2 sides	-	121 mm	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600x1200 mm	U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 100 mm in FR mortar	10 mm	25 mm	2 sides	-	200x1000 mm	U/C + C/C	

in FT Board 2S 50 mm

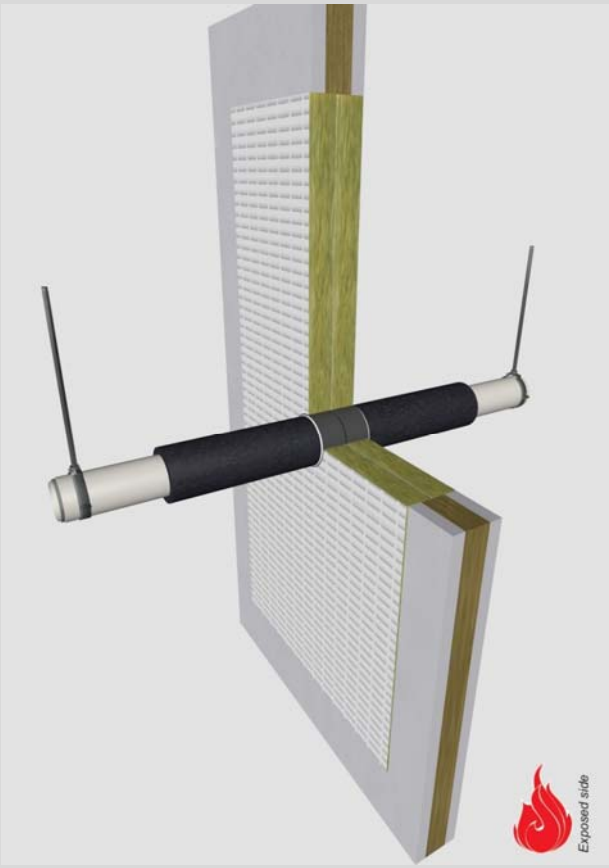
[1] Penetration services must be supported; support distance ≤ 500mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- apply smokeseal Firesafe FT Acrylic on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0266



aluPE-X pipes

Fire Wrap

service type [1] dØ (mm)	s1 (mm)	pipe insulation min. 60 kg/m³ eg Armaflex		EI	constructive element [2]	Firesafe pipe wrap length π x Ø x	no. of layers	application 1 or 2 sides	finish required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø16	2,0	synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	π x Ø x	2	2 sides	*	50 mm	U/C + C/C	perpendicular + all angles between 90° and 45°
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	π x Ø x	2	2 sides	*	600x1200 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	CLT floors ≥ 140 mm	π x Ø x	2	2 sides	*	52 mm	U/C + C/C	
Ø25	2,5	synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	π x Ø x	2	2 sides	*	59 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	π x Ø x	2	2 sides	*	600x1200 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	CLT floors ≥ 140 mm	π x Ø x	2	2 sides	*	61 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	rigid walls ≥ 100 mm in FR mortar	π x Ø x	1	2 sides	*	200x1000 mm	U/C + C/C	
Ø63	6,0	synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	π x Ø x	2	2 sides	*	97 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	π x Ø x	2	2 sides	*	600x1200 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	CLT floors ≥ 140 mm	π x Ø x	2	2 sides	*	99 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	rigid walls ≥ 100 mm in FR mortar	π x Ø x	1	2 sides	*	200x1000 mm	U/C + C/C	
max.												
Ø75	7,5	synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	π x Ø x	2	2 sides	*	109 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	π x Ø x	2	2 sides	*	600x1200 mm	U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	rigid walls ≥ 100 mm in FR mortar	π x Ø x	1	2 sides	*	200x1000 mm	U/C + C/C	

in FT Board 2S 50 mm

* smokeseal FT Acrylic on 2 sides

[1] Penetration services must be supported; support distance ≤ 500mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

PE-Xa classification ≤ Ø54 mm

Fire performances are valid for **range** of dØ pipe diameter + s1 pipe thickness within the same pipe material:
PE-Xa acc. EN norms
dØ 15(28) up to 32(54) mm
s1 2,2 up to 4,4 mm
pipe brands eg Uponor, Rehau, Geberit
pipe insulation brands eg Uponor, Armaflex

suitable Firesafe products within classification:

dØ	s1	pipe insulation	FT Graphite (DoP CPR-16/0094) walls	FT Graphite floors	FT Acrylic or FT Paste (DoP CPR-16/0094) walls	FT Acrylic or FT Paste floors	FIRE COLLAR (DoP CPR-15/0339) walls	FIRE COLLAR floors	Fire Wrap (DoP CPR-15/0339) walls	Fire Wrap floors
Ø15 (28)	2,5	non-insulated	EI 90 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5	EI 90 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5	EI 60 in wall 1+2 EI 240 in wall 3 collar Ø40	EI 240 in floor 5 collar Ø40	EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 1 layer
		+ pipe insulation + **polyolefin rubber**, min. 28 kg/m³ 10mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5			EI 120 in wall 1+2 EI 120 in wall 3 collar Ø50	EI 120 in floor 5 collar Ø50	EI 120 in wall 1+2 EI 240 in wall 3 2 layer	EI 240 in floor 5 2 layer
Ø16 (25)	2,2	non-insulated	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5	EI 120 in wall 1+2 EI 240 in wall 3 EI 90 in wall 6	EI 240 in floor 5 EI 90 in floor 7	EI 120 in wall 1+2 EI 240 in wall 3 collar Ø40	EI 240 in floor 5 collar Ø40	EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 1 layer
		+ pipe insulation + **polyolefin rubber**, min. 28 kg/m³ 10mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5			EI 120 in wall 1+2 EI 120 in wall 3 collar Ø50	EI 120 in floor 5 collar Ø50	EI 120 in wall 1+2 EI 240 in wall 3 1 or 2 layer	EI 240 in floor 5 2 layer
Ø32 (54)	4,4	non-insulated	EI 120 in wall 1+2 EI 240 in wall 3 also tested in shaft walls	EI 240 in floor 5	EI 60 in wall 1+2 EI 180 in wall 3	EI 180 in floor 5	EI 120 in wall 1+2 EI 240 in wall 3 collar Ø63	EI 240 in floor 5 collar Ø63	EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 1 layer
		+ pipe insulation + **polyolefin rubber**, min. 28 kg/m³ 20mm	EI 90 in wall 1+2 EI 120 in wall 3 also tested in shaft walls	EI 90 in floor 5			EI 60 in wall 1+2 EI 240 in wall 3 collar Ø110	EI 240 in floor 5 collar Ø110	EI 90 in wall 1+2 EI 240 in wall 3 2 layer	EI 240 in floor 5 2 layer
			joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides	

'eccentric to zero' position in opening is allowed

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported**;
support distance walls max. 500mm
support distance floors max. 400mm

Min. length pipe insulation LI / LS / CS / CI:
see principle detail.

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PP-MD
PP-MX
aluPE-X
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steel
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cables + bundles
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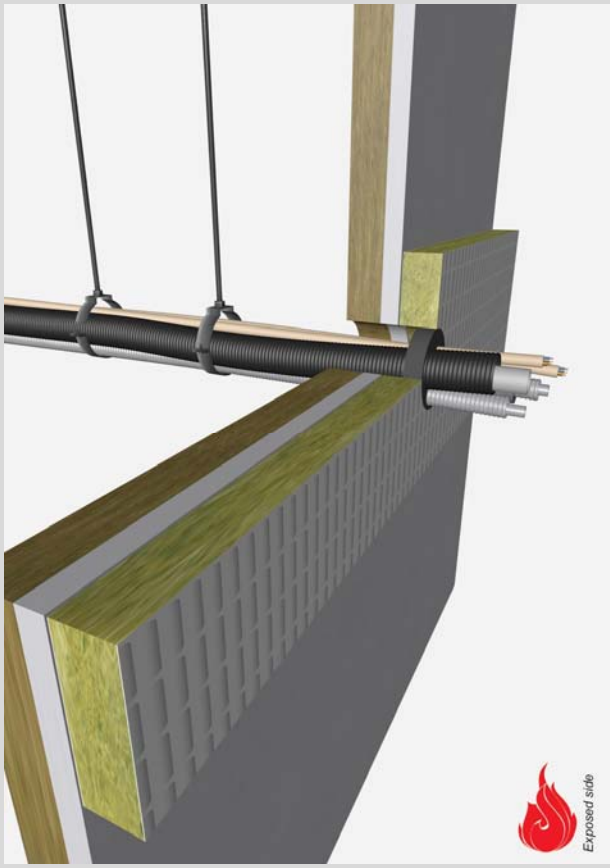
air transfer grilles
duct cladding
linear joints
socket boxes
blank seals
EN norms for plastic pipes
how-to-read
acoustical
environmental

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°
- 'eccentric to zero' position in opening is allowed

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	16-6



PE-Xa pipes

FT Graphite

service type dØ (mm)	s1 (mm)	pipe insulation min. 28 kg/m³ eg Uponor		EI	constructive element [2]	Firesafe joint seal width	Firesafe joint seal depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	
Ø15/28	2,5	-		EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	48 mm	U/C + C/C	perpendicular + all angles between 90° and 45°
		-		EI 240	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	58 mm	U/C + C/C	
	2x bundled	-		EI 60	shaft walls ≥ 75 mm	10 mm	25 mm	2 sides	-	300 x 1200 mm	U/C + C/C	
		polyolefin 10mm	1200 CS + CI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	68 mm	U/C + C/C	
		polyolefin 10mm	1200 CS + CI	EI 240	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	78 mm	U/C + C/C	
		polyolefin 10mm	1200 CS + CI	EI 60	shaft walls ≥ 75 mm	10 mm	25 mm	2 sides	-	300 x 1200 mm	U/C + C/C	
Ø16/25	2,2	-		EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	45 mm	U/C + C/C	
		-		EI 240	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	55 mm	U/C + C/C	
		polyolefin 10mm	1200 CS + CI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	65 mm	U/C + C/C	
		polyolefin 10mm	1200 CS + CI	EI 240	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	75 mm	U/C + C/C	
max.												
Ø32/54	4,4	-		EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	74 mm	U/C + C/C	
		-		EI 240	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	84 mm	U/C + C/C	
		-		EI 60	shaft walls ≥ 75 mm	10 mm	25 mm	2 sides	-	300 x 1200 mm	U/C + C/C	
		polyolefin 20mm	1200 CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	144 mm	U/C + C/C	
		polyolefin 20mm	1200 CS + CI	EI 120	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	124 mm	U/C + C/C	

on FT Board 2S 50 mm

[1] Penetration services must be supported; support distance ≤ 500mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

COPPER classification ≤ Ø76 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

copper
dØ max. 76 mm
s1 max. 14,0 mm

pipe insulation brands eg Climpipe, Rockwool, Armaflex, U Protect Pipe Section Alu2

suitable Firesafe products within classification:

dØ	s1	pipe insulation	FT Graphite (DoP CPR-16/0094) walls	FT Graphite floors	FT Acrylic or FT Paste (DoP CPR-16/0094) walls	FT Acrylic or FT Paste floors	Fire Wrap (DoP CPR-15/0339) walls	Fire Wrap floors
up to Ø28	1,0 up to 1,2	non-insulated	individual results max. EI 180 in wall	individual results max. EI 180 in floor 5	individual results max. EI 120 in wall	individual results max. EI 120 in floor 5		
up to Ø42 + synth. rubber or rock wool (alu) insulation	1,0 up to 14,0	+ pipe insulation						
	+ **synth. rubber**, min. 60 kg/m³ 13mm		EI 90 in wall 1+2+3 individual results max. EI 60 in wall 1-n75	individual results max. EI 90 in floor 7	individual results max. EI 120 in wall 3	individual results max. EI 120 in floor 5		individual results max. EI 90 in floor 7
	25mm		EI 90 in wall 1+2+3 individual result: EI 90 in wall 1-n100 individual results max. EI 60 in wall 1-n75					
	+ **rock wool** (alu), min. 90 kg/m³ 25mm		EI 60 in wall 1+2+3		individual results max. EI 90 in wall 1-n100 EI 60 in wall 1-n75 EI 120 in wall 3	individual results max. EI 120 in floor 5		
	50mm		EI 90 in wall 1+2+3					
up to Ø76 + glass or rock wool (alu) insulation	1,0 up to 2,1	+ pipe insulation						
	+ **glass or rock wool** (alu), min. 75 kg/m³ 20 up to 30mm		EI 90 in wall 1+2+3	EI 90 in floor 5			EI 90 in wall 1+2 EI 120 in wall 3 2 layer	EI 120 in floor 5 2 layer
	40mm		EI 90 in wall 1+2+3	EI 90 in floor 5			EI 90 in wall 1+2 EI 120 in wall 3 1 layer	EI 120 in floor 5 2 layer
	50mm		EI 90 in wall 1+2+3	EI 90 in floor 5			EI 90 in wall 1+2 EI 120 in wall 3 2 layer	EI 120 in floor 5 2 layer
	60mm		EI 90 in wall 3	EI 90 in floor 5			EI 60 in wall 1+2 EI 120 in wall 3 3 layer	EI 120 in floor 5 3 layer
	80mm		EI 240 in wall 3	EI 240 in floor 5			EI 60 in wall 1+2 EI 120 in wall 3 3 layer	EI 120 in floor 5 3 layer
			joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides	

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported**;
support distance walls max. 500mm
support distance floors max. 400mm

Min. length pipe insulation LI / LS / CS / CI:
see principle detail.

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how-to-read
acoustical
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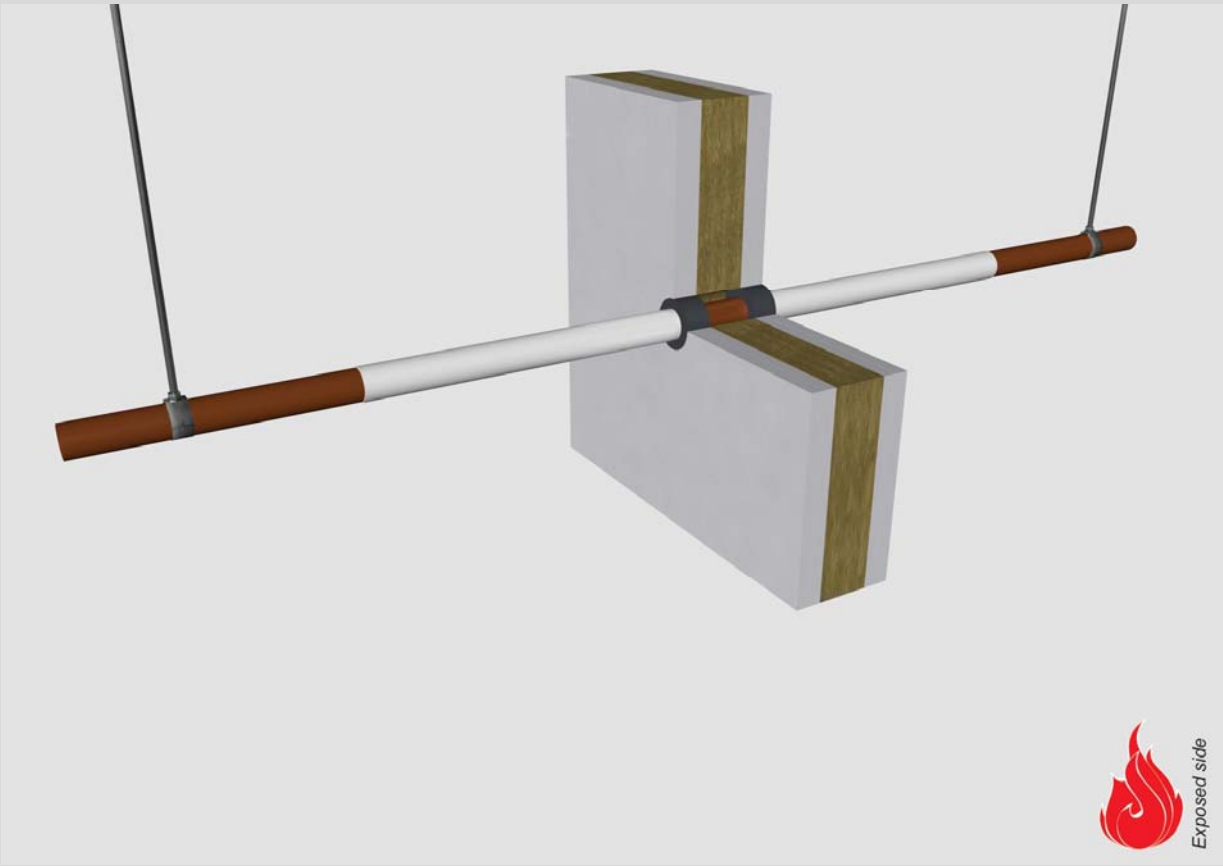
Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0298



copper pipes

FT Graphite

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT Coating DFT 0,8mm	EI	constructive element [2]	Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø8	1,0	FT Coating 200 LI	EI 90	flexible walls ≥ 100 mm	-		2 sides	-	8 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø12	1,0	FT Coating 300 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
Ø15	1,0	-	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid walls ≥ 150 mm	14 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid floors ≥ 150 mm	14 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
Ø22	1,1	FT Coating 300 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	42 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
max.											
Ø28	1,2	FT Coating 300 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	48 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 90	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 90	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	

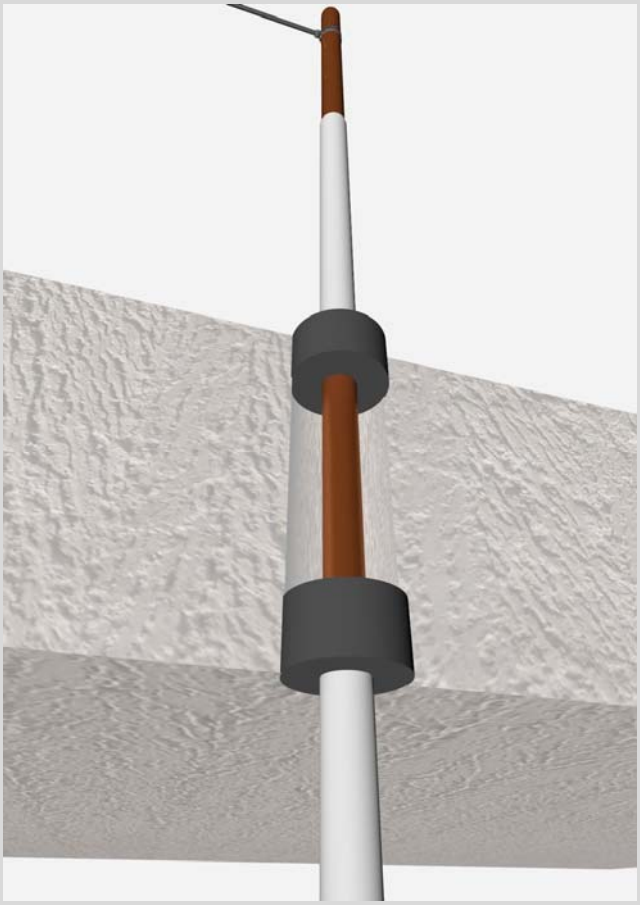
[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	8-5-2



copper pipes

FT Graphite

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT Coating DFT 0,8mm	EI	constructive element [2]	Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø8	1,0	FT Coating 200 LI	EI 90	flexible walls ≥ 100 mm	-		2 sides	-	8 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø12	1,0	FT Coating 300 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
Ø15	1,0	-	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid walls ≥ 150 mm	14 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid floors ≥ 150 mm	14 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
Ø22	1,1	FT Coating 300 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	42 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
max.											
Ø28	1,2	FT Coating 300 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	48 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 90	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
		FT Coating 200 LI	EI 90	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	

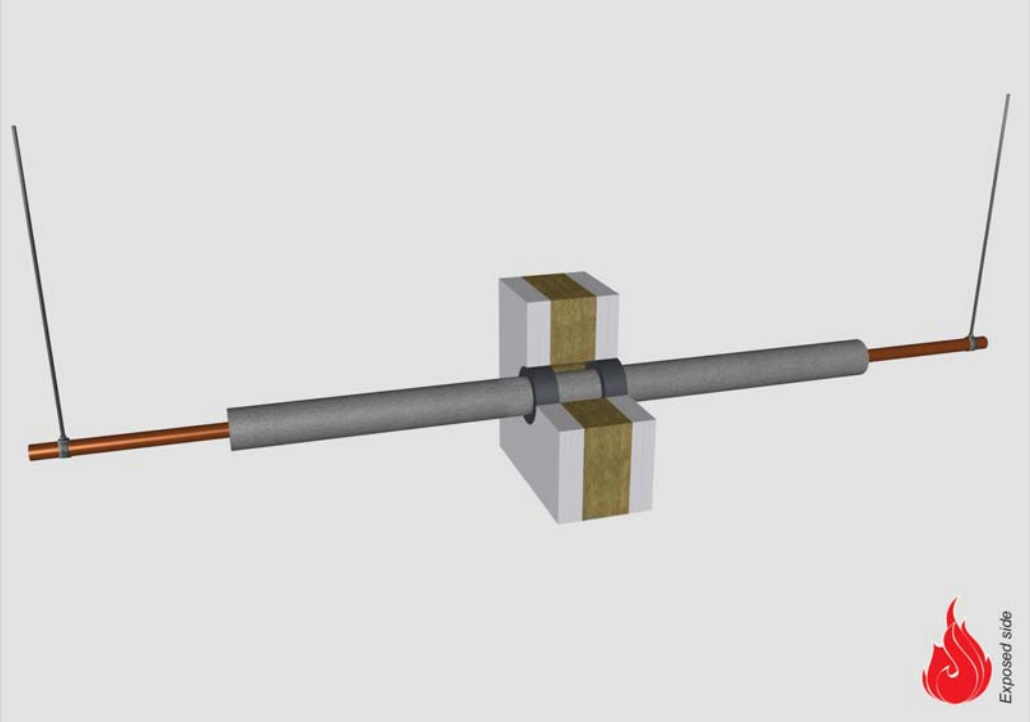
[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0061



copper pipes

FT Graphite

service type [1] dØ (mm)	s1 (mm)	non-standard config.	pipe insulation min. 60 kg/m³ eg Armaflex min. 90 kg/m³ eg Rockwool	EI	constructive element [2]	Firesafe joint seal width	Firesafe joint seal depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø12	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 90	CLT floors ≥ 140 mm	15 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø15	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	
			synth. rubber 25mm 700 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	85 mm	C/U + U/C + C/C	
			rock wool 25 mm 700 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	85 mm	C/U + U/C + C/C	
			rock wool 50 mm 700 LS + LI + CS + CI	EI 120	flexible walls ≥ 100 mm	6 mm	25 mm	2 sides	-	128 mm	C/U + U/C + C/C	
Ø22	1,1	non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 25mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	92 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600 x 1500 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 90	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	600 x 5000 mm	C/U + U/C + C/C	
Ø28	1,2	non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	74 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 25mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	98 mm	C/U + U/C + C/C	
Ø35	1,5		synth. rubber 13mm 700 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	81 mm	C/U + U/C + C/C	
			synth. rubber 25mm 700 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	6 mm	25 mm	2 sides	-	98 mm	C/U + U/C + C/C	
			rock wool 25 mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	105 mm	C/U + U/C + C/C	
			rock wool 50 mm 700 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	155 mm	C/U + U/C + C/C	
max.												
Ø42	1,5	non-insulated walls	synth. rubber 25mm CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 30	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	88 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 25mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	

in FT Board 2S 50 mm

[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

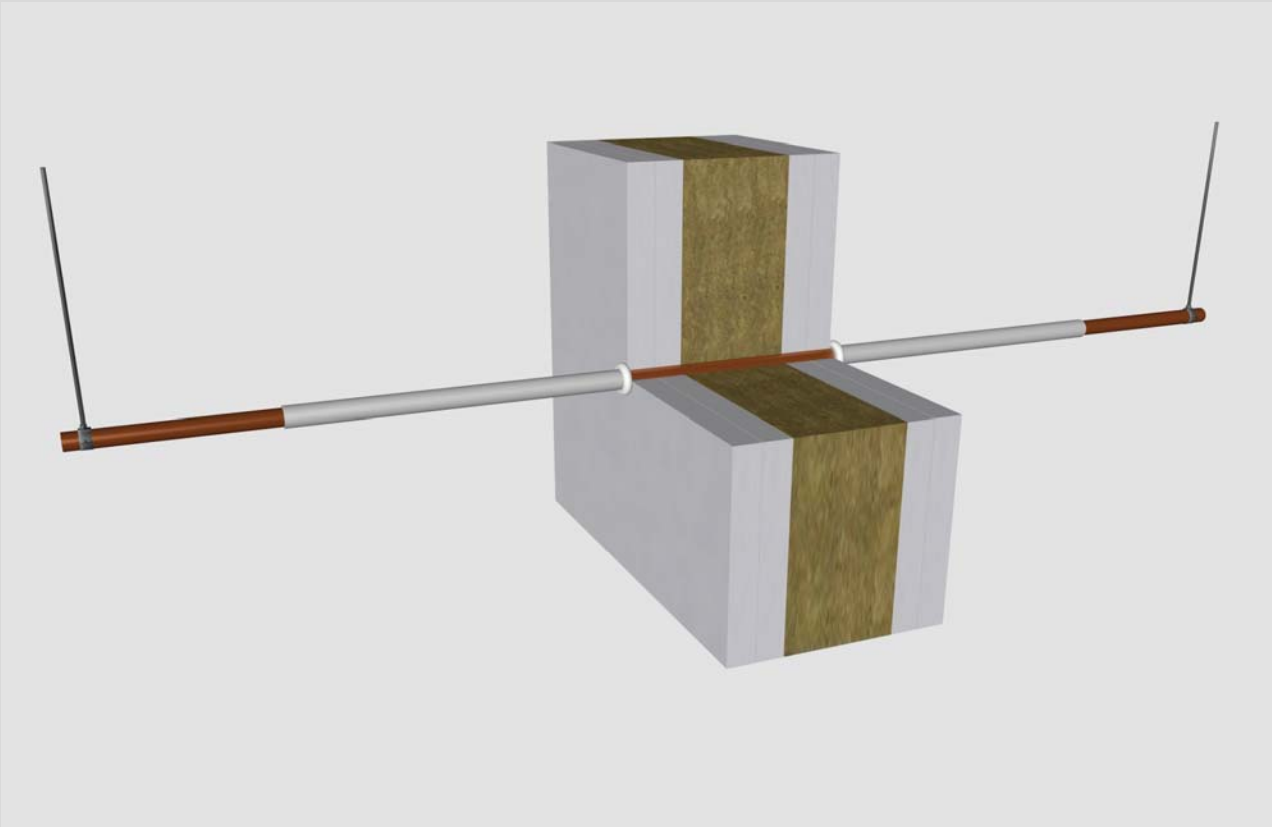
[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- other pipe dØ + s1 (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail

Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	19-48



copper pipes

FT Acrylic

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT coating DFT 0,8mm		EI	constructive element [2]	Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø8	1,0	-		EI 180	rigid walls ≥ 150 mm	8 mm bead		1 side	-	8 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø8	1,0	-		EI 180	rigid floors ≥ 150 mm	8 mm bead		1 side	-	8 mm	C/U + U/C + C/C	
Ø8	1,0	FT coating	200 LI	EI 90	flexible walls ≥ 100 mm	-		2 sides	-	8 mm	C/U + U/C + C/C	
Ø12	1,0	-		EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		-		EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		FT coating	200 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
Ø15	1,0	-		EI 120	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		-		EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
Ø22	1,1	-		EI 60	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		-		EI 60	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	42 mm	C/U + U/C + C/C	
max.												
Ø28	1,2	-		EI 60	rigid walls ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
		-		EI 60	rigid floors ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	

[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

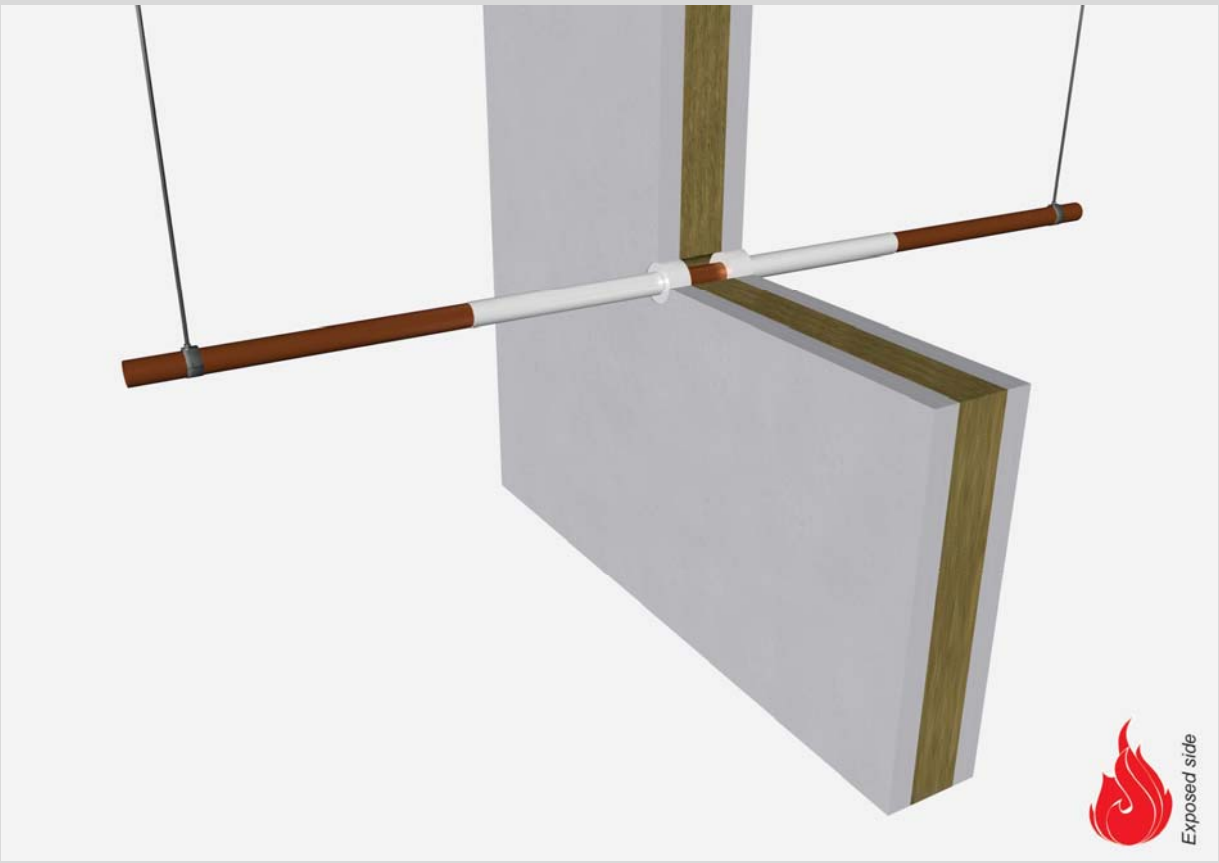
[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- other pipe dØ + s1 (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail

Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	10-50



copper pipes

FT Acrylic

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT Coating DFT 0,8mm		EI	constructive element [2]	Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø8	1,0	-		EI 180	rigid walls ≥ 150 mm	8 mm bead		1 side	-	8 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø8	1,0	-		EI 180	rigid floors ≥ 150 mm	8 mm bead		1 side	-	8 mm	C/U + U/C + C/C	
Ø8	1,0	FT Coating	200 LI	EI 90	flexible walls ≥ 100 mm	-		2 sides	-	8 mm	C/U + U/C + C/C	
Ø12	1,0	-		EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		-		EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
Ø15	1,0	-		EI 120	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		-		EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
Ø22	1,1	-		EI 60	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		-		EI 60	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	42 mm	C/U + U/C + C/C	
max.												
Ø28	1,2	-		EI 60	rigid walls ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
		-		EI 60	rigid floors ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	

[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- other pipe dØ + s1 (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail

Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	8-3-4

copper pipes

FT Acrylic

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT Coating DFT 0,8mm		EI	constructive element [2]	Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø8	1,0	-		EI 180	rigid walls ≥ 150 mm	8 mm bead		1 side	-	8 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø8	1,0	-		EI 180	rigid floors ≥ 150 mm	8 mm bead		1 side	-	8 mm	C/U + U/C + C/C	
Ø8	1,0	FT Coating	200 LI	EI 90	flexible walls ≥ 100 mm	-		2 sides	-	8 mm	C/U + U/C + C/C	
Ø12	1,0	-		EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		-		EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
Ø15	1,0	-		EI 120	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		-		EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
Ø22	1,1	-		EI 60	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		-		EI 60	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	42 mm	C/U + U/C + C/C	
max.												
Ø28	1,2	-		EI 60	rigid walls ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
		-		EI 60	rigid floors ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	

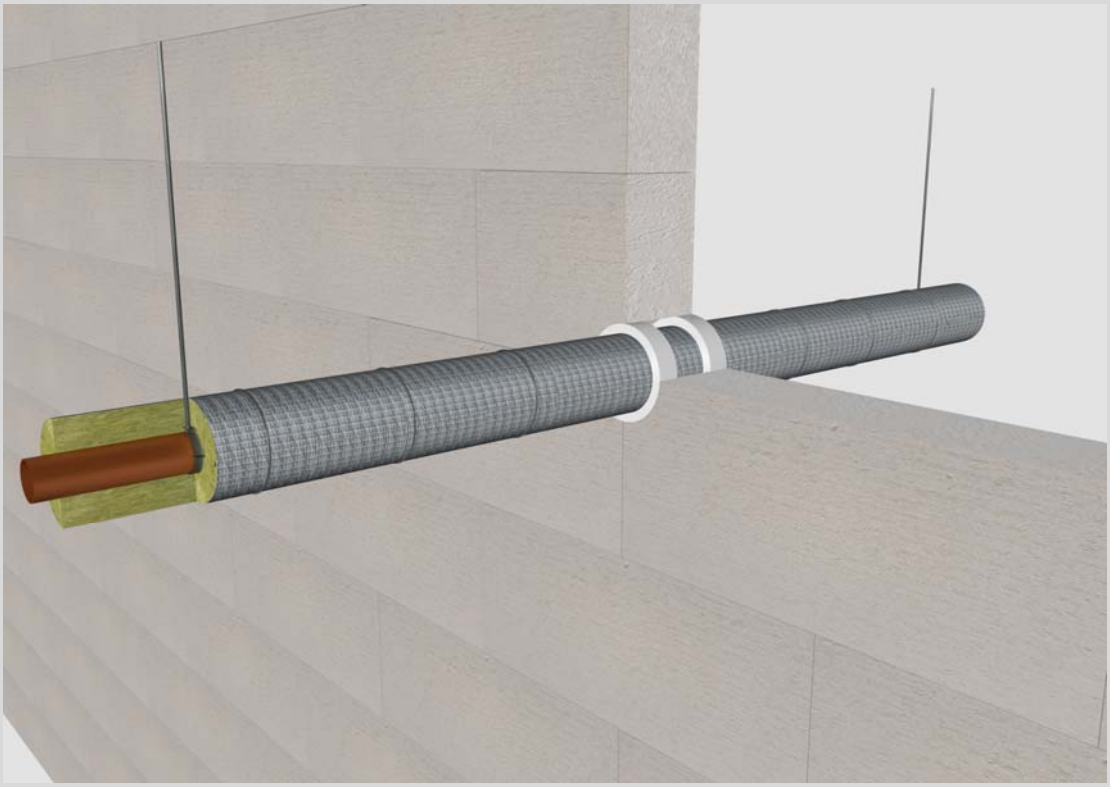
[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	8-7-5r



copper pipes

FT Acrylic

service type [1] dØ (mm)	s1 (mm)		pipe insulation min. 60 kg/m³ eg Armaflex	EI	constructive element [2]	Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø12	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	58 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	58 mm	C/U + U/C + C/C	
Ø15	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	7 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	7 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
Ø22	1,1	non-insulated walls	rock wool 25 mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	92 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	5 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	5 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
Ø28	1,2	non-insulated walls	rock wool 25 mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	98 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	74 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	74 mm	C/U + U/C + C/C	
Ø32	1,5		rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	102 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	102 mm	C/U + U/C + C/C	
Ø42	1,5	non-insulated walls	rock wool 25 mm LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	
		non-insulated walls	rock wool 25 mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	
max.												
Ø54	2,0		rock wool 32 mm 1150 LI	EI 120	rigid walls ≥ 150 mm	smokeseal		2 sides	-	200 x 200 mm	C/C	

in FT Board 2S 50 mm

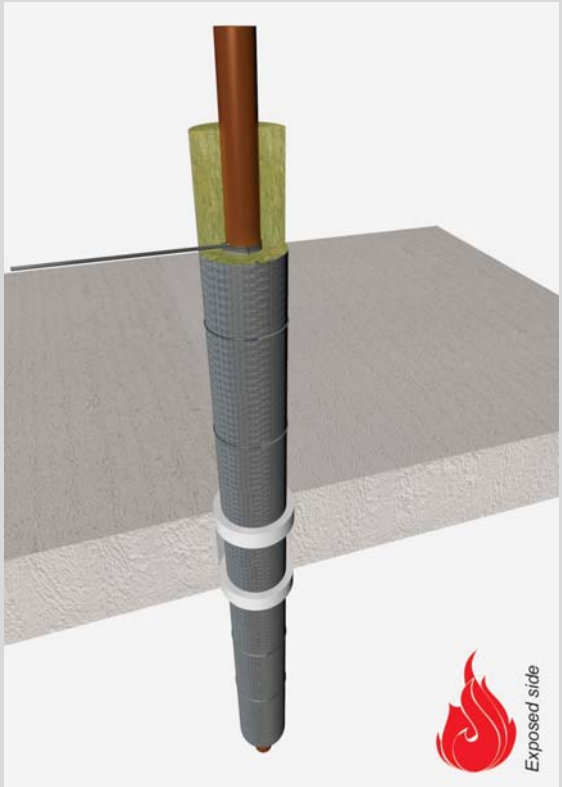
[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	8-7-5



copper pipes

FT Acrylic

service type [1] dØ (mm)	s1 (mm)		pipe insulation min. 60 kg/m³ eg Armaflex	EI	constructive element [2]	Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø12	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	58 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	58 mm	C/U + U/C + C/C	
Ø15	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	7 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	7 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
Ø22	1,1	non-insulated walls	rock wool 25 mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	92 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	5 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	5 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
Ø28	1,2	non-insulated walls	rock wool 25 mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	98 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	74 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	74 mm	C/U + U/C + C/C	
Ø32	1,5		rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	102 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	102 mm	C/U + U/C + C/C	
Ø42	1,5	non-insulated walls	rock wool 25 mm LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	
		non-insulated walls	rock wool 25 mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	
max.												
Ø54	2,0		rock wool 32 mm 1150 LI	EI 120	rigid walls ≥ 150 mm	smokeseal		2 sides	-	200 x 200 mm	C/C	

in FT Board 2S 50 mm

[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

STEEL classification ≤ Ø219 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

steel
dØ max. 219,1 mm
s1 max. 14,2 mm

pipe insulation brands eg Climpipe, Rockwool, Armaflex, U Protect Pipe Section Alu2

suitable Firesafe products within classification:

dØ	s1	pipe insulation	FT Graphite (DoP CPR-16/0094) walls	FT Graphite floors	FT Acrylic or FT Paste (DoP CPR-16/0094) walls	FT Acrylic or FT Paste floors	Fire Wrap (DoP CPR-15/0339) walls	Fire Wrap floors
steel Ø12 up to Ø219	1,0 up to 4,5 mm Ø12 up to Ø219 mm	non-insulated	individual results max. EI 120 in wall	individual results max. EI 120 in floor 5	individual results max. EI 180 in wall	individual results max. EI 180 in floor 5		
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + synth. rubber, min. 60 kg/m³ 10mm	EI 90 in wall 1+2+3	EI 90 in floor 5				
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + synth. rubber, min. 60 kg/m³ 13mm	EI 120 in wall 1+2+3 individual results max. EI 90 in wall 1-n100 EI 60 in wall 1-n75	EI 60 in floor 5 EI 90 in floor 7	individual results max. EI 120 in wall 3	individual results max. EI 120 in floor 5		EI 90 in floor 7 2 layer
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + synth. rubber, min. 60 kg/m³ 25mm	EI 60 in wall 1+2+3 EI 60 in wall 1-n100 individual results max. EI 60 in wall 1-n75	EI 60 in floor 5				
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + glass or rock wool (alu), min. 75 kg/m³ 20 up to 30mm	EI 60 in wall 1+2+3	EI 90 in floor 5			EI 60 in wall 1+2+3 1 layer	EI 90 in floor 5 2 layer
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + glass or rock wool (alu), min. 75 kg/m³ 40mm	EI 60 in wall 1+2+3	EI 90 in floor 5			EI 90 in wall 1+2+3 1 layer	EI 90 in floor 5 2 layer
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + glass or rock wool (alu), min. 75 kg/m³ 50mm	EI 90 in wall 1+2+3	EI 90 in floor 5			EI 120 in wall 1+2+3 2 layer	EI 120 in floor 5 2 layer
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + glass or rock wool (alu), min. 75 kg/m³ 60mm	EI 90 in wall 1+2+3	EI 90 in floor 5			EI 60 in wall 1+2+3 3 layer	EI 120 in floor 5 3 layer
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + glass or rock wool (alu), min. 75 kg/m³ 80mm	EI 90 in wall 1+2+3	EI 180 in floor 5			EI 60 in wall 1+2+3 3 layer	EI 120 in floor 5 3 layer
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + rock wool (alu), min. 90 kg/m³ 25mm	EI 60 in wall 1+2+3		EI 120 in wall 3 EI 60 in wall 1-n100 individual results max. EI 30 in wall 1-n75	EI 120 in floor 5 also on FT Board		
steel Ø12 up to Ø219	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + rock wool (alu), min. 90 kg/m³ 50mm	EI 90 in wall 1+2+3		individual results max. EI 90 in wall 1-n100			
steel Ø12 up to Ø219	3,25 up to 14,2 mm Ø42 up to Ø219 mm	+ pipe insulation + PIR, min. 33 kg/m³ 25mm	EI 60 in wall 1+2+3	EI 180 in floor 5				
steel Ø12 up to Ø219	3,25 up to 14,2 mm Ø42 up to Ø219 mm	+ pipe insulation + PIR, min. 33 kg/m³ 50mm	EI 60 in wall 1+2+3	EI 90 in floor 5				
			joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal FT Acrylic on 2 sides	

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported**;
support distance walls max. 500mm
support distance floors max. 400mm

Min. length pipe insulation LI / LS / CS / CI:
see principle detail.

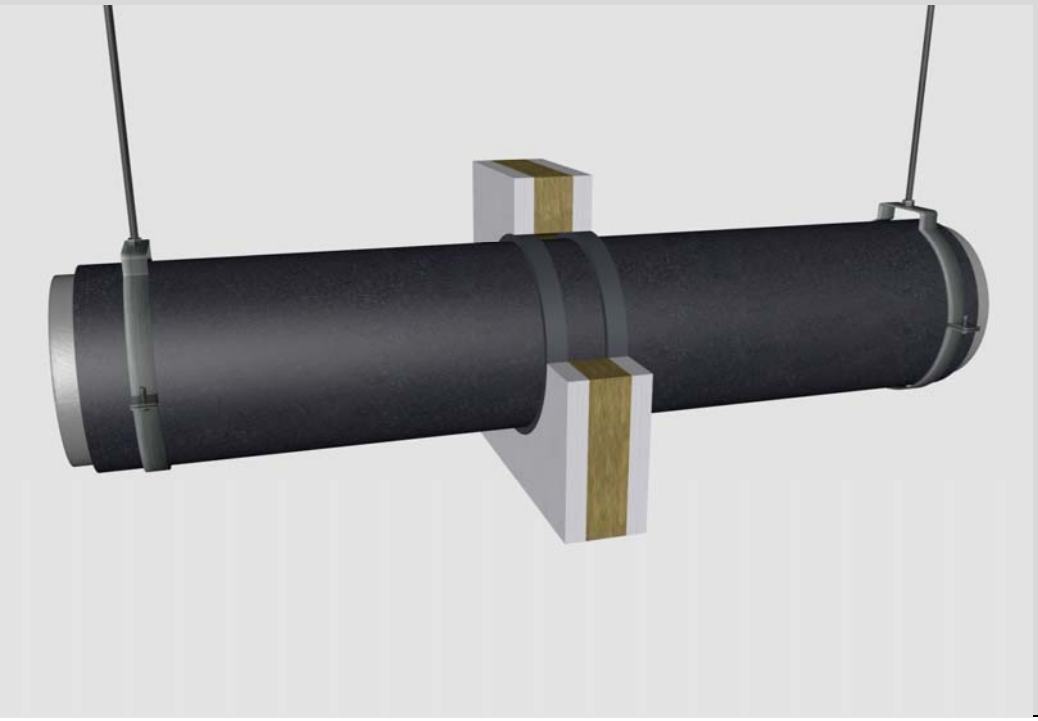
NOTE:
CONDUITS: see
STEEL CONDUITS
SPIRAL pipes: see
AIR CONTROL

► INDEX
PE + PP + PVC
plastic cable conduits
PP-R
PP-MD
PP-MX
aluPE-X
PE-Xa
copper
steel
steel conduits
cast iron
trays + ladders + wire mesh
cables + bundles
fire dampers
air transfer grilles
duct cladding
linear joints
socket boxes
blank seals
EN norms for plastic pipes
how-to-read
acoustical
environmental

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	19-3



steel pipes

FT Graphite

service type [1] dØ (mm)	s1 (mm)	non-standard config.	pipe insulation min. 60 kg/m³ eg Armaflex	EI	constructive element [2]	Firesafe jont seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø15	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
			synth. rubber 25mm 700 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	85 mm	C/U + U/C + C/C	
Ø22	1,1		synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600 x 1200 mm + 25%	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 90	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
Ø35	1,5		synth. rubber 13mm 700 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	81 mm	C/U + U/C + C/C	
			synth. rubber 25mm 700 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	6 mm	25 mm	2 sides	-	98 mm	C/U + U/C + C/C	
Ø42,2	3,25		synth. rubber 10mm 1000 LS + LI + CS + CI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 13mm CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	88 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 25mm CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	
			synth. rubber 10mm 1000 LS + LI + CS + CI	EI 240	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	102 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	89 mm	C/U + U/C + C/C	
			synth. rubber 13mm 750 LS + LI + CS + CI	EI 180	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	98 mm	C/U + U/C + C/C	
			synth. rubber 25mm 700 LS + LI + CS + CI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	
			synth. rubber 25mm 750 LS + LI + CS + CI	EI 180	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	122 mm	C/U + U/C + C/C	
Ø54	1,5	non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	100 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 25mm 700 LS + LI + CS + CI	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	124 mm	C/U + U/C + C/C	
Ø90	3,0	non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 30	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	136 mm	C/U + U/C + C/C	
Ø101,6	3,6		synth. rubber 13mm 1000 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600 x 1200 mm + 25%	C/U + U/C + C/C	
Ø114	3,0	non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 30	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	160 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 25mm 700 LS + LI + CS + CI	EI 30	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	184 mm	C/U + U/C + C/C	
Ø140	4,0	non-insulated walls	synth. rubber 13mm 700 LS + LI + CS + CI	EI 30	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	186 mm	C/U + U/C + C/C	
max.												
Ø219,1	14,2		synth. rubber 10mm 1000 LS + LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	259 mm	C/U + U/C + C/C	
			synth. rubber 13mm 1000 LS + LI + CS + CI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	265 mm	C/U + U/C + C/C	
		non-insulated walls	synth. rubber 25mm CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	289 mm	C/U + U/C + C/C	
			synth. rubber 25mm 1000 LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	600 x 1200 mm	C/U + U/C + C/C	

in FT Board 2S 50 mm

[1] Penetration services must be supported; support distance ≤ 500mm.

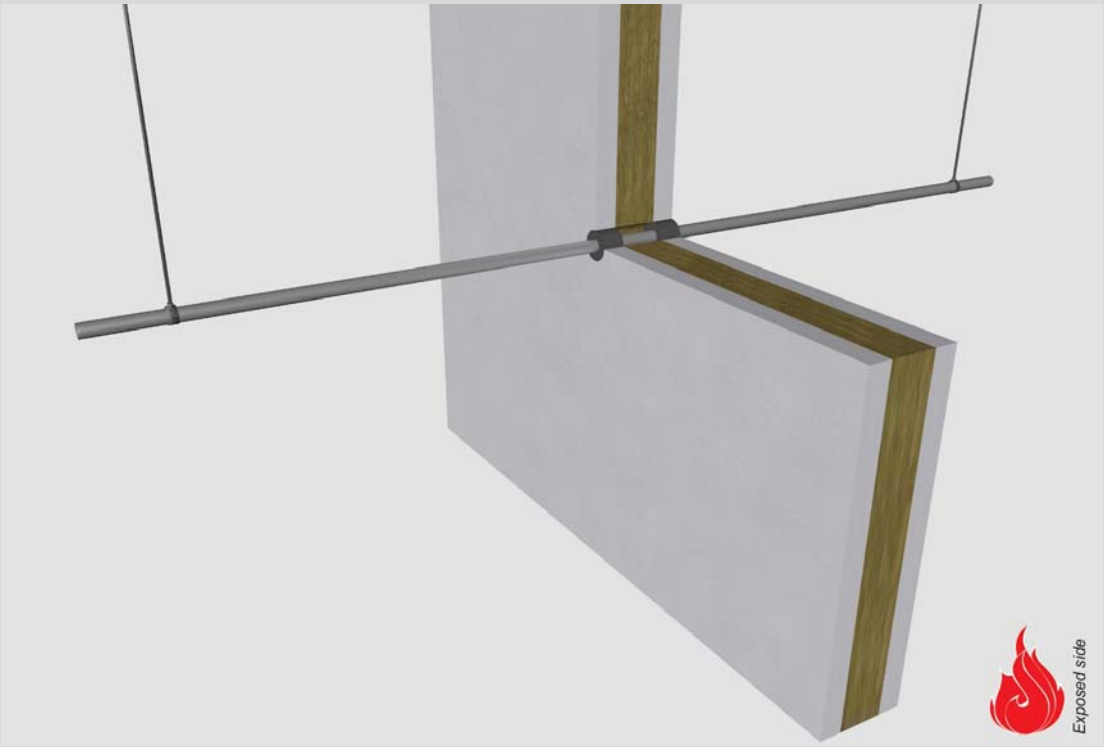
[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:

- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	20-12



steel pipes

FT Graphite

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT Coating DFT 0,8mm PA sealer 3mm		EI	constructive element [2]	Firesafe jont seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø8	1,0	FT Coating	200 LI	EI 90	flexible walls ≥ 100 mm	-	-	2 sides	-	8 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø12	1,0	FT Coating	300 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	
Ø15	1,0	-		EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 120	rigid walls ≥ 150 mm	14 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
Ø22	1,1	FT Coating	300 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	42 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
Ø26,9	2,9	FT Coating	300 LI	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	47 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
Ø28	1,2	FT Coating	300 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	48 mm	C/U + U/C + C/C	
		FT Coating	200 LI	EI 90	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
42,2	3,25	-		EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	62 mm	C/U + U/C + C/C	
		FT Coating	300 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	62 mm	C/U + U/C + C/C	
		PA sealer	300 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	
60,3	3,0	FT Coating	200 LI	EI 90	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
max.												
Ø219,1	4,5	PA sealer	300 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	245 mm	C/U + U/C + C/C	

[1] Penetration services must be supported; support distance ≤ 500mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	8-5-6

steel pipes

FT Graphite

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT Coating DFT 0,8mm PA sealer 3mm		EI	constructive element [2]	Firesafe jont seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø12	1,0	FT Coating	200 LI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
Ø15	1,0	FT Coating	200 LI	EI 120	rigid floors ≥ 150 mm	14 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
Ø22	1,1	FT Coating	200 LI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U + U/C + C/C	
Ø26,9	2,9	FT Coating	200 LI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
Ø28	1,2	FT Coating	200 LI	EI 90	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	50 mm	C/U + U/C + C/C	
max.												
60,3	3,0	FT Coating	200 LI	EI 90	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	

[1] Penetration services must be supported; support distance ≤ 400mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	22-16

steel pipes

service type [1] dØ (mm)	s1 (mm)	pipe insulation min. 60 kg/m³ eg Armaflex		EI	constructive element [2]	FT Graphite Firesafe jont seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø22	1,1	synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 60	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	600 x 5000 mm	C/U + U/C + C/C	
Ø42,2	3,25	synth. rubber 10mm	1000 LS + LI + CS + CI	EI 240	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	102 mm	C/U + U/C + C/C	
		synth. rubber 13mm	750 LS + LI + CS + CI	EI 180	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	98 mm	C/U + U/C + C/C	
		synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	CLT floors ≥ 140 mm	15 mm	25 mm	2 sides	-	98 mm	C/U + U/C + C/C	
		synth. rubber 25mm	750 LS + LI + CS + CI	EI 180	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	122 mm	C/U + U/C + C/C	
Ø89,9	3,0	synth. rubber 13mm	700 LS + LI + CS + CI	EI 90	CLT floors ≥ 140 mm	15 mm	25 mm	2 sides	-	146 mm	C/U + U/C + C/C	
Ø101,6	3,6	synth. rubber 13mm	1000 LS + LI + CS + CI	EI 90	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	148 mm	C/U + U/C + C/C	
		synth. rubber 13mm	1000 LS + LI + CS + CI	EI 60	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	600 x 5000 mm	C/U + U/C + C/C	
max.												
Ø219,1	14,2	synth. rubber 10mm	1000 LS + LI + CS + CI	EI 90	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	269 mm	C/U + U/C + C/C	
		synth. rubber 13mm	750 LS + LI + CS + CI	EI 60	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	276 mm	C/U + U/C + C/C	
		synth. rubber 25mm	750 LS + LI + CS + CI	EI 60	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	300 mm	C/U + U/C + C/C	

in FT Board 2S 50 mm

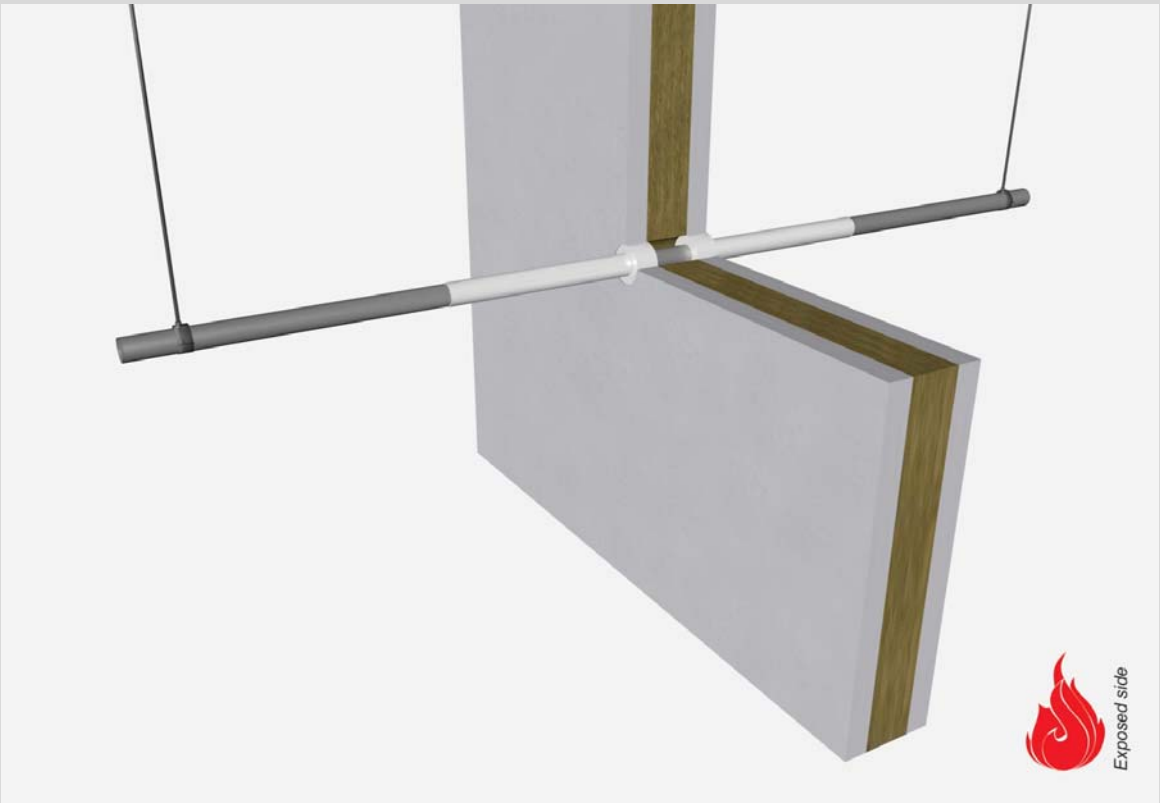
[1] Penetration services must be supported; support distance ≤ 400mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	10-50s



steel pipes

FT Acrylic

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT Coating DFT 0,8mm		EI	constructive element [2]	Firesafe jont seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø12	1,0	-		EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U	perpendicular + all angles between 90° and 45°
		-		EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U	
		FT Coating	200 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	32 mm	C/U	
Ø15	1,0	-		EI 120	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U	
		-		EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U	
		FT Coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U	
Ø22	1,1	-		EI 60	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U	
		-		EI 60	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U	
		FT Coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	42 mm	C/U	
Ø26,9	2,9	-		EI 120	rigid walls ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U	
		-		EI 120	rigid floors ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U	
Ø28	1,2	-		EI 60	rigid walls ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U	
		-		EI 60	rigid floors ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U	
max. 2x bundled		FT Coating	200 LI	EI 180	rigid walls ≥ 150 mm	smokeseal		2 sides	-	70 mm	C/U	
max. 2x bundled		FT Coating	200 LI	EI 180	rigid floors ≥ 150 mm	smokeseal		2 sides	-	70 mm	C/U	
Ø42,2	3,25	FT Coating	200 LI	EI 180	rigid walls ≥ 150 mm	smokeseal		2 sides	-	50 mm	C/U	
		FT Coating	200 LI	EI 180	rigid floors ≥ 150 mm	smokeseal		2 sides	-	50 mm	C/U	
max.												
60,3	3,0	-		EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	82 mm	C/U	
		-		EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	82 mm	C/U	

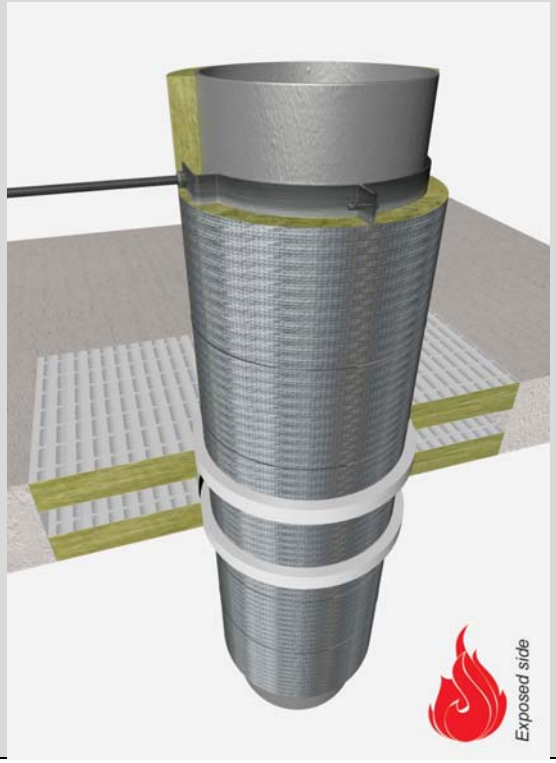
[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	17-5-4



steel pipes

FT Acrylic

service type [1] dØ (mm)	s1 (mm)	non-standard config.	pipe insulation min. 60 kg/m³ eg Armaflex	EI	constructive element [2]	Firesafe jont seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø12	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	58 mm	C/U + U/C + C/C	perpendicular + all angles between 90° and 45°
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	58 mm	C/U + U/C + C/C	
Ø15	1,0		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	61 mm	C/U + U/C + C/C	
			rock wool 25mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	7 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
			rock wool 25mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	7 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
Ø22	1,1		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	68 mm	C/U + U/C + C/C	
			rock wool 25mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	5 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
			rock wool 25mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	5 mm	25 mm	2 sides	-	82 mm	C/U + U/C + C/C	
Ø28	1,2		synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	74 mm	C/U + U/C + C/C	
			synth. rubber 13mm 700 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	74 mm	C/U + U/C + C/C	
Ø32	1,5		rock wool 25mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	102 mm	C/U + U/C + C/C	
			rock wool 25mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	102 mm	C/U + U/C + C/C	
Ø42,2	3,25	non-insulated walls	rock wool 25 mm LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	112 mm	C/U + U/C + C/C	
		non-insulated walls	rock wool 50 mm LI + CS + CI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	162mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid walls ≥ 150 mm	9 mm	25 mm	2 sides	-	110 mm	C/U + U/C + C/C	
			rock wool 25mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	9 mm	25 mm	2 sides	-	110 mm	C/U + U/C + C/C	
Ø54	2,0	non-insulated walls	rock wool 25 mm 700 LS + LI + CS + CI	EI 30	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	124 mm	C/U + U/C + C/C	
			rock wool 32 mm 1150 LI	EI 120	rigid walls ≥ 150 mm	smokeseal		2 sides	-	200 x 200 mm	C/C	
Ø114	3,0	non-insulated walls	rock wool 25 mm 700 LS + LI + CS + CI	EI 30	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	184 mm	C/U + U/C + C/C	
max.												
Ø219,1	4,50	non-insulated walls	rock wool 25 mm LS + LI + CS + CI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	289 mm	C/U + U/C + C/C	
			rock wool 25 mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	299 mm	C/U + U/C + C/C	
			rock wool 25mm 1000 LS + LI + CS + CI	EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	600 x 700 mm	C/U + U/C + C/C	

in FT Board 2S 50 mm

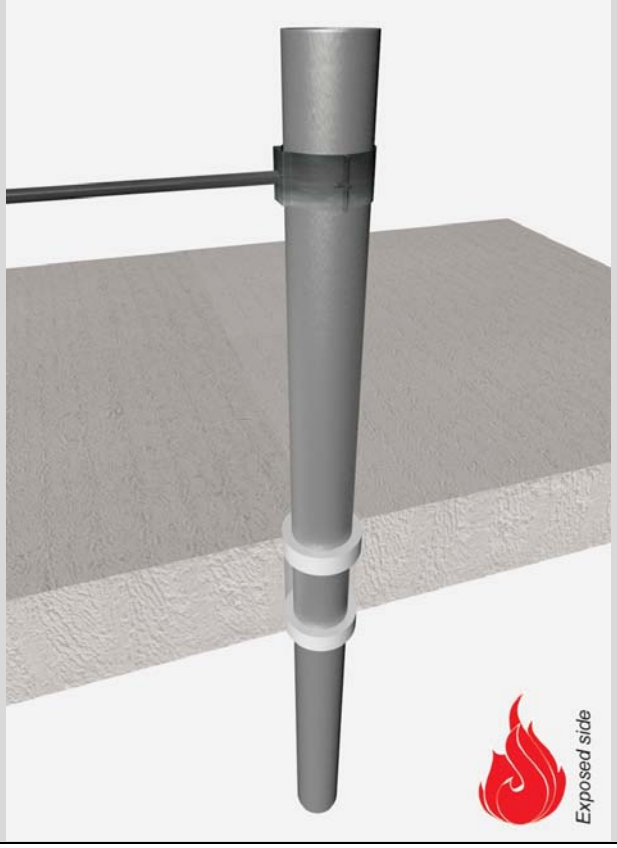
[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall/floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	8-3-6



steel pipes

FT Acrylic

service type [1] dØ (mm)	s1 (mm)	pipe insulation FT Coating DFT 0,8mm		EI	constructive element [2]	Firesafe jont seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
up to												
Ø12	1,0	-		EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U	perpendicular + all angles between 90° and 45°
		-		EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	32 mm	C/U	
		FT Coating	200 LI	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	32 mm	C/U	
Ø15	1,0	-		EI 120	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U	
		-		EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	44 mm	C/U	
		FT Coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	35 mm	C/U	
Ø22	1,1	-		EI 60	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U	
		-		EI 60	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	44 mm	C/U	
		FT Coating	200 LI	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	42 mm	C/U	
Ø26,9	2,9	-		EI 120	rigid walls ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U	
		-		EI 120	rigid floors ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U	
Ø28	1,2	-		EI 60	rigid walls ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U	
		-		EI 60	rigid floors ≥ 150 mm	11 mm	25 mm	2 sides	-	50 mm	C/U	
max. 2x bundled		FT Coating	200 LI	EI 180	rigid walls ≥ 150 mm	smokeseal		2 sides	-	70 mm	C/U	
max. 2x bundled		FT Coating	200 LI	EI 180	rigid floors ≥ 150 mm	smokeseal		2 sides	-	70 mm	C/U	
Ø42,2	3,25	FT Coating	200 LI	EI 180	rigid walls ≥ 150 mm	smokeseal		2 sides	-	50 mm	C/U	
		FT Coating	200 LI	EI 180	rigid floors ≥ 150 mm	smokeseal		2 sides	-	50 mm	C/U	
max.												
60,3	3,0	-		EI 120	rigid walls ≥ 150 mm	10 mm	25 mm	2 sides	-	82 mm	C/U	
		-		EI 120	rigid floors ≥ 150 mm	10 mm	25 mm	2 sides	-	82 mm	C/U	

[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

TRAYS + LADDERS + WIRE MESH classification ≤ 600 mm

Fire performances are valid for for **range** of cable group + max. Cu mm² with steel services:

	cable group 1 + 2 + 3 + 5
dØ	up to 80 mm
	cable group 4 (data + fibre optic)
dØ	up to 100 mm

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:
1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

suitable Firesafe products within classification:

service size	Cu mm²	cable specs	FT Graphite (DoP CPR-16/0094)	FT Acrylic or FT Paste (DoP CPR-16/0094)	FT Board (DoP CPR-16/0103)	or GPG	max. opening (mm)	support distance (mm)
cable trays ≤ 500mm + **cable ladders** ≤ 300mm	max. Cu mm² = **29647**	each cable assembly within max. Cu mm²; **all** cable groups are allowed, max.: Ø 21mm group 1 - small sheathed; Ø 61mm group 2 - medium sheathed; Ø 80mm group 3 - large sheathed; Ø 100mm group 4 - data + fibre optic; Ø 23mm group 5 - non-sheathed; all conduits: max. 3x Ø 16mm steel / plastic		EI 60 in wall 1+2+3	2x 50mm 2S	100mm	600x1200	at 250mm + 500mm
				EI 30 in wall 1+2+3	2x 50mm 2S	100mm	600x1200	at 500mm
				EI 30 in wall 2+3	1x 50mm 2S	50mm	600x1200	at 500mm
				EI 60 in floor 5	2x 50mm 2S	100mm	600x5000	at 250mm + 400mm
cable trays ≤ 500mm + **cable ladders** ≤ 300mm	max. Cu mm² = **15707**	each cable assembly within max. Cu mm²; **all** cable groups are allowed, max.: Ø 21mm group 1 - small sheathed; Ø 47mm group 2 - medium sheathed; Ø 52mm group 3 - large sheathed; Ø 100mm group 4 - data + fibre optic; Ø 23mm group 5 - non-sheathed; all conduits: max. 3x Ø 16mm steel / plastic	EI 60 in wall 1+2+3	EI 60 in wall 1+2+3	2x 50mm 2S	100mm	600x1200 +25%	at 500mm
			EI 60 in floor 5	EI 60 in floor 5	2x 50mm 2S	100mm	600x5000	at 250mm + 400mm
trays / ladders ≤ 600mm	max. Cu mm² = **12619**	each cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed; group 4 - data + fibre optic	results max. EI 180 in wall 3	EI 120 in wall 1+2+3	1x 50mm 2S	50mm	620 x 70	at 500mm
				EI 60 in wall 1+2+3	-	-	620 x 70	at 500mm
				EI 30 in wall 1n-75	-	-	220 x 80	at 250mm + 500mm
wire mesh trays ≤ 600mm	max. Cu mm² = **6401**	each cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed; group 2 - medium sheathed; group 4 - data + fibre optic		EI 60 in wall 1+2+3	2x 50mm 2S	100mm	730 x 230	at 250mm + 500mm
				EI 90 in wall 1+2+3	2x 50mm 2S	100mm	660 x 120	at 250mm + 500mm
				EI 30 in wall 1n-75	-	-	420 x 100	at 250mm + 500mm
				EI 60 in floor 5	2x 50mm 2S	100mm	600 x 800	at 400mm

joint details, default:
walls: 5mm around cables, apply on 2 sides
floors: 5mm around cables, apply on 2 sides

finish, default:
NO coating on cables, cable tray or on constructive element !

Max. opening in constructive element: see also principle detail.

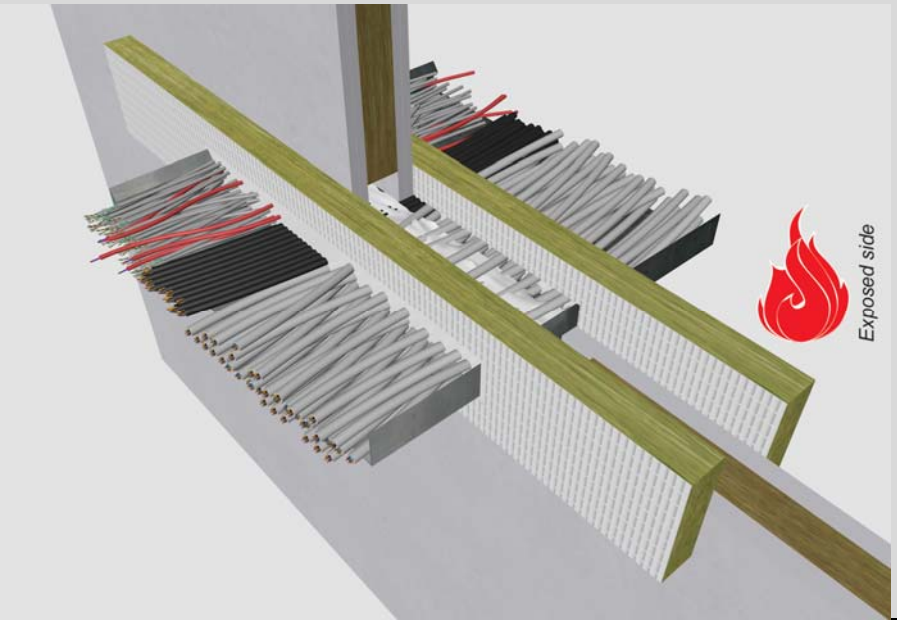
Penetration services must be **supported**.

► INDEX
PE + PP + PVC
plastic cable conduits
PP-R
PP-MD
PP-MX
aluPE-X
PE-Xa
copper
steel
steel conduits
cast iron
trays + ladders + wire mesh
cables + bundles
fire dampers
air transfer grilles
duct cladding
linear joints
socket boxes
blank seals
EN norms for plastic pipes
how-to-read
acoustical
environmental

Notes:
- installation instructions in TDS
- **all cable dØ** are allowed within group type and max. Cu mm²
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- default: coating on cables and/or trays is **NOT** required!

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	21-15
tested property	smoke resistance
test method	EN 1634-3
	NEN 6075



cables in trays + ladders + wire mesh

cable specs	assembly group	Cu (mm²) max.	service specs (steel)	non-standard config.	EI	constructive element [1]	FT Acrylic: Firesafe joint seal width (mm)	application 1 or 2 sides	max. opening in construction	FT Board: Firesafe fire board type 2S 50 mm 1 or 2 sides	finish required	support distance [2] service
trays, perforated + non-perforated												
cables only												
group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm group 3 - large sheathed ≤ Ø 80mm group 4 - data + fibre optic ≤ Ø 100mm group 5 - non-sheathed ≤ Ø 23mm plastic or steel conduits ≤ Ø 16mm	29647	≤ 500 x 60 mm		EI 60	flexible walls ≥ 100 mm	5 mm	2 sides	600 x 1200 mm	2 sides	-	250 + 500 mm
				EI 30	flexible walls ≥ 100 mm	5 mm	2 sides	600 x 1200 mm	2 sides	-	500 mm
				EI 30	rigid walls ≥ 100 mm	5 mm	2 sides	600 x 1200 mm	1 side	-	500 mm
				EI 60	rigid floors ≥ 150 mm	5 mm	2 sides	600 x 5000 mm	2 sides	-	250 + 400 mm
group 1 - small sheathed ≤ Ø 21mm group 4 - data + fibre optic	12619	≤ 600 x 50 mm		EI 60	flexible walls ≥ 100 mm	10 mm	2 sides	620 x 70 mm	-	-	500 mm
				EI 120	flexible walls ≥ 100 mm	10 mm	2 sides	620 x 70 mm	1 side	-	500 mm
group 1 - small sheathed ≤ Ø 21mm group 4 - data + fibre optic	1806	≤ 350 x 60 mm		EI 90	rigid walls ≥ 150 mm	-	-	450 x 200 mm	1 side	200 LI *	500 mm
group 4 - data + fibre optic	12842	≤ 200 x 60 mm	non-insulated walls	EI 30	flexible walls ≥ 75 mm	10 mm 12,5 mm	2 sides	220 x 80 mm	2 sides	20 mm **	500 mm
cables + pipes (mixed configuration)												
group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm group 3 - large sheathed ≤ Ø 80mm group 4 - data + fibre optic ≤ Ø 100mm group 5 - non-sheathed ≤ Ø 23mm plastic or steel conduits ≤ Ø 16mm	15707	≤ 500 x 60 mm		EI 60	flexible walls ≥ 100 mm	5 mm	2 sides	600 x 1200 mm + 25%	2 sides	-	500 mm
				EI 60	rigid floors ≥ 150 mm	5 mm	2 sides	600 x 5000 mm	2 sides	-	250 + 400 mm
cable ladders												
cables only												
group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm group 3 - large sheathed ≤ Ø 80mm group 4 - data + fibre optic ≤ Ø 100mm group 5 - non-sheathed ≤ Ø 23mm plastic or steel conduits ≤ Ø 16mm	29647	≤ 300 x 60 mm		EI 60	flexible walls ≥ 100 mm	5 mm	2 sides	600 x 1200 mm	2 sides	-	250 + 500 mm
				EI 30	flexible walls ≥ 100 mm	5 mm	2 sides	600 x 1200 mm	2 sides	-	500 mm
				EI 30	rigid walls ≥ 100 mm	5 mm	2 sides	600 x 1200 mm	1 side	-	500 mm
				EI 60	rigid floors ≥ 150 mm	5 mm	2 sides	600 x 5000 mm	2 sides	-	250 + 400 mm
group 1 - small sheathed ≤ Ø 21mm group 4 - data + fibre optic	12842	≤ 200 x 60 mm	non-insulated walls	EI 30	flexible walls ≥ 75 mm	10 mm 12,5 mm	2 sides	220 x 80 mm	2 sides	20 mm **	500 mm
group 4 - data + fibre optic	2781	≤ 350 x 60 mm		EI 120	rigid walls ≥ 150 mm	-	-	450 x 200 mm	1 side	200 LI *	500 mm
group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm	780	≤ 300 x 60 mm		EI 180	rigid floors ≥ 150 mm	-	-	400 x 200 mm	2 sides		400 mm

>> contined on page 2

in FT Board 2S 50 mm

* FT Coating, DFT 0,8mm

** 20 mm perimeter

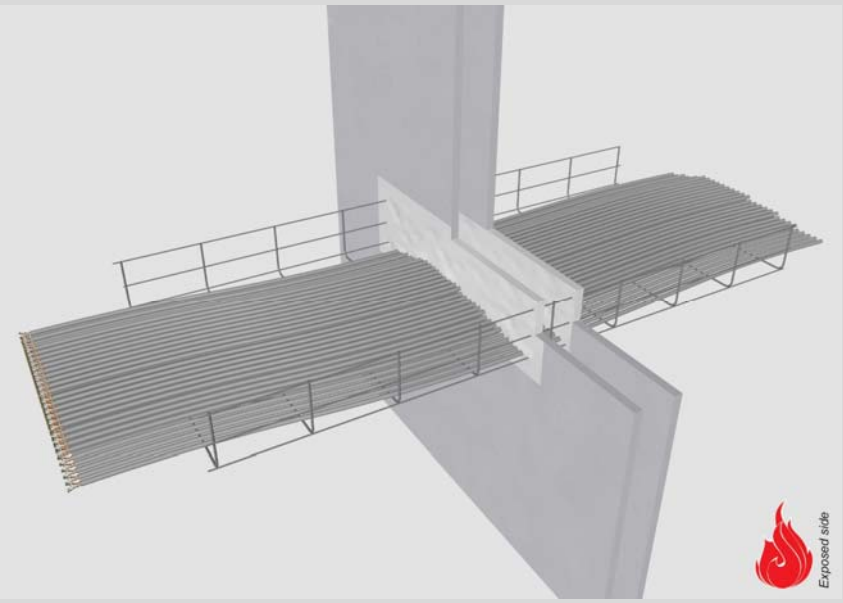
[1] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

[2] Penetration services (cable trays etc.) must be supported.

Notes:
- installation instructions in TDS
- **all cable dØ** are allowed within group type and max. Cu mm²
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- default: coating on cables and/or trays is **NOT** required!

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	31-59
tested property	smoke resistance
test method	EN 1634-3
	NEN 6075



cables in trays + ladders + wire mesh

cable ladders

cables + pipes (mixed configuration)

cable specs	group	assembly Cu (mm²) max.	service specs (steel)	non-standard config.	EI	constructive element [1]	FT Acrylic: Firesafe joint seal width (mm)	application 1 or 2 sides	max. opening in construction	FT Board: Firesafe fire board type 2S 50 mm 1 or 2 sides	finish required	support distance [2] service
group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm group 3 - large sheathed ≤ Ø 80mm group 4 - data + fibre optic ≤ Ø 100mm group 5 - non-sheathed ≤ Ø 23mm plastic or steel conduits ≤ Ø 16mm		15707	≤ 300 x 60 mm		EI 60	flexible walls ≥ 100 mm	5 mm	2 sides	600 x 1200 mm + 25%	2 sides	-	500 mm
					EI 60	rigid floors ≥ 150 mm	5 mm	2 sides	600 x 5000 mm	2 sides	-	250 + 400 mm

trays, wire mesh

cables only

group 1 - small sheathed ≤ Ø 21mm	15266	≤ 400 x 80 mm	non-insulated walls	EI 60	flexible walls ≥ 75 mm	10 mm 12,5 mm	2 sides	420 x 100 mm	2 sides	20 mm **	500 mm
group 4 - data + fibre optic	12842	400 x 80 mm	non-insulated walls	EI 30	flexible walls ≥ 75 mm	10 mm 12,5 mm	2 sides	420 x 100 mm	2 sides	20 mm **	500 mm
	6401	≤ 600 x 55 mm		EI 90	flexible walls ≥ 100 mm no trimming, no wall insulation for 100mm perimeter	5 mm	2 sides	660 x 120 mm	2 sides	-	250 + 500 mm

cables + pipes (mixed configuration)

group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm group 4 - data + fibre optic	6093	≤ 600 x 105 mm		EI 60	flexible walls ≥ 100 mm no trimming, no wall insulation for 100mm perimeter	5 mm	2 sides	730 x 230 mm	2 sides	-	250 + 500 mm
group 1 - small sheathed ≤ Ø 21mm group 4 - data + fibre optic	6374	≤ 600 x 60 mm		EI 60	rigid floors ≥ 150 mm	5 mm	2 sides	600 x 800 mm	2 sides	-	400 mm

in FT Board 2S 50 mm

* FT Coating, DFT 0,8mm

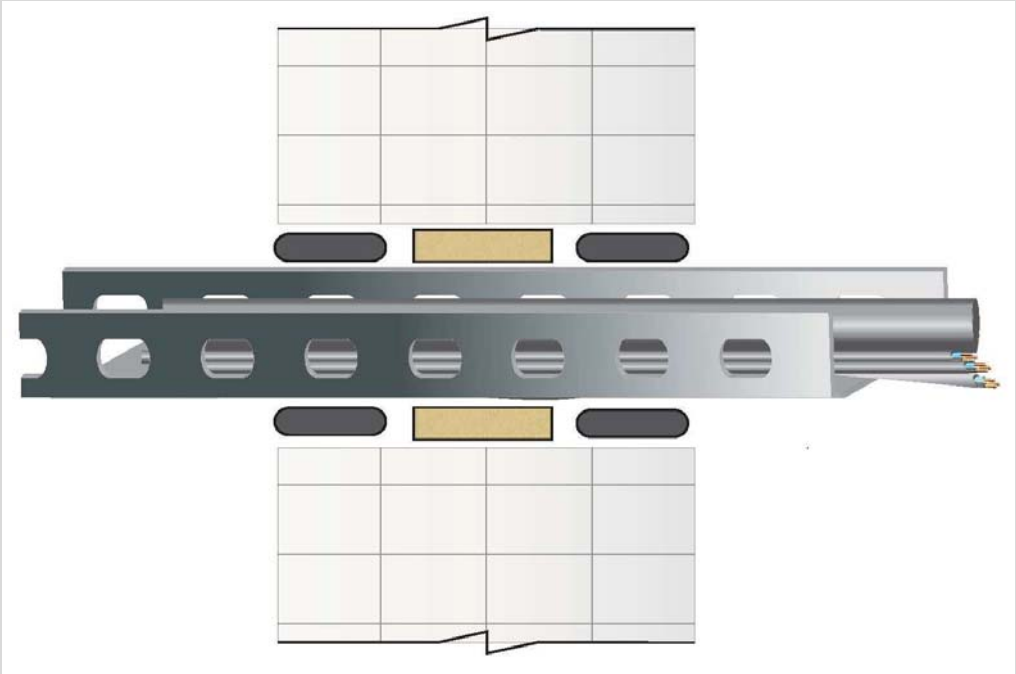
** 20 mm perimeter

[1] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

[2] Penetration services (cable trays etc.) must be supported.

Notes:
- installation instructions in TDS
- **all cable dØ** are allowed within group type and max. Cu mm²
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm
- default: coating on cables and/or trays is **NOT** required!

principle detail	**Firesafe**
tested property	fire resistance
test method	EN 1366-3
service no.	0144
tested property	smoke resistance
test method	EN 1634-3



cables in trays + ladders

cable specs	group assembly Cu (mm²) max.	service specs (steel)	EI	constructive element [1]	FT Graphite: Firesafe joint seal width (mm)	application 1 or 2 sides	max. opening in construction	FT Board: Firesafe fire board type 2S 50 mm 1 or 2 sides	finish required	support distance [2] service
trays, perforated + non-perforated										
cables only										
group 1 - small sheathed ≤ Ø 21mm group 4 - data + fibre optic	1806	≤ 350 x 60 mm	EI 90	rigid walls ≥ 150 mm	-	-	450 x 200 mm	1 side	200 LI * unexp. side	500 mm
group 1 - small sheathed ≤ Ø 21mm	524	≤ 150 x 25 mm	EI 180	rigid walls ≥ 150 mm	40 mm	2 sides	200 x 100 mm	-	RW	500 mm
cables + pipes (mixed configuration)										
group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm group 3 - large sheathed ≤ Ø 80mm group 4 - data + fibre optic ≤ Ø 100mm group 5 - non-sheathed ≤ Ø 23mm plastic or steel conduits ≤ Ø 16mm	15707	≤ 500 x 60 mm	EI 60 EI 60	flexible walls ≥ 100 mm rigid floors ≥ 150 mm	5 mm 5 mm	2 sides 2 sides	600 x 1200 mm + 25% 600 x 5000 mm	2 sides 2 sides	- -	500 mm 250 + 400 mm
cable ladders										
cables only										
group 4 - data + fibre optic	2781	≤ 350 x 60 mm	EI 120	rigid walls ≥ 150 mm	-	-	450 x 200 mm	1 side	200 LI * 2 sides	500 mm
group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm	780	≤ 300 x 60 mm	EI 180	rigid floors ≥ 150 mm	-	-	400 x 200 mm	2 sides		400 mm
cables + pipes (mixed configuration)										
group 1 - small sheathed ≤ Ø 21mm group 2 - medium sheathed ≤ Ø 50mm group 3 - large sheathed ≤ Ø 80mm group 4 - data + fibre optic ≤ Ø 100mm group 5 - non-sheathed ≤ Ø 23mm plastic or steel conduits ≤ Ø 16mm	15707	≤ 500 x 60 mm	EI 60 EI 60	flexible walls ≥ 100 mm rigid floors ≥ 150 mm	5 mm 5 mm	2 sides 2 sides	600 x 1200 mm + 25% 600 x 5000 mm	2 sides 2 sides	- -	500 mm 250 + 400 mm

in FT Board 2S 50 mm

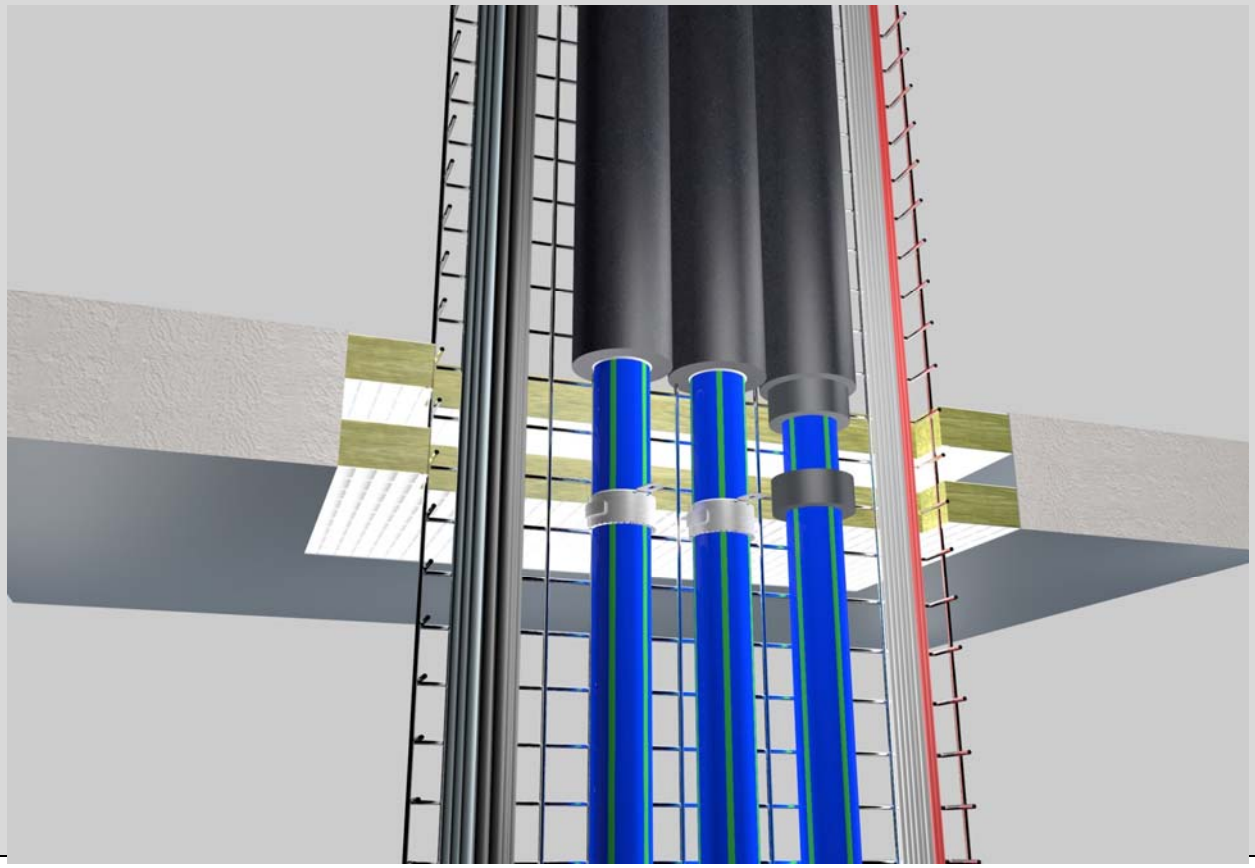
[1] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

[2] Distance between cable trays and/or cable ladders must be 100 mm unless specified.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with floor on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	17-6-6g



PP-R pipes

service type dØ (mm)	s1 (mm)	pipe insulation min. 28 kg/m3 eg Uponor		EI	constructive element [2]	FT Graphite Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction	pipe end configuration	max. angle
Ø40	min. 3,7	-		EI 240	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	70 mm	U/C + C/C	perpendicular + all angles between 90° and 45°
	max. 5,5	-		EI 240	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	70 mm	U/C + C/C	
Ø63	min. 5,8	-		EI 240	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	93 mm	U/C + C/C	
	max. 8,6	-		EI 180	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	93 mm	U/C + C/C	
	5,8	polyolefin 25mm	750 LS + LI + CS + CI	EI 60	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	600 x 800 mm	U/C + C/C	
Ø75	min. 6,8	-		EI 240	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	105 mm	U/C + C/C	
	max. 10,3	-		EI 180	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	105 mm	U/C + C/C	
max.												
Ø110	min. 10	-		EI 180	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	140 mm	U/C + C/C	
	max. 15,1	-		EI 90	rigid floors ≥ 150 mm	15 mm	40 mm	2 sides	-	140 mm	U/C + C/C	

in FT Board 2S 50 mm

[1] Penetration services must be supported; support distance ≤ 400mm.

[3] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

CABLE BUNDLES classification ≤ 121 mm

Fire performances are valid for for **range** of cable group + max. Cu mm²:

cable group 1 + 2 + 4 + 5
dØ up to 31 mm

also cables in plastic conduits
dØ up to 110 mm

suitable Firesafe products within classification:

bundle size	cable specs	FT Graphite DoP CPR-16/0094	FT Acrylic or FT Paste DoP CPR-16/0094	Cable Transit DoP CPR-15/0339	Flex Plug DoP CPR-15/0339	FIRE COLLAR DoP CPR-15/0339
max. Ø 40 mm	cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed group 2 - medium sheathed group 4 - data + fibre optic conduit, plastic		EI 120 in wall 1+2 EI 240 in wall 3 EI 90 in wall 6 EI 240 in floor 5 EI 90 in floor 7		EI 120 in wall 1+2 EI 240 in wall 3 EI 240 in floor 5	
max. Ø 55 mm	cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed group 4 - data + fibre optic conduit, plastic	EI 60 in wall 1-n75	EI 90 in wall 1+2 EI 180 in wall 3 EI 180 in floor 5	EI 120 in wall 1+2+3 EI 90 in wall 6 EI 90 in floor 7		
max. Ø 121 mm	cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed group 2 - medium sheathed group 4 - data + fibre optic conduit, plastic	EI 120 in wall 1+2+3 EI 90 in wall 1-n100 EI 60 in wall 1-n75 EI 90 in wall 6 EI 240 in floor 5 EI 120 in ceiling 4 EI 90 in floor 7	EI 120 in wall 1+2+3 EI 90 in wall 6 EI 180 in floor 5 also on FT Board EI 90 in floor 7	EI 90 in wall 1+2+3 EI 120 in floor 5		EI 120 in wall 1+2+3 EI 240 in floor 5
		joint details: min. W x D, default: walls: 10 x 25 mm, apply on 2 sides floors: 15 x 25 mm, apply on 2 sides		position centrally in construction mount with FT Acrylic put loose rock wool ≥ 100kg/m³ in transit on 2 sides	position centrally in construction	default: walls: apply on 2 sides floors: apply on 1 side apply smokeseal FT Acrylic

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported**;
support distance walls max. 500mm
support distance floors max. 400mm

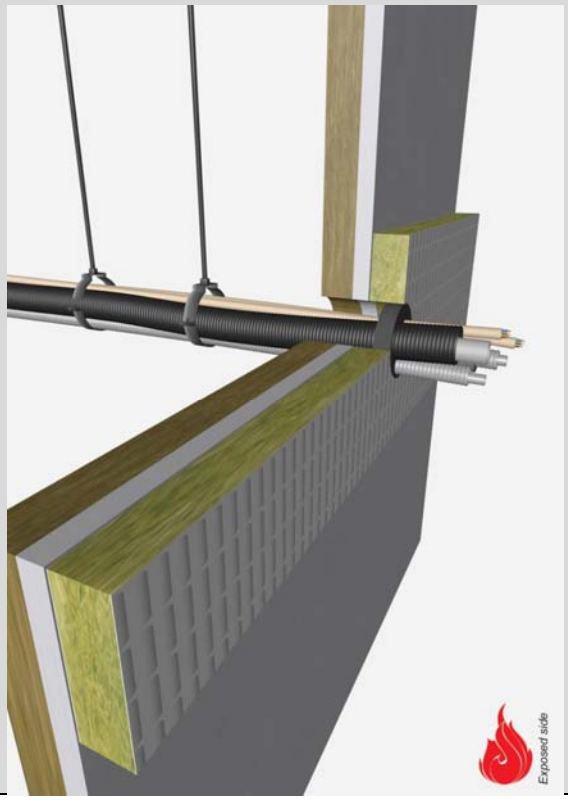
NOTE:
CONDUITS in trays + ladders: see **CABLE TRAYS**

► INDEX
PE + PP + PVC
plastic cable conduits
PP-R
PP-MD
PP-MX
aluPE-X
PE-Xa
copper
steel
steel conduits
cast iron
trays + ladders + wire mesh
cables + bundles
fire dampers
air transfer grilles
duct cladding
linear joints
socket boxes
blank seals
EN norms for plastic pipes
how-to-read
acoustical
environmental

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with floor on 2 sides
- **other cable dØ** are allowed within range and same conduit material

Firesafe

fire resistance
EN 1366-3
16-6c



cables

bundle dØ (mm)	cable specs [1] group	conduit	assembly Cu (mm²)	non-standard config.	EI	constructive element [2]	FT Graphite Firesafe joint seal width	depth	application 1 or 2 sides	backing required	max. opening in construction
up to			max.								
Ø50	group 1 -small sheathed ≤ Ø 16mm	-	1862	non-insulated walls	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø70
	group 4 - data + fibre optic	-	1605	non-insulated walls	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø40
	group 1 -small sheathed ≤ Ø 16mm	-	1862	non-insulated walls	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	Ø70
	group 4 - data + fibre optic	-	1605	non-insulated walls	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	Ø40
	group 1 -small sheathed ≤ Ø 16mm	PE/PVC conduit *	186	non-insulated walls	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	Ø70
	group 4 - data + fibre optic	PE conduit *	161	non-insulated walls	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	Ø70
Ø110	group 1 -small sheathed ≤ Ø 16mm	PVC conduit **	1438	non-insulated walls	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø110 or 120x40
	group 4 - data + fibre optic	PVC conduit **	1438	non-insulated walls	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø110 or 120x40
	mix of group 1 + 4	PVC conduit **	1438	non-insulated walls	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø110 or 120x40
	group 1 -small sheathed ≤ Ø 16mm	PVC conduit	693	non-insulated walls	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	Ø110
	group 4 - data + fibre optic	PVC conduit	693	non-insulated walls	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	Ø110
	mix of group 1 + 4	PVC conduit	693	non-insulated walls	EI 60	flexible walls ≥ 75 mm	10 mm	25 mm	2 sides	-	Ø110
	group 1 -small sheathed ≤ Ø 16mm	-	8429		EI 90	CLT walls ≥ 100 mm	15 mm	25 mm	2 sides	-	Ø130
	group 1 -small sheathed ≤ Ø 16mm	-	8429		EI 90	CLT floors ≥ 140 mm	15 mm	25 mm	2 sides	-	Ø130
max.											
Ø121	<blank>	PVC conduit	-		EI 90	CLT walls ≥ 100 mm	15 mm	25 mm	2 sides	-	Ø140
	<blank>	PVC conduit	-		EI 90	CLT floors ≥ 140 mm	15 mm	25 mm	2 sides	-	Ø140
	group 1 - small sheathed ≤ Ø 21mm	-	9309		EI 120	flexible walls ≥ 100 mm	30 mm	25 mm	2 sides	50 mm RW	Ø170
	group 1 - small sheathed ≤ Ø 21mm	PVC-U conduit *	730		EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø110
	group 1 - small sheathed ≤ Ø 21mm	hdPE conduit	621		EI 120	flexible walls ≥ 100 mm	15 mm	25 mm	2 sides	-	Ø102
	group 2 - medium sheathed ≤ Ø 50mm	hdPE conduit	621		EI 120	flexible walls ≥ 100 mm	15 mm	25 mm	2 sides	-	Ø102
	mix of group 1 + 2	hdPE conduit	621		EI 120	flexible walls ≥ 100 mm	15 mm	25 mm	2 sides	-	Ø102
	group 1 - small sheathed ≤ Ø 21mm	PVC-U conduit *	487		EI 60	shaft walls ≥ 75 mm	10 mm	25 mm	2 sides	-	300 x 1200 mm
	group 1 - small sheathed ≤ Ø 21mm	hdPE conduit	621		EI 120	flexible ceilings ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø102
	group 2 - medium sheathed ≤ Ø 50mm	hdPE conduit	621		EI 120	flexible ceilings ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø102
	mix of group 1 + 2	hdPE conduit	621		EI 120	flexible ceilings ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø102
	group 1 - small sheathed ≤ Ø 21mm	PP-MD conduit *	487		EI 240	rigid floors ≥ 150 mm	-	40 mm	2 sides	-	Ø110
	group 1 - small sheathed ≤ Ø 21mm	hdPE conduit	621		EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø102
	group 2 - medium sheathed ≤ Ø 50mm	hdPE conduit	621		EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø102
	mix of group 1 + 2	hdPE conduit	621		EI 120	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø102

* Both rigid + corrugated conduits. 'eccentric to zero' position in opening is allowed.

** Both rigid + corrugated conduits. 'eccentric to zero' position and in opening is allowed, incl. in row: max. 120 x 40 mm.

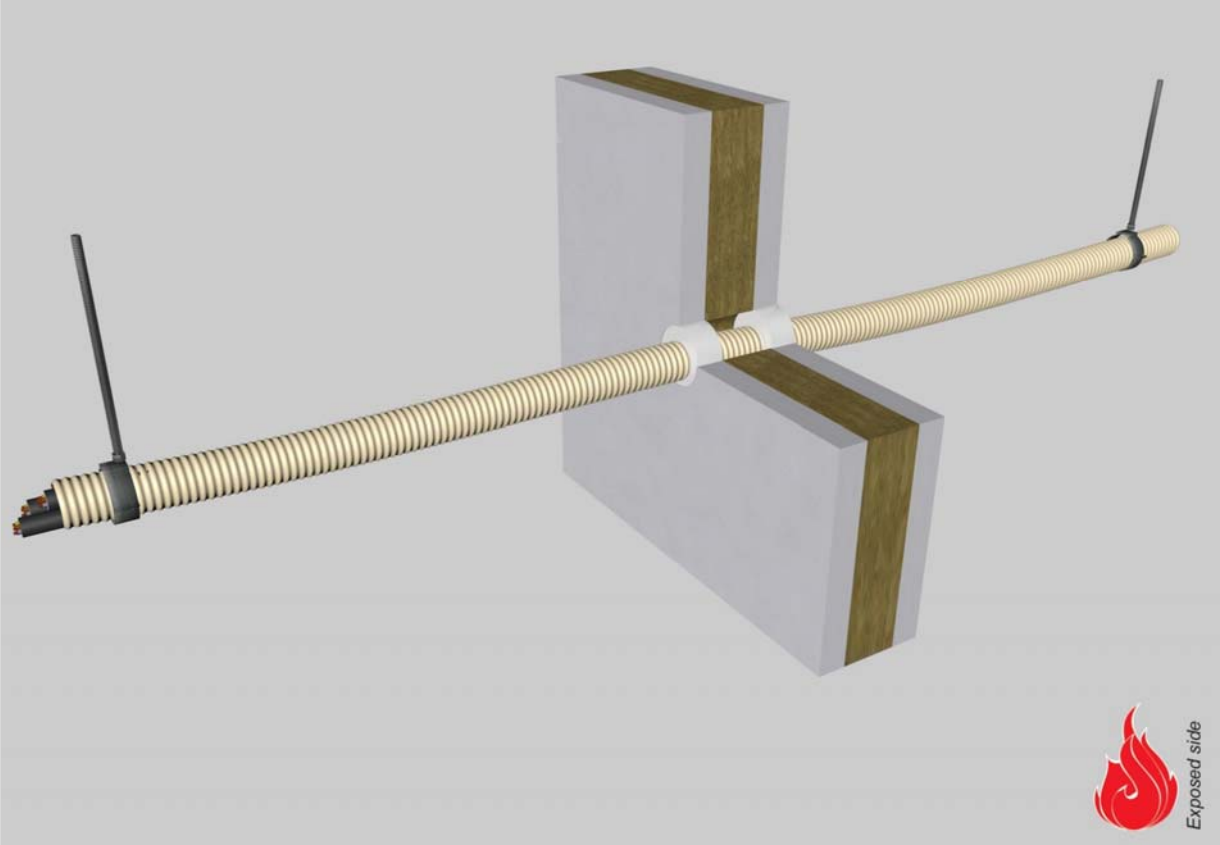
[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm!

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other cable dØ** are allowed within range and same conduit material
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	15-41



PE/PVC pipes + cables in conduits

FT Acrylic

	bundle dØ (mm) max.	cable specs [1] group	conduit	assembly Cu (mm²) max.	EI	constructive element [2]	Firesafe joint seal width	Firesafe joint seal depth	application 1 or 2 sides	backing required	max. opening in construction
up to Ø40	Ø16	group 1 -small sheathed ≤ Ø 16mm	-	208	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø32
	Ø16	<blank>	PE conduit	-	EI 120	flexible walls ≥ 100 mm	8 mm bead		2 sides	-	Ø18
	Ø16	<blank>	PE conduit	-	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	450x200 mm
	Ø16	group 1 -small sheathed ≤ Ø 16mm	PE conduit	208	EI 120	rigid walls ≥ 150 mm	8 mm bead		2 sides	-	Ø16
	Ø20	group 1 - small sheathed ≤ Ø 20mm	PVC-U conduit *	314	EI 60	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø36
	Ø31	group 1 - small sheathed ≤ Ø 21mm	PVC conduit	767	EI 240	rigid walls ≥ 150 mm	30 mm	15 mm	2 sides	RW	Ø85
	Ø31	group 2 - medium sheathed ≤ Ø 31mm	PVC conduit	767	EI 240	rigid walls ≥ 150 mm	30 mm	15 mm	2 sides	RW	Ø85
	Ø31	mix of group 1 + 2	PVC conduit	767	EI 240	rigid walls ≥ 150 mm	30 mm	15 mm	2 sides	RW	Ø85
	Ø40	group 1 -small sheathed ≤ Ø 16mm	PVC-U conduit	197	EI 90	CLT walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø52
	Ø40	group 1 - small sheathed ≤ Ø 21mm	PVC conduit *	570	EI 90	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø52
up to Ø55	Ø50	<blank>	PVC pipe	-	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø70
	Ø55	group 1 - small sheathed ≤ Ø 21mm	PVC conduit *	1056	EI 180	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø82
	Ø55	group 1 - small sheathed ≤ Ø 21mm	PVC-U conduit *	1056	EI 180	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø82
	Ø55	group 1 with mix of conduits	PVC(-U) conduit *	1056	EI 180	rigid walls ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø82
up to Ø99	Ø99	group 1 -small sheathed ≤ Ø 16mm	-	7164	EI 90	CLT walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø110
	Ø99	group 1 - small sheathed ≤ Ø 13mm	-	5137	EI 120	flexible walls ≥ 100 mm	10 mm	25 mm	2 sides	-	Ø110

in FT Board 2S 50 mm

* Both rigid + corrugated conduits. 'Eccentric to zero' position in opening is allowed.

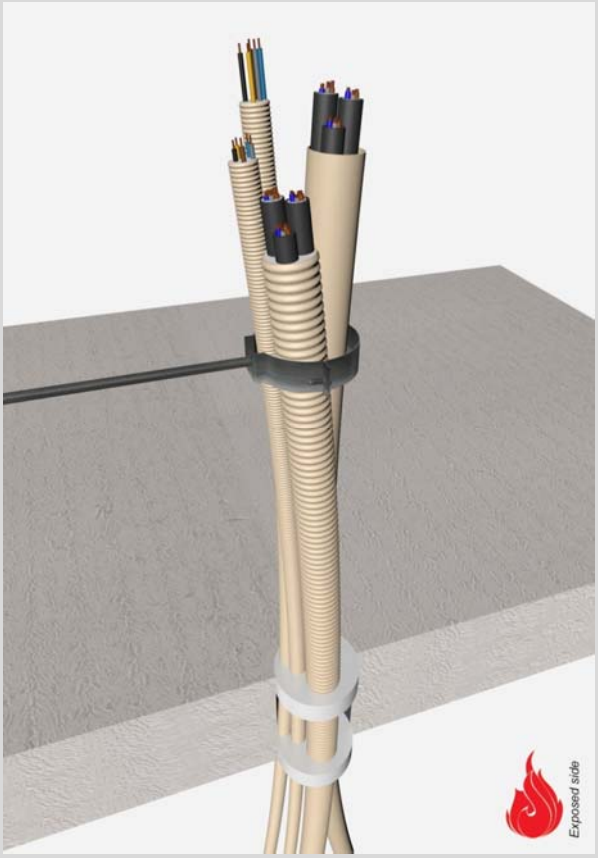
[1] Penetration services must be supported; support distance ≤ 500mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with floor on 2 sides
- **other cable dØ** are allowed within range and same conduit material

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	17-4-2



PE/PVC pipes + cables in conduits

FT Acrylic

	bundle dØ (mm) max.	cable specs [1] group	conduit	assembly Cu (mm²) max.	EI	constructive element [2]	Firesafe joint seal width	Firesafe joint seal depth	application 1 or 2 sides	backing required	max. opening in construction
up to Ø40	Ø16	group 1 -small sheathed ≤ Ø 16mm	PE conduit	208	EI 120	rigid floors ≥ 150 mm	8 mm bead		2 sides	-	Ø16
	Ø31	group 1 - small sheathed ≤ Ø 21mm	PVC conduit	767	EI 240	rigid floors ≥ 150 mm	30 mm	15 mm	2 sides	RW	Ø85
	Ø31	group 2 - medium sheathed ≤ Ø 31mm	PVC conduit	767	EI 240	rigid floors ≥ 150 mm	30 mm	15 mm	2 sides	RW	Ø85
	Ø31	mix of group 1 + 2	PVC conduit	767	EI 240	rigid walls ≥ 150 mm	30 mm	15 mm	2 sides	RW	Ø85
	Ø40	group 1 -small sheathed ≤ Ø 16mm	PVC-U conduit *	197	EI 90	CLT floors ≥ 140 mm	10 mm	25 mm	2 sides	-	Ø52
up to Ø55	Ø55	group 1 - small sheathed ≤ Ø 21mm	PVC conduit *	1056	EI 180	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø82
	Ø55	group 1 - small sheathed ≤ Ø 21mm	PVC-U conduit *	1056	EI 180	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø82
	Ø55	group 1 with mix of conduits	PVC(-U) conduit *	1056	EI 180	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	Ø82
up to Ø121	Ø99	group 1 -small sheathed ≤ Ø 16mm	-	7164	EI 90	CLT floors ≥ 140 mm	10 mm	25 mm	2 sides	-	Ø110
	Ø121	group 1 - small sheathed ≤ Ø 13mm	-	8629	EI 180	rigid floors ≥ 150 mm	15 mm	25 mm	2 sides	-	600x700 mm

in FT Board 2S 50 mm

* Both rigid + corrugated conduits. 'Eccentric to zero' position in opening is allowed.

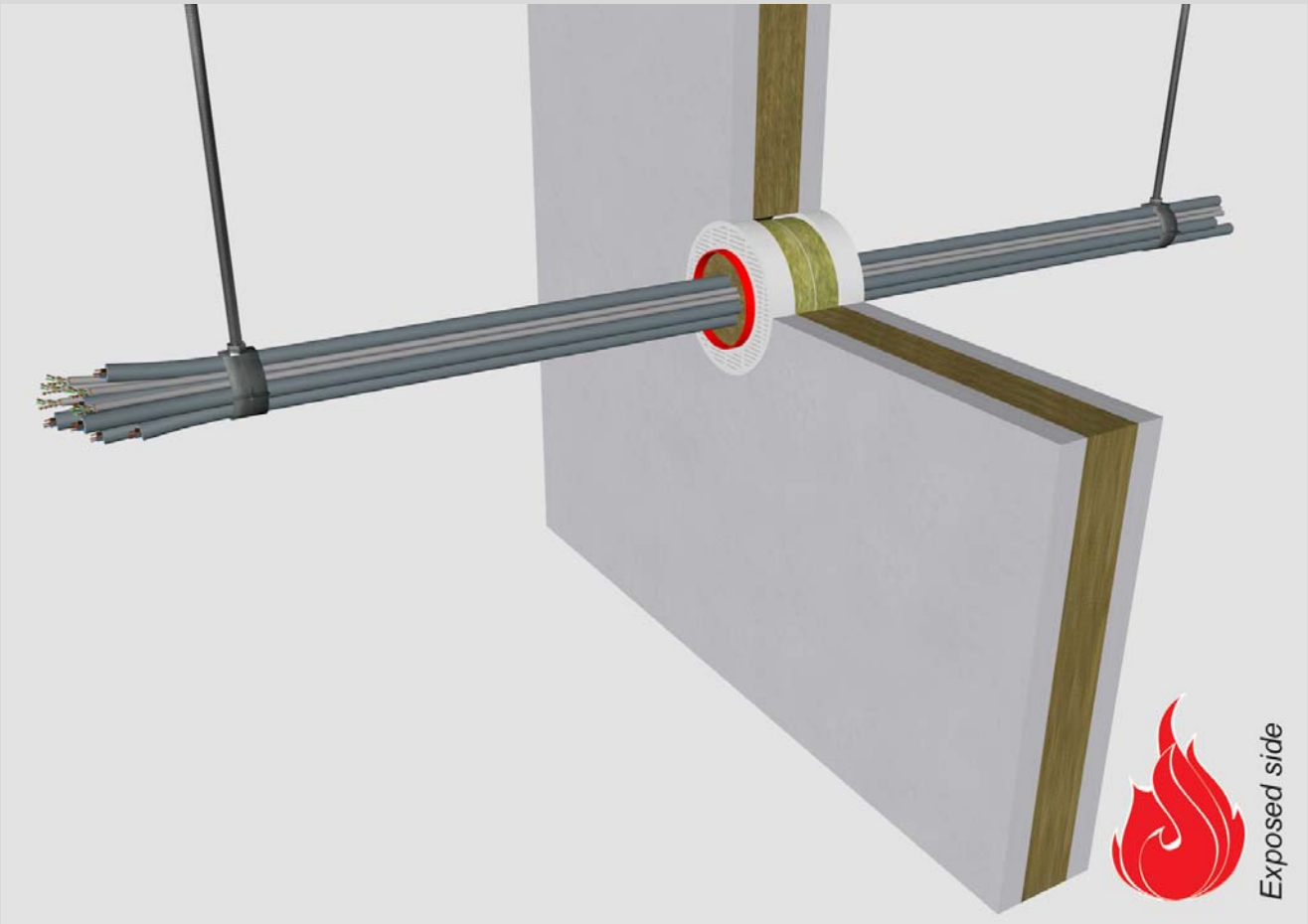
[1] Penetration services must be supported; support distance ≤ 400mm.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- mount with Firesafe FT Acrylic on 2 sides and close transit with loose RW
- **other cable dØ** are allowed within group type
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	21-14



cables

Cable Transit

bundle dØ (mm)	cable specs [1] group	conduit	assembly Cu (mm²)	EI	constructive element [2]	Firesafe cable box Ø in mm	application 1 or 2 sides	finish required	max. opening in construction
			max.						
up to Ø50	group 1 -small sheathed ≤ Ø 16mm	PVC conduit	559	EI 90	CLT walls ≥ 100 mm	Ø 50 mm	2 sides	*	Ø60
	group 1 -small sheathed ≤ Ø 16mm	PVC conduit	559	EI 90	CLT floors ≥ 140 mm	Ø 50 mm	2 sides	*	Ø60
	group 1 - small sheathed ≤ Ø 21mm	-	1124	EI 60	flexible walls ≥ 100 mm	Ø 50 mm	centrally	*	Ø76
	group 1 - small sheathed ≤ Ø 21mm	-	817	EI 120	flexible walls ≥ 100 mm	Ø 50 mm	centrally	*	Ø90
	group 1 - small sheathed ≤ Ø 21mm	-	1124	EI 120	rigid walls ≥ 150 mm	Ø 50 mm	centrally	*	Ø71
	group 1 - small sheathed ≤ Ø 21mm	-	1124	EI 120	rigid floors ≥ 150 mm	Ø 50 mm	centrally	*	Ø71
	group 4 - data + fibre optic	-	61	EI 120	flexible walls ≥ 100 mm	Ø 50 mm	centrally	*	Ø90
max.									
Ø90	group 1 - small sheathed ≤ Ø 21mm	-	2729	EI 60	flexible walls ≥ 100 mm	Ø 90 mm	centrally	*	Ø110
	group 1 - small sheathed ≤ Ø 21mm	-	1855	EI 90	flexible walls ≥ 100 mm	Ø 90 mm	centrally	*	Ø140
	group 1 - small sheathed ≤ Ø 21mm	-	2248	EI 120	rigid floors ≥ 150 mm	Ø 90 mm	centrally	*	Ø110
	group 4 - data + fibre optic	-	365	EI 90	flexible walls ≥ 100 mm	Ø 90 mm	centrally	*	Ø140

in FT Board 2S 50 mm

* mount transit with FT Acrylic

\+ put loose rock wool ≥ 100kg/m³ in transit on 2 sides

[1] Penetration services must be supported; support distance ≤ 500mm (wall) or ≤ 400mm (floor).

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

AIR CONTROL SERVICES classification

Fire performances are **principle configurations**, valid for services within range:

fire dampers	up to 600 x 300 mm
air ducts	up to 1000 x 1000 mm

always install services acc. manufacturer's instructions

service size	service specs
fire dampers	**installation** in firewall, supported to floor max. 600 x 300 mm acc. EN 1366-3 acc. EN 1634-3 **upgrade** towards firewall, supported to floor acc. EN 1366-2 acc. EN 1634-3
	in spiral pipes max.Ø 160 mm with or without valve acc. EN 1366-3
air ducts	**circular ducts** max. Ø 300 mm acc. EN 1366-3 **duct cladding** max. 1000 x 1000 mm acc. EN 1366-3 acc. EN 1634-3
air transfer grilles	**ventilation** max. 600 x 600 mm acc. EN 1364-5

suitable Firesafe products within classification:

FT Graphite DoP CPR-16/0094	FT Acrylic or FT Paste DoP CPR-16/0094	FT Coating DoP CPR-16/0103	FT Board DoP CPR-16/0103	or GPG	Air Grill
			EI 90 in wall 1+2+3 2x 50mm 2S	100mm	
			EI 60 in wall 1+2+3 cladding: 1x 50mm 2S	100mm	
in FT Board with pipe insulation: EI 60 in wall 1-n100	in FT Board EI 60 in wall 1-n75 EI 60 in wall 1-n100	EI 120 in wall 1+2+3 EI 120 in ceiling 4 EI 120 in floor 5			
	EI 90 in floor 7				
			EI 60 in wall 1+2+3 cladding: 1x 50mm 1S	100mm	
			EI 60 in floor 5 cladding: 1x 50mm 1S	60mm	
					EI 60 in wall 1+2+3
					EI 120 in floor 5
joint details: min. W x D, default floors: 10 x 25 mm apply on 2 sides	joint details: min. W x D, default floors: 10 x 25 mm apply on 2 sides	0,8mm coat layer 200 LI walls: apply on 2 sides floors: apply on 1 side apply smokeseal FT Acrylic	'butter' cross cut edges of FT Board + opening with FT Coating apply smokeseal FT Acrylic	default: floors: 30 x 25 mm apply flush with construction	mount with FT Acrylic walls: apply centrally in wall floors: apply flush with floor

supporting construction

Constructive element must be classified acc. EN 13501-2 for the required fire resistance period:

1: flexible wall ≥100mm, insulated
1-n100: flexible wall ≥100mm, **non-insulated**
1-n75: flexible wall ≥75mm, **non-insulated**
2: rigid wall ≥100mm
3: rigid wall ≥150mm
4: flexible ceiling ≥150mm
5: rigid floor ≥150mm
6: CLT wall ≥100mm
7: CLT floor ≥140mm

Max. opening in constructive element: see principle detail. Use FT Board if opening is larger; see how-to-read.

Penetration services must be **supported.** Always install services acc. manufacturer's instructions.

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Notes:
- installation instructions in TDS
- expansion unit for fire damper is **NOT** required
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm

principle configuration **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0325
tested property	smoke resistance
test method	EN 1634-3

fire dampers

fire damper specs [1]	EI	constructive element [2]	FT Board Firesafe fire board type 2S 50 mm	FT Coating Firesafe coat seal DFT 0,8mm	application 1 or 2 sides	max. opening in construction	finish required
rectangular shape							
max. 600 x 300 mm service: steel damper, supported to floor upgrade acc. EN 1366-2	EI 60	flexible walls ≥ 100 mm	cladding: 1 layer opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
max. 600 x 300 mm service: steel damper, supported to floor installation acc. EN 1366-3	EI 90	flexible walls ≥ 100 mm	opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
circular shape, with or without valve							
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible walls ≥ 100 mm	-	200 LI	2 sides	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible ceilings ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	rigid floors ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic

in FT Board 2S 50 mm

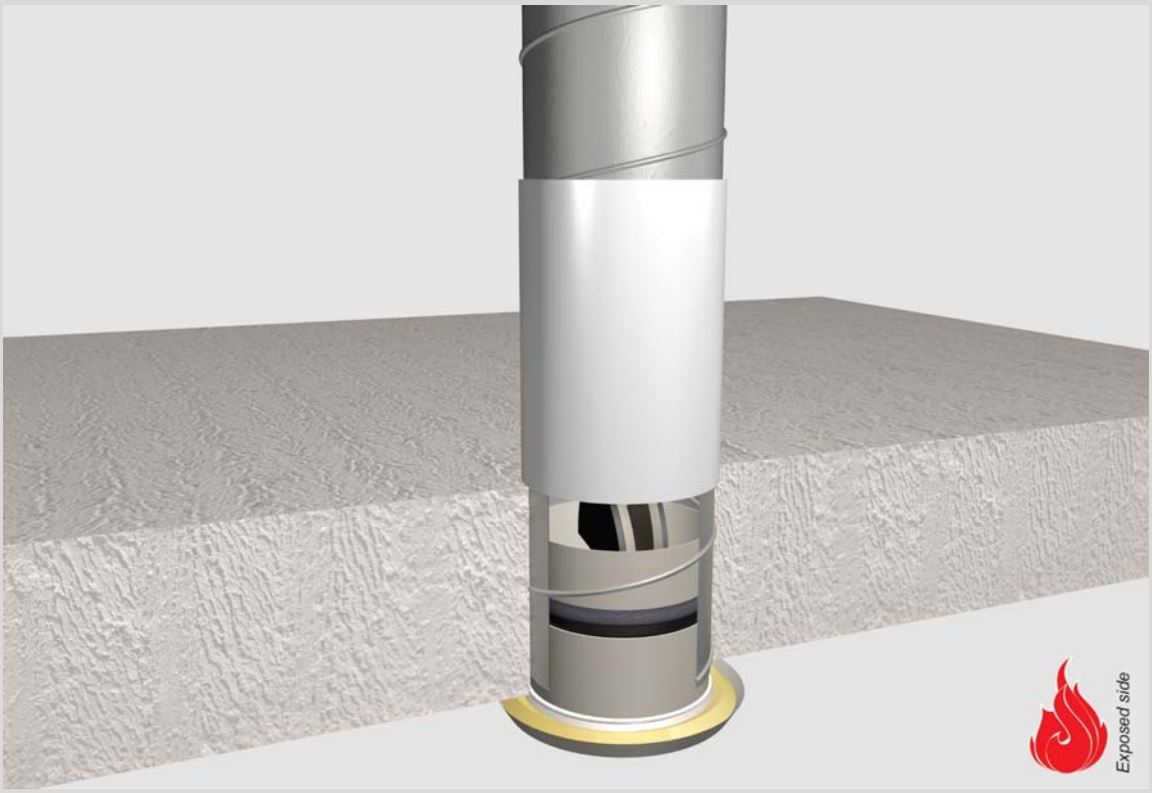
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- spiral pipe tested with fire damper, with and without valve
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0172r
tested property	smoke resistance
test method	EN 1634-3



fire dampers

fire damper specs [1]	EI	constructive element [2]	FT Board Firesafe fire board type 2S 50 mm	FT Coating Firesafe coat seal DFT 0,8mm	application 1 or 2 sides	max. opening in construction	finish required
rectangular shape							
max. 600 x 300 mm service: steel damper, supported to floor upgrade acc. EN 1366-2	EI 60	flexible walls ≥ 100 mm	cladding: 1 layer opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
max. 600 x 300 mm service: steel damper, supported to floor installation acc. EN 1366-3	EI 90	flexible walls ≥ 100 mm	opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
circular shape, with or without valve							
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible walls ≥ 100 mm	-	200 LI	2 sides	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible ceilings ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	rigid floors ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic

in FT Board 2S 50 mm

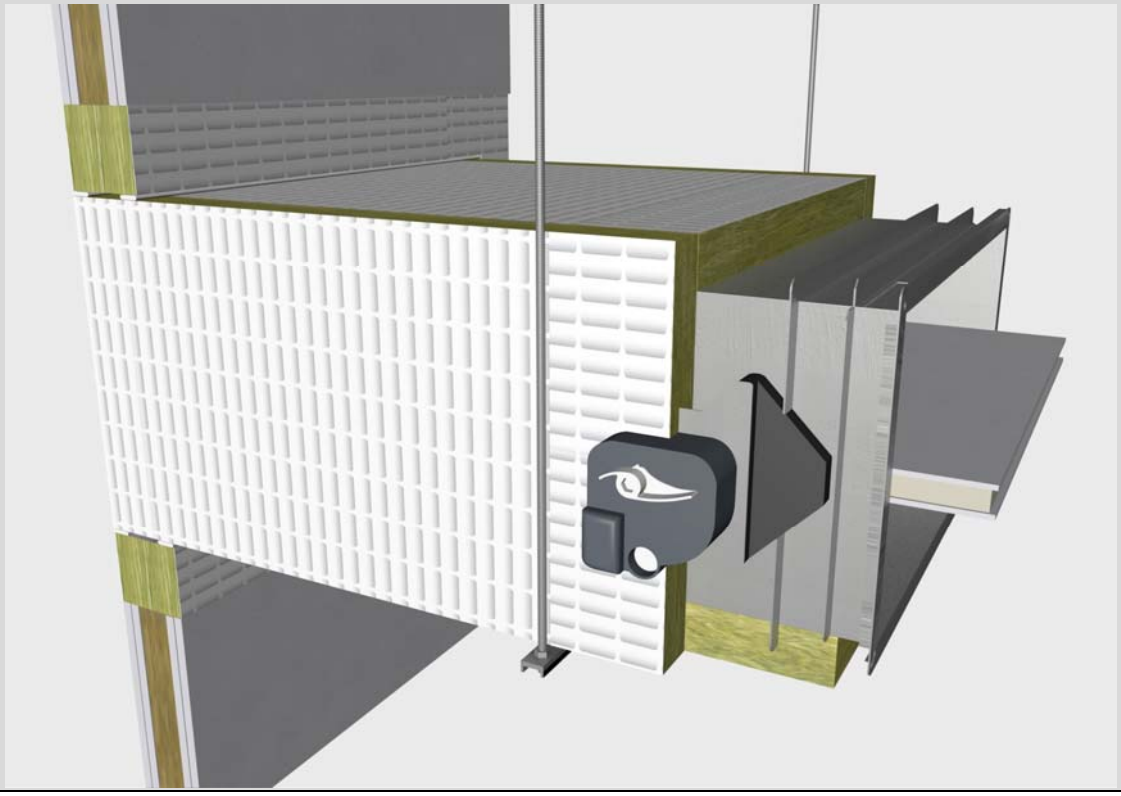
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm

principle configuration **Firesafe**

tested property	fire resistance
test method	EN 1366-2
service no.	0321
tested property	smoke resistance
test method	EN 1634-3



fire dampers

fire damper specs [1]	EI	constructive element [2]	FT Board Firesafe fire board type 2S 50 mm	FT Coating Firesafe coat seal DFT 0,8mm	application 1 or 2 sides	max. opening in construction	finish required
rectangular shape							
max. 600 x 300 mm service: steel damper, supported to floor upgrade acc. EN 1366-2	EI 60	flexible walls ≥ 100 mm	cladding: 1 layer opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
max. 600 x 300 mm service: steel damper, supported to floor installation acc. EN 1366-3	EI 90	flexible walls ≥ 100 mm	opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
circular shape, with or without valve							
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible walls ≥ 100 mm	-	200 LI	2 sides	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible ceilings ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	rigid floors ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic

in FT Board 2S 50 mm

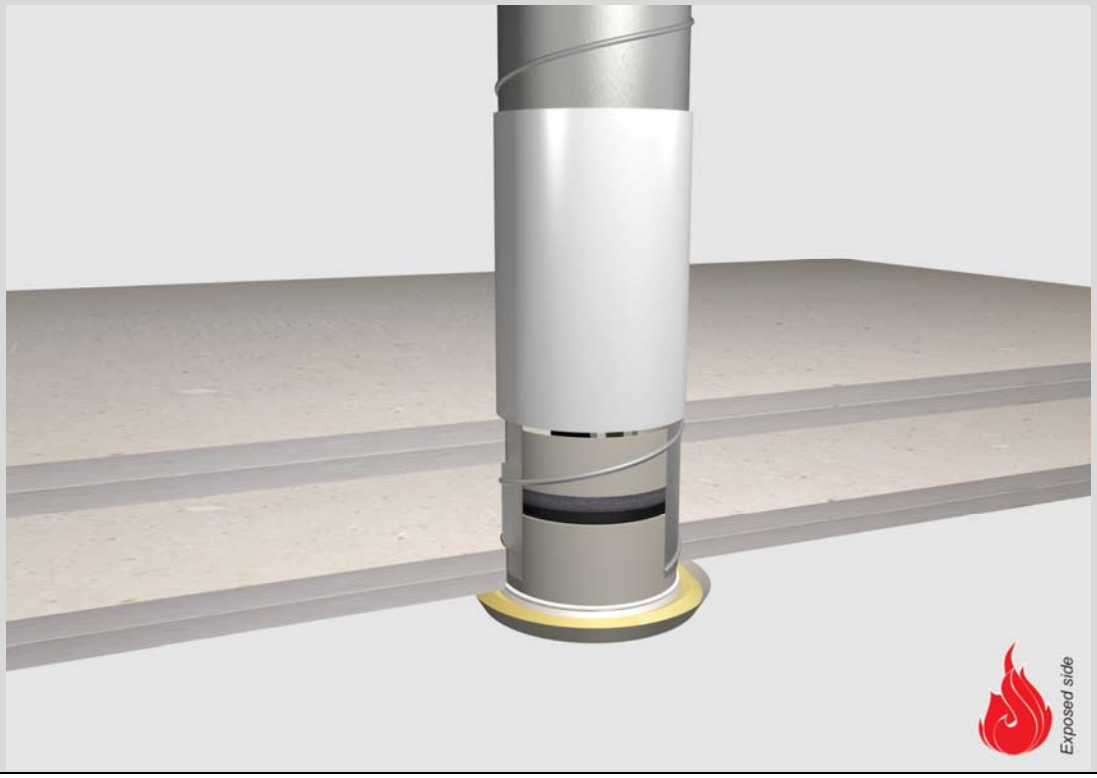
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- spiral pipe tested with fire damper, with and without valve
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0172
tested property	smoke resistance
test method	EN 1634-3



fire dampers

fire damper specs [1]	EI	constructive element [2]	FT Board Firesafe fire board type 2S 50 mm	FT Coating Firesafe coat seal DFT 0,8mm	application 1 or 2 sides	max. opening in construction	finish required
rectangular shape							
max. 600 x 300 mm service: steel damper, supported to floor upgrade acc. EN 1366-2	EI 60	flexible walls ≥ 100 mm	cladding: 1 layer opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
max. 600 x 300 mm service: steel damper, supported to floor installation acc. EN 1366-3	EI 90	flexible walls ≥ 100 mm	opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
circular shape, with or without valve							
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible walls ≥ 100 mm	-	200 LI	2 sides	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible ceilings ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	rigid floors ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic
		in FT Board 2S 50 mm					

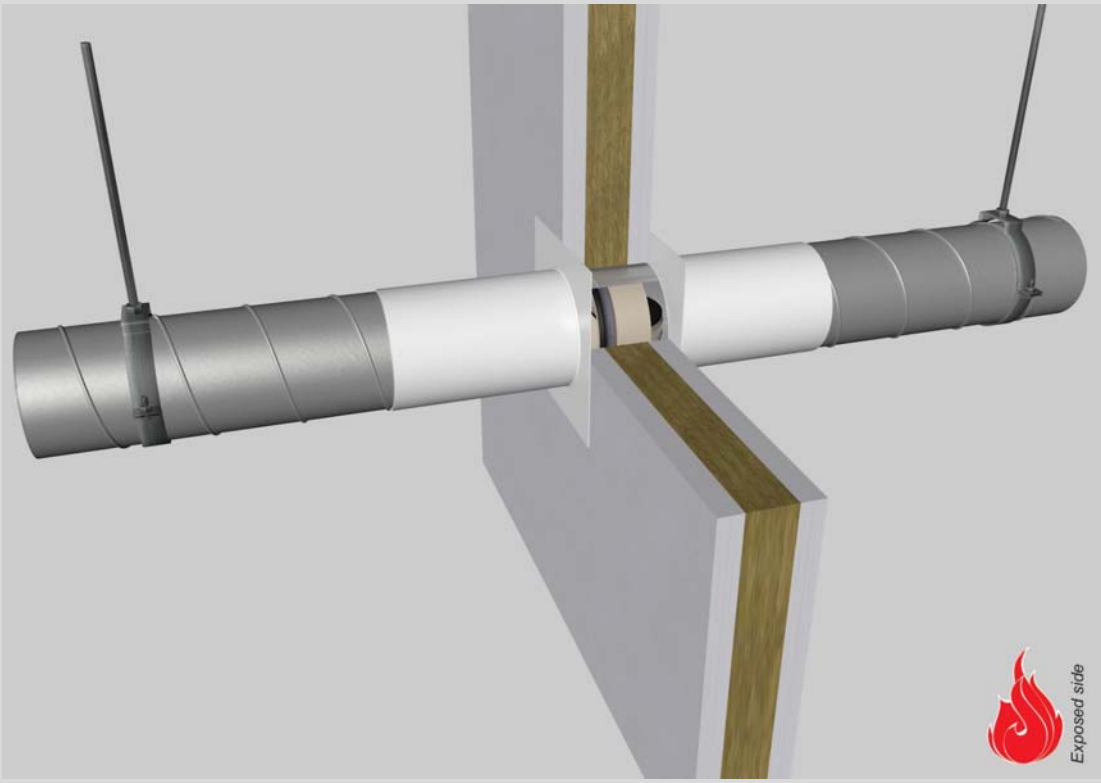
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- spiral pipe tested with fire damper, with and without valve
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0079
tested property	smoke resistance
test method	EN 1634-3



fire dampers

fire damper specs [1]	EI	constructive element [2]	FT Board Firesafe fire board type 2S 50 mm	FT Coating Firesafe coat seal DFT 0,8mm	application 1 or 2 sides	max. opening in construction	finish required
rectangular shape							
max. 600 x 300 mm service: steel damper, supported to floor upgrade acc. EN 1366-2	EI 60	flexible walls ≥ 100 mm	cladding: 1 layer opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
max. 600 x 300 mm service: steel damper, supported to floor installation acc. EN 1366-3	EI 90	flexible walls ≥ 100 mm	opening: 2 strips	-	1 side	900 x 596 mm	seal adjacent joints with Firesafe FT Acrylic
circular shape, with or without valve							
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible walls ≥ 100 mm	-	200 LI	2 sides	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	flexible ceilings ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic
max. Ø 125 mm service: spiral pipe installation acc. EN 1366-3	EI 120	rigid floors ≥ 150 mm	-	200 LI	1 side	130 mm	apply joint bead Firesafe FT Acrylic
		in FT Board 2S 50 mm					

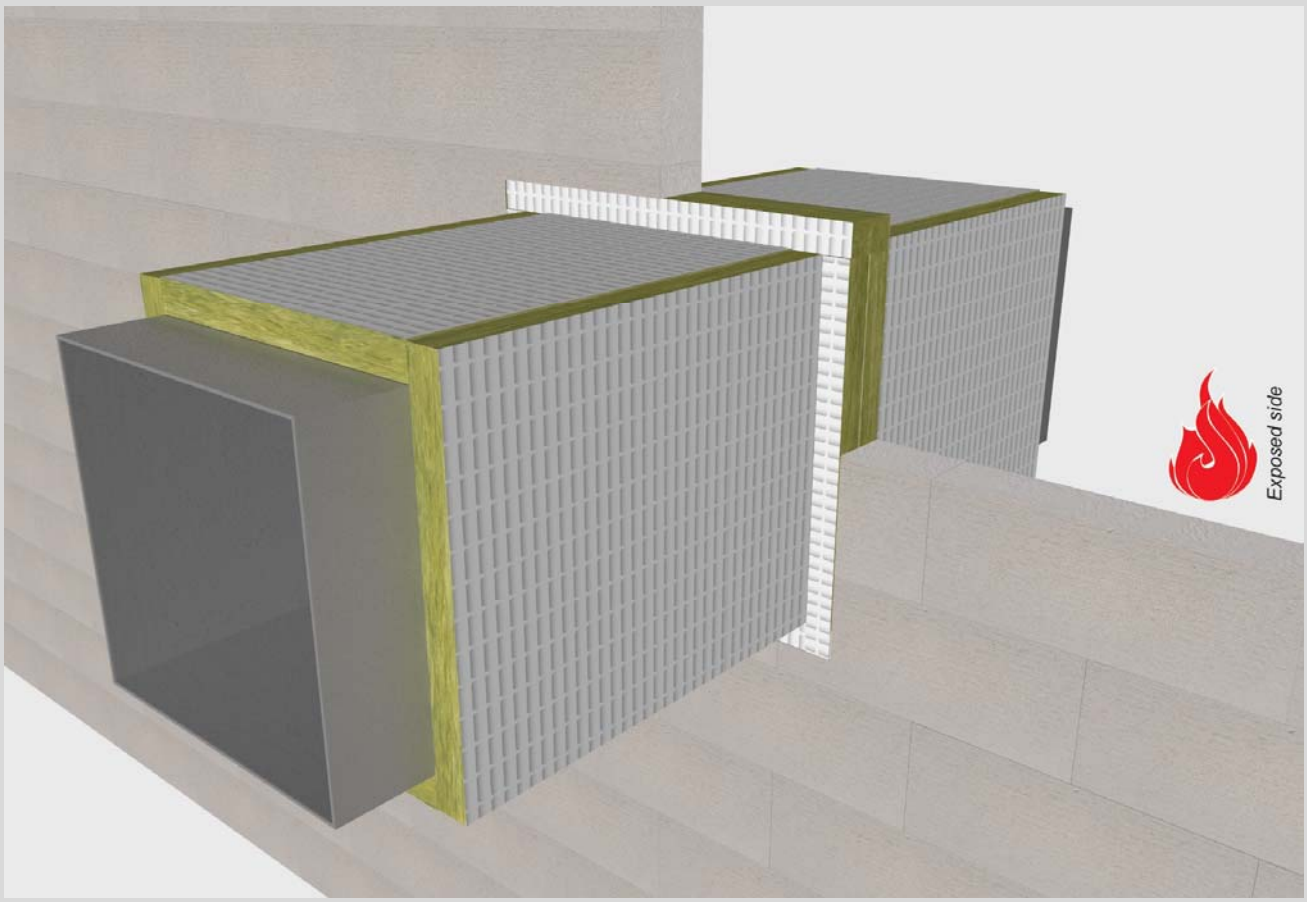
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- secure board-to-board connections with Firesafe FT Spirals
- for esthetics: finish cross cut edges with Firesafe FT Coating

principle configuration **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0040r
tested property	smoke resistance
test method	EN 1634-3



air ducts

air duct specs [1]	EI	constructive element [2]	FT Board Firesafe fire board default: 50mm	application 1 or 2 sides	max. opening in construction	finish required
rectangular shape						
max. 500 x 500 mm service: steel duct cladding acc. EN 1366-3	EI 60	flexible walls ≥ 100 mm	1500 LI cladding: 1 layer 1S opening: 2x 1S	2 sides	700 x 700 mm	-
max. 500 x 500 mm service: steel duct cladding acc. EN 1366-3	EI 60	rigid walls ≥ 100 mm	1500 LI cladding: 1 layer 1S opening: 2x 1S	2 sides	700 x 700 mm	-
max. 1000 x 1000 mm service: steel duct cladding acc. EN 1366-3	EI 60	rigid floors ≥ 150 mm	1500 LI cladding: 1 layer 1S opening: 1x 60mm 2S	2 sides	1200 x 1200 mm	-

in FT Board 2S 50 mm

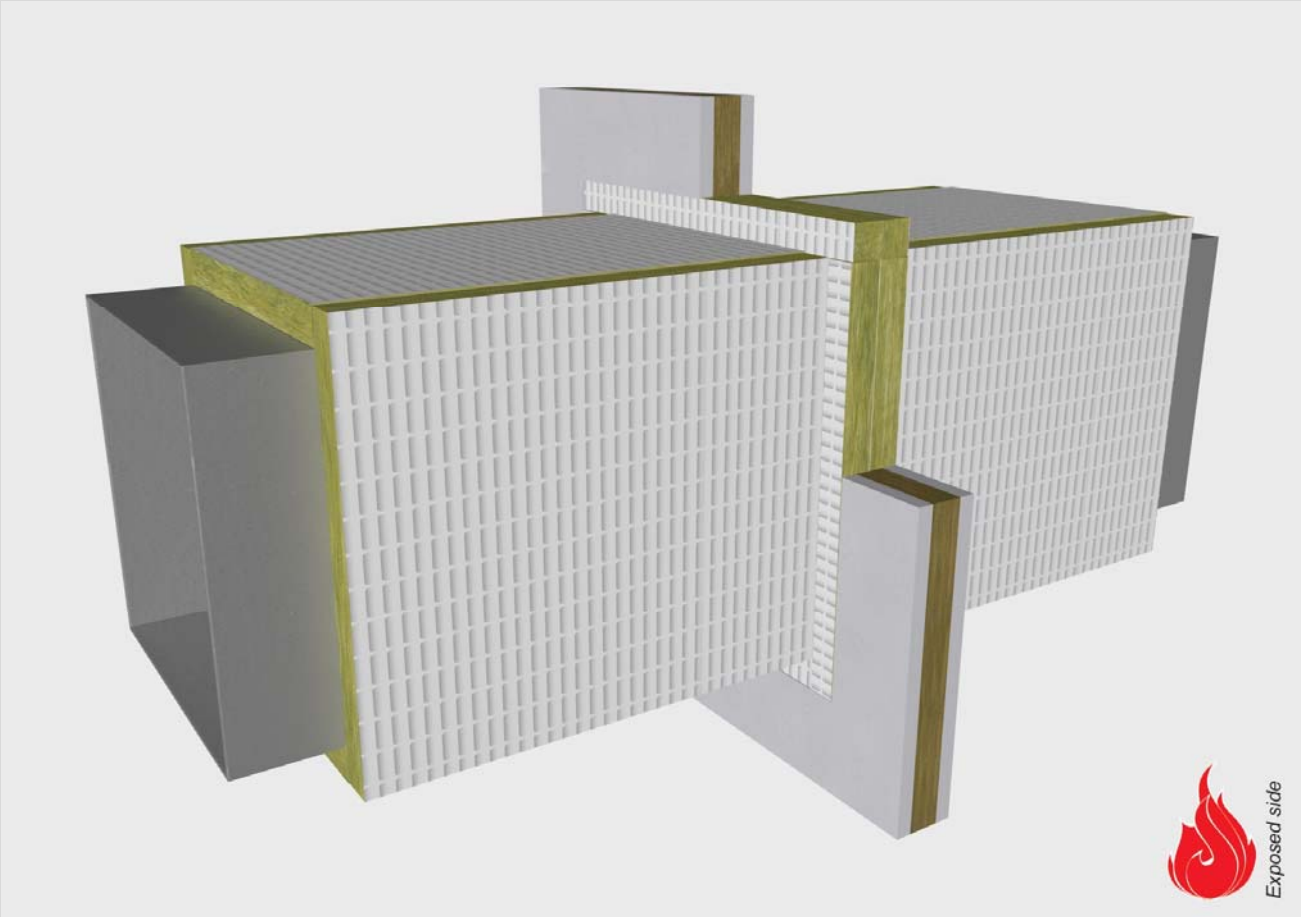
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- secure board-to-board connections with Firesafe FT Spirals
- for esthetics: finish cross cut edges with Firesafe FT Coating

principle configuration **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0040
tested property	smoke resistance
test method	EN 1634-3



air ducts

FT Board

air duct specs [1]	EI	constructive element [2]	Firesafe fire board default: 50mm	application 1 or 2 sides	max. opening in construction	finish required
rectangular shape						
max. 500 x 500 mm service: steel duct cladding acc. EN 1366-3	EI 60	flexible walls ≥ 100 mm	1500 LI cladding: 1 layer 1S opening: 2x 1S	2 sides	700 x 700 mm	-
max. 500 x 500 mm service: steel duct cladding acc. EN 1366-3	EI 60	rigid walls ≥ 100 mm	1500 LI cladding: 1 layer 1S opening: 2x 1S	2 sides	700 x 700 mm	-
max. 1000 x 1000 mm service: steel duct cladding acc. EN 1366-3	EI 60	rigid floors ≥ 150 mm	1500 LI cladding: 1 layer 1S opening: 1x 60mm 2S	2 sides	1200 x 1200 mm	-

in FT Board 2S 50 mm

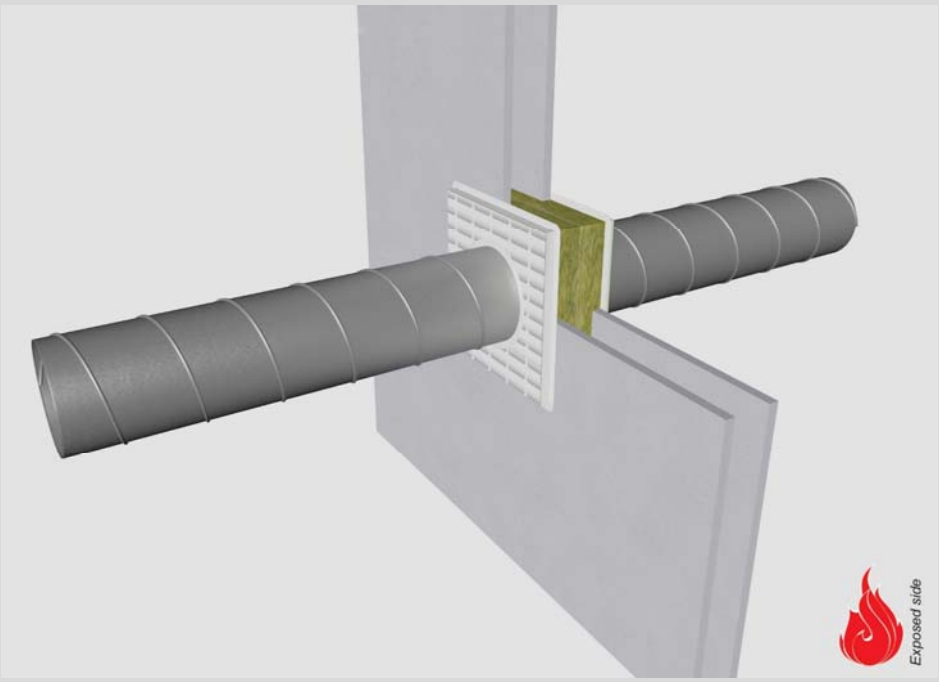
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°
- spiral pipe tested with fire damper, with and without valve

principle detail Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	31-73



fire dampers

fire damper specs [1]		non-standard config.	pipe insulation min. 60 kg/m³ eg Armaflex	EI	constructive element [2]	FT Acrylic Firesafe joint seal width	depth	application 1 or 2 sides	max. opening in construction	pipe end configuration	finish required
circular shape, with or without valve											
service: spiral pipe installation acc. EN 1366-3	Ø 125 mm	non-insulated walls		EI **60**	flexible walls ≥ 75 mm	10 mm	100 mm	2 sides	225 x 225 mm	U/U + U/C + C/C	20mm perimeter *
	Ø 160 mm	non-insulated walls		EI **60**	flexible walls ≥ 100 mm	10 mm	100 mm	2 sides	1200 x 600 mm	U/U + U/C + C/C	-

in FT Board 2S 50 mm

* FT Coating, DFT 0,8

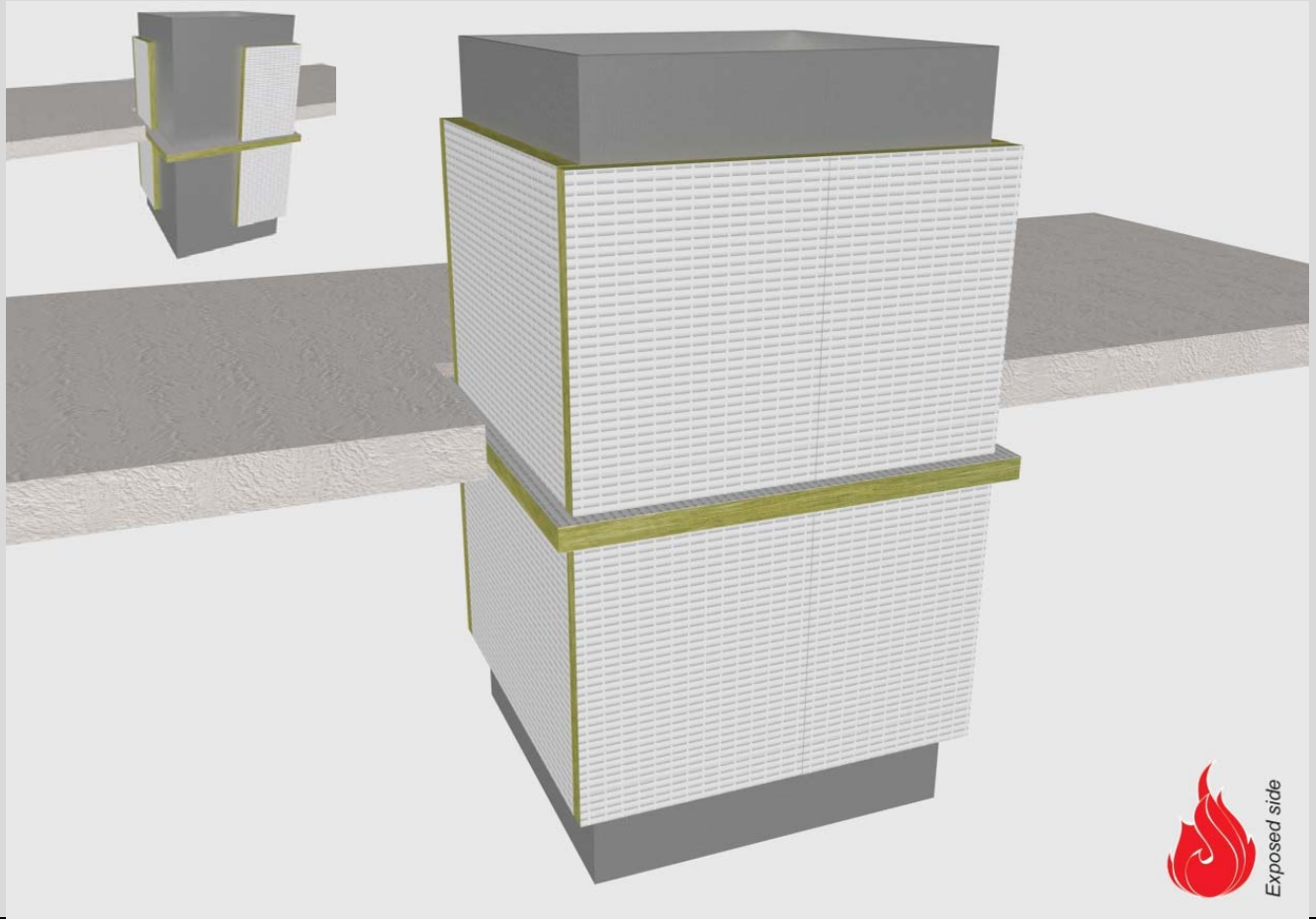
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- secure board-to-board connections with Firesafe FT Spirals
- for esthetics: finish cross cut edges with Firesafe FT Coating
- EI for flexible walls ≥100mm is also applicable for **rigid walls** ≥100mm

principle configuration **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	0039
tested property	smoke resistance
test method	EN 1634-3



air ducts

FT Board

air duct specs [1]	EI	constructive element [2]	Firesafe fire board default: 50mm	application 1 or 2 sides	max. opening in construction	finish required
rectangular shape						
max. 500 x 500 mm service: steel duct cladding acc. EN 1366-3	EI 60	flexible walls ≥ 100 mm	1500 LI cladding: 1 layer 1S opening: 2x 1S	2 sides	700 x 700 mm	-
max. 500 x 500 mm service: steel duct cladding acc. EN 1366-3	EI 60	rigid walls ≥ 150 mm	1500 LI cladding: 1 layer 1S opening: 2x 1S	2 sides	700 x 700 mm	-
max. 1000 x 1000 mm service: steel duct cladding acc. EN 1366-3	EI 60	rigid floors ≥ 150 mm	1500 LI cladding: 1 layer 1S opening: 1x 60mm 2S	2 sides	1200 x 1200 mm	-

in FT Board 2S 50 mm

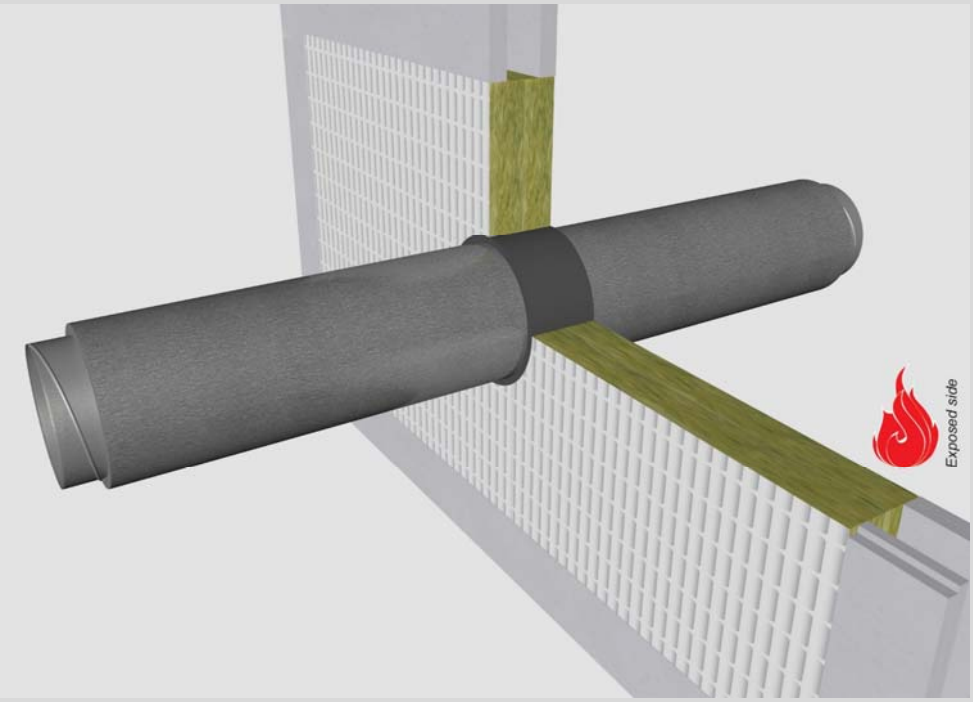
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°
- spiral pipe tested with fire damper, with and without valve

principle detail Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	30-58



fire dampers

circular shape, with or without valve

fire damper specs [1]	non-standard config.	pipe insulation min. 60 kg/m³ eg Armaflex	EI	constructive element [2]	FT Graphite Firesafe joint seal width	depth	application 1 or 2 sides	max. opening in construction	pipe end configuration	backing required
service: spiral pipe Ø 160 mm installation acc. EN 1366-3	non-insulated walls	synth. rubber 13mm CS + CI	EI 60	flexible walls ≥ 100 mm in FT Board 2S 50 mm	10 mm	100 mm	2 sides	1200 x 600 mm	U/U + U/C + C/C	-

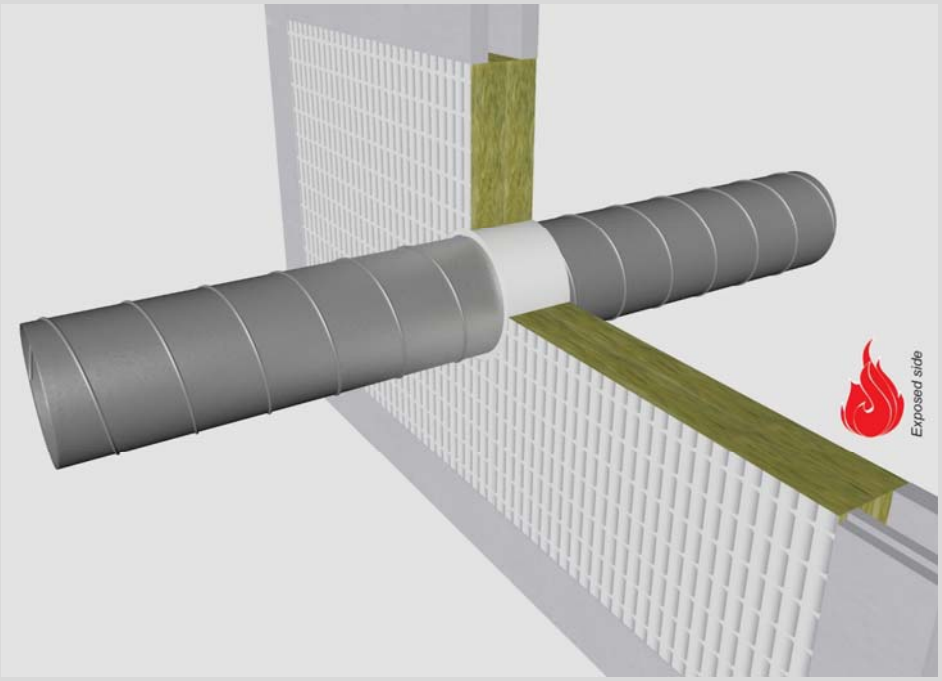
[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS
- apply joint seal in opening, flush with wall on 2 sides
- **other pipe dØ + s1** (thickness) are allowed within range and same pipe material
- angle: perpendicular + all angles between 90° and 45°
- spiral pipe tested with fire damper, with and without valve

principle detail **Firesafe**

tested property	fire resistance
test method	EN 1366-3
service no.	30-54



fire dampers

fire damper specs [1]		non-standard config.	pipe insulation min. 60 kg/m³ eg Armaflex	EI	constructive element [2]	FT Acrylic Firesafe joint seal width	depth	application 1 or 2 sides	max. opening in construction	pipe end configuration	finish required
circular shape, with or without valve											
service: spiral pipe installation acc. EN 1366-3	Ø 125 mm	non-insulated walls		EI **60**	flexible walls ≥ 75 mm	10 mm	100 mm	2 sides	225 x 225 mm	U/U + U/C + C/C	20 mm perimeter *
	Ø 160 mm	non-insulated walls		EI **60**	flexible walls ≥ 100 mm	10 mm	100 mm	2 sides	1200 x 600 mm	U/U + U/C + C/C	-

in FT Board 2S 50 mm

* FT Coating, DFT 0,8

[1] Penetration services must be supported; always install services acc. manufacturer's instructions.

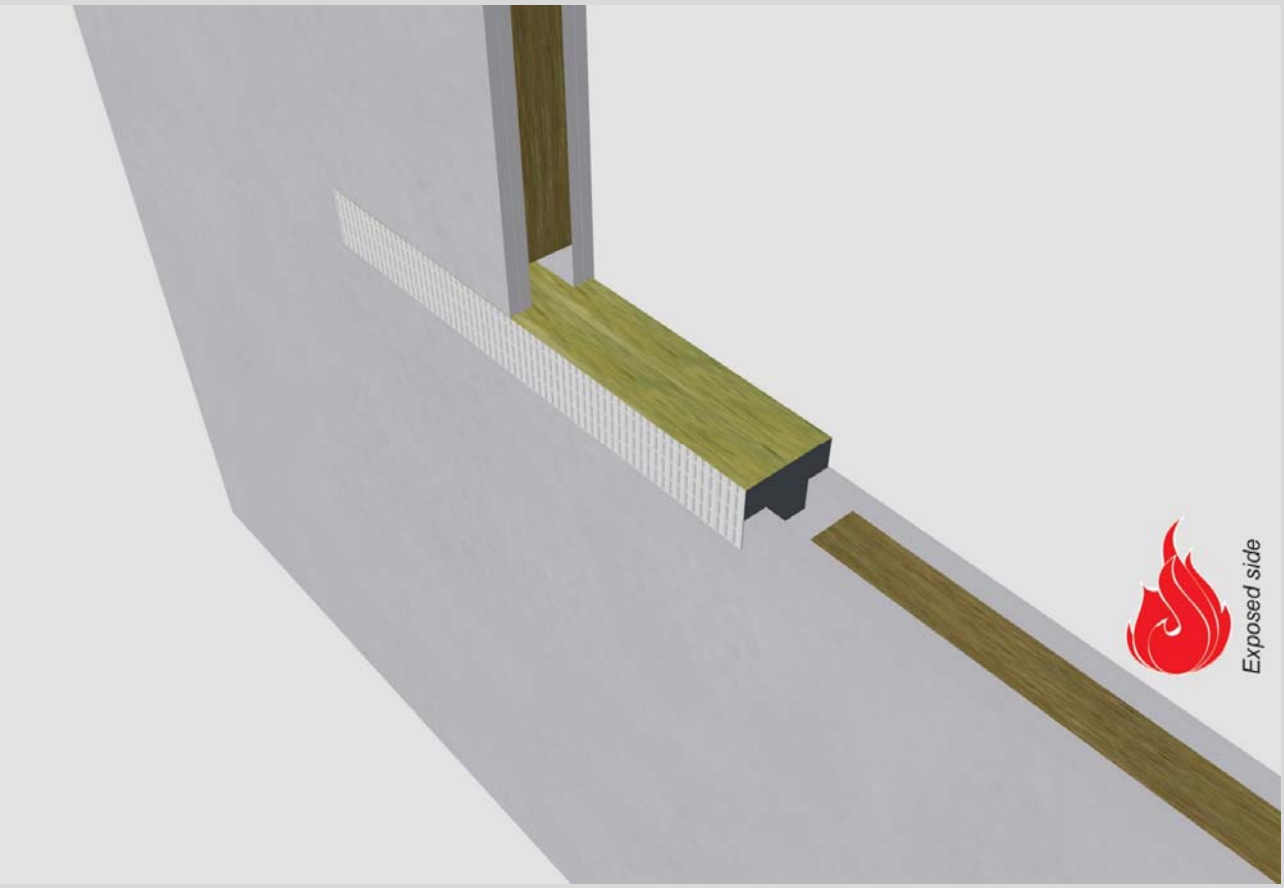
[2] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.

Notes:
- installation instructions in TDS

principle detail

Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	21-15r
tested property	smoke resistance
test method	EN 1634-3



blank seals

opening / gap / joint dimensions (mm) max.	EI	constructive element [1]	FT Board: Firesafe fire board type 2S 50 mm	application 1 or 2 sides	finish required	max. opening in construction
200 x 400 mm	EI 180	rigid floors ≥ 150 mm	friction-fixed	2 sides	*	200 x 400 mm
400 x 600 mm	EI 120	rigid walls ≥ 100 mm	friction-fixed	centrally positioned	*	400 x 600 mm
600 x 1200 mm + 25%	EI 60	flexible walls ≥ 100 mm	friction-fixed	2 sides	*	600 x 1200 mm + 25%
600 x 5000 mm	EI 60	rigid floors ≥ 150 mm	friction-fixed	2 sides	*	600 x 5000 mm
620 x 70 mm	EI 120	flexible walls ≥ 100 mm	friction-fixed	2 sides	*	620 x 70 mm
100 x 900 mm, horizontal joint	EI 60	rigid walls ≥ 100 mm	board strip [2]	1 side, exp.	[4]	100x900
100 x 900 mm, horizontal joint	EI 60	rigid floors ≥ 150 mm	board strip [3]	1 side, exp.	[5]	100x900

* mount with FT Acrylic on 2 sides

[1] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

[2] Rock wool 50mm, density ≥150kg/m^3.

[3] Rock wool 20mm, density ≥150kg/m^3.

4) FT Board strip min. height 200mm, max. length 900mm; finish top cross cut edge with Firesafe FT Coating, then mount with Conlit Fix adhesive onto wall.

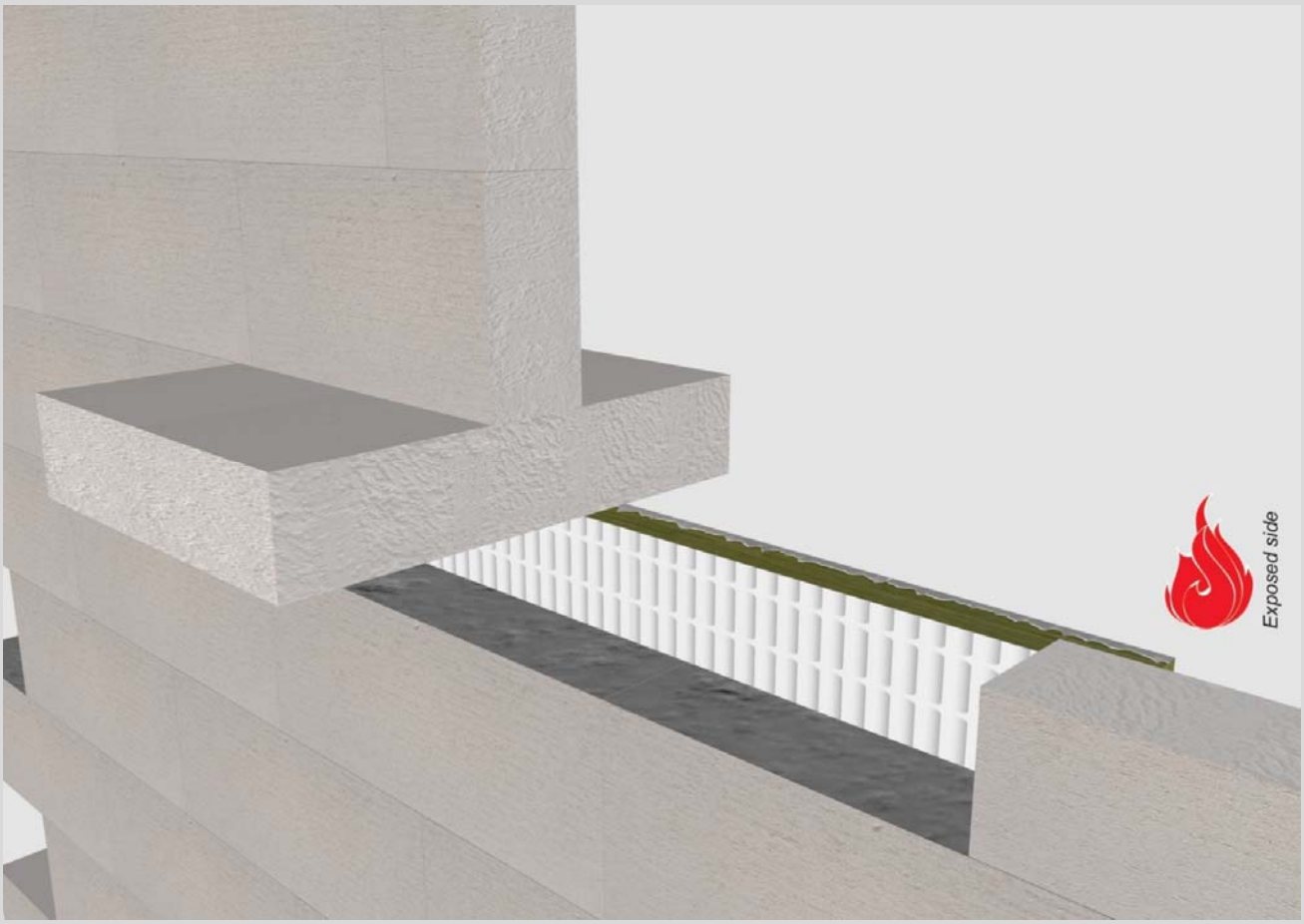
5) FT Board strip min. heigth 300mm, max. length 1100mm; mounted with Firesafe FT Acrylic + screwed onto wall.

Notes:
- installation instructions in TDS

principle detail

Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	23-54
tested property	smoke resistance
test method	EN 1634-3



blank seals

opening / gap / joint dimensions (mm) max.	EI	constructive element [1]	FT Board: Firesafe fire board type 2S 50 mm	application 1 or 2 sides	finish required	max. opening in construction
200 x 400 mm	EI 180	rigid floors ≥ 150 mm	friction-fixed	2 sides	*	200 x 400 mm
400 x 600 mm	EI 120	rigid walls ≥ 100 mm	friction-fixed	centrally positioned	*	400 x 600 mm
600 x 1200 mm + 25%	EI 60	flexible walls ≥ 100 mm	friction-fixed	2 sides	*	600 x 1200 mm + 25%
600 x 5000 mm	EI 60	rigid floors ≥ 150 mm	friction-fixed	2 sides	*	600 x 5000 mm
620 x 70 mm	EI 120	flexible walls ≥ 100 mm	friction-fixed	2 sides	*	620 x 70 mm
100 x 900 mm, horizontal joint	EI 60	rigid walls ≥ 100 mm	board strip [2]	1 side, exp.	[4]	100x900
100 x 900 mm, horizontal joint	EI 60	rigid floors ≥ 150 mm	board strip [3]	1 side, exp.	[5]	100x900

* mount with FT Acrylic on 2 sides

[1] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

[2] Rock wool 50mm, density ≥150kg/m^3.

[3] Rock wool 20mm, density ≥150kg/m^3.

4) FT Board strip min. height 200mm, max. length 900mm; finish top cross cut edge with Firesafe FT Coating, then mount with Conlit Fix adhesive onto wall.

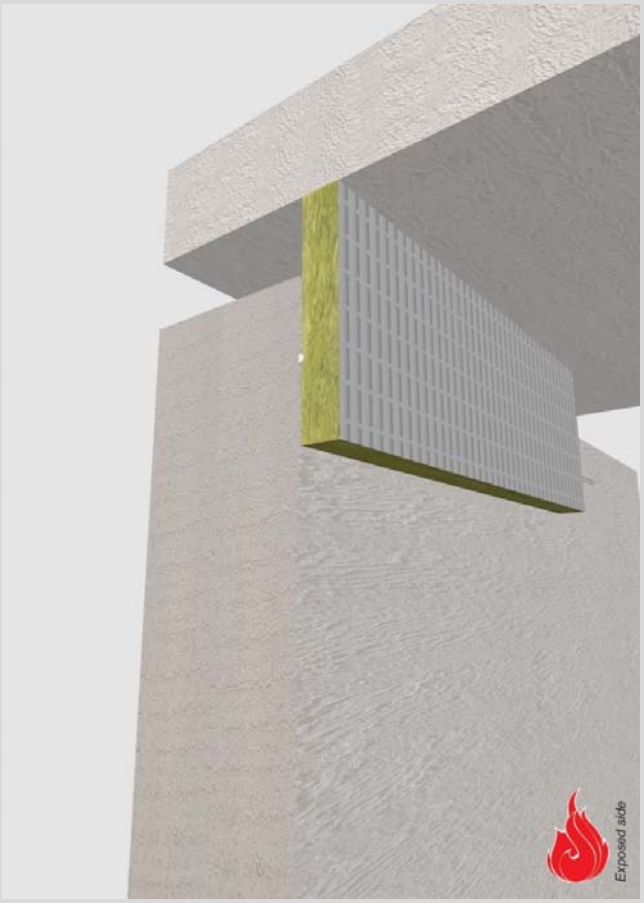
5) FT Board strip min. heigth 300mm, max. length 1100mm; mounted with Firesafe FT Acrylic + screwed onto wall.

Notes:
- installation instructions in TDS

principle detail

Firesafe

tested property	fire resistance
test method	EN 1366-3
service no.	24-59
tested property	smoke resistance
test method	EN 1634-3



blank seals

opening / gap / joint dimensions (mm) max.	EI	constructive element [1]	FT Board: Firesafe fire board type 2S 50 mm	application 1 or 2 sides	finish required	max. opening in construction
200 x 400 mm	EI 180	rigid floors ≥ 150 mm	friction-fixed	2 sides	*	200 x 400 mm
400 x 600 mm	EI 120	rigid walls ≥ 100 mm	friction-fixed	centrally positioned	*	400 x 600 mm
600 x 1200 mm + 25%	EI 60	flexible walls ≥ 100 mm	friction-fixed	2 sides	*	600 x 1200 mm + 25%
600 x 5000 mm	EI 60	rigid floors ≥ 150 mm	friction-fixed	2 sides	*	600 x 5000 mm
620 x 70 mm	EI 120	flexible walls ≥ 100 mm	friction-fixed	2 sides	*	620 x 70 mm
100 x 900 mm, horizontal joint	EI 60	rigid walls ≥ 100 mm	board strip [2]	1 side, exp.	[4]	100x900
100 x 900 mm, horizontal joint	EI 60	rigid floors ≥ 150 mm	board strip [3]	1 side, exp.	[5]	100x900

* mount with FT Acrylic on 2 sides

[1] Constructive element must be classified acc. EN 13501-2 for the required fire resistance period. **EI for flexible walls ≥100mm is also applicable for rigid walls ≥100mm!**

[2] Rock wool 50mm, density ≥150kg/m^3.

[3] Rock wool 20mm, density ≥150kg/m^3.

4) FT Board strip min. height 200mm, max. length 900mm; finish top cross cut edge with Firesafe FT Coating, then mount with Conlit Fix adhesive onto wall.

5) FT Board strip min. heigth 300mm, max. length 1100mm; mounted with Firesafe FT Acrylic + screwed onto wall.

joints

acoustic performance acc. EN 10140-2 + ISO 717-1

			FT Acrylic + FT Paste		FT Graphite		FT Silicone		Flex strip		FT Board	
			DoP CPR-16/0102		DoP CPR-16/0094		DoP CPR-16/0102		DoP CPR-16/0102		DoP CPR-16/0103	
			acrylic mastic + paste		graphite mastic		silicone mastic		flexible joint strip		rockwool slab 50mm 2S	
joint width	joint detail (w x d)		on 1 side	on 2 sides	on 1 side	on 2 sides	on 1 side	on 2 sides	on 1 side	on 2 sides	on 1 side	on 2 sides
with backing												
50mm	50x15mm + PU backing Ø 70mm	$R_{s,w}$ $D_{n,e,w}$ R_w	44 dB 51 dB 31 dB	53 dB 60 dB 40 dB	43 dB 50 dB 30 dB	53 dB 60 dB 40 dB	49 dB 56 dB 36 dB	53 dB 60 dB 40 dB				
	50x15mm + rockwool backing 50 kg/m³	$R_{s,w}$ $D_{n,e,w,}$ R_w	50 dB 57 dB 37 dB	51 dB 58 dB 38 dB	47 dB 54 dB 34 dB	52 dB 59 dB 39 dB	50 dB 57 dB 37 dB	52 dB 59 dB 39 dB				
no backing												
7mm	11x30mm	$R_{s,w}$ $D_{n,e,w}$ R_w							47 dB 54 dB 26 dB	51 dB 58 dB 30 dB		
12mm	11x30mm	$R_{s,w}$ $D_{n,e,w}$ R_w							46 dB 53 dB 27 dB	50 dB 57 dB 31 dB		
15mm	25x25mm	$R_{s,w}$ $D_{n,e,w}$ R_w							45 dB 52 dB 27 dB	51 dB 58 dB 33 dB		
	25x50mm	$R_{s,w}$ $D_{n,e,w}$ R_w							47 dB 54 dB 29 dB	50 dB 57 dB 32 dB		
25mm	25x25mm	$R_{s,w}$ $D_{n,e,w}$ R_w							40 dB 47 dB 24 dB	46 dB 53 dB 30 dB		
	25x50mm	$R_{s,w}$ $D_{n,e,w}$ R_w							44 dB 51 dB 28 dB	46 dB 53 dB 30 dB		
30mm	50x50mm	$R_{s,w}$ $D_{n,e,w}$ R_w							44 dB 51 dB 29 dB	48 dB 55 dB 33 dB		
50mm	50x50mm	$R_{s,w}$ $D_{n,e,w}$ R_w							40 dB 47 dB 27 dB	43 dB 50 dB 30 dB	32 dB 39 dB 19 dB	43 dB 50 dB 30 dB

2S = 2 sides coated with FT Coating

service penetrations

acoustic performance acc. EN 10140-2 + ISO 717-1

	product specs		rockwool slab 50mm			
			FT Board 2S		FT Board 1S	
			on 1 side	on 2 sides	on 1 side	on 2 sides
empty opening	FT Board 50mm	R_w	**24**(-2;-3) **dB**	**28**(-1;-3) **dB**	**25**(-2;-4) **dB**	**45**(-3;-6) **dB**
pipe penetration	FT Board 50mm + plastic pipe	R_w				**43**(-2;-5) **dB** PVC pipe Ø 125mm
	FT Board 50mm + spiral pipe	R_w				**42**(-1;-4) **dB** spiral pipe Ø 125mmn

2S = 2 sides coated with FT Coating

1S = 1 side coated with FT Coating

how-to-read

$$R_s = L_1 - L_2 + 10 \lg \left(\frac{S_n\, l}{A\, l_n} \right)$$

$$D_{n,e} = L_1 - L_2 + 10 \lg \left(\frac{A_0}{A} \right)$$

$$R = L_1 - L_2 + 10 \lg \left(\frac{S}{A} \right)$$

L_1 = energy average sound pressure level in source room

L_2 = energy average sound pressure level in receiving room

S_n = reference area (S_n = 1 m^2)

l = length of joint in used measurement set up (L = 2,187m)

A = equivalent absorption area in receiving room

l_n = reference length (l_n = 1m)

A_0 = reference absorption area (A_0 = 10m^2)

S = area of free test opening in which test element is installed (S = 0,109 m^2)

L_1 = energy average sound pressure level in source room

L_2 = energy average sound pressure level in receiving room

S_n = reference area (S_n = 1 m^2)

l = length of joint in used measurement set up (L = 2,187m)

A = equivalent absorption area in receiving room

l_n = reference length (l_n = 1m)

A_0 = reference absorption area (A_0 = 10m^2)

S = area of free test opening in which test element is installed (S = 0,109 m^2)