

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

dØ	s1	pipe insulation
steel Ø12 up to Ø219	1,0 up to 4,5 mm	non-insulated
	Ø12 up to Ø219 mm	
	1,0 up to 14,2 mm	+ pipe insulation
	Ø15 up to Ø219 mm	+ synth. rubber, min. 60 kg/m ³
	10mm	
	13mm	
	25mm	
	1,0 up to 14,2 mm	+ pipe insulation
	Ø15 up to Ø219 mm	+ glass or rock wool (alu), min. 75 kg/m ³
	20 up to 30mm	
40mm		
50mm		
60mm		
80mm		
1,0 up to 14,2 mm	+ pipe insulation	
Ø15 up to Ø219 mm	+ rock wool (alu), min. 90 kg/m ³	
25mm		
50mm		
3,25 up to 14,2 mm	+ pipe insulation	
Ø42 up to Ø219 mm	+ PIR, min. 33 kg/m ³	
25mm		
50mm		

suitable Firetect products within classification:

Graphite sealant DoP CPR-14/0273		Acrylic sealant or PA sealer DoP CPR-14/0273		Wrap DoP CPR-14/0251	
walls	floors	walls	floors	walls	floors
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		
EI 90 in wall 1+2+3	EI 90 in floor 5				
individual results max. EI 120 in wall 1-n100	EI 60 in floor 5	individual results max. EI 120 in wall 3	individual results max. EI 120 in floor 5	EI 90 in floor 7 2 layer	
EI 60 in wall 1-n75					
EI 60 in wall 1+2+3	EI 60 in floor 5				
individual results max. EI 60 in wall 1-n100					
EI 60 in wall 1-n75					
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
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
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
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
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
EI 60 in wall 1+2+3		EI 120 in wall 3	EI 120 in floor 5 also on PA board		
EI 60 in wall 1+2+3		individual results max. EI 30 in wall 1-n75			
EI 90 in wall 1+2+3		individual results max. EI 90 in wall 1-n100			
EI 60 in wall 1+2+3	EI 180 in floor 5				
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 smoke seal Acrylic sealant on 2 sides

supporting construction

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

- 1: flexible wall ≥ 100 mm, insulated
- 1-n: flexible wall ≥ (xxx) mm, **non-insulated**
- 1-sh: shaft wall ≥ (xxx) mm, **non-insulated**
- 1-sw sandwich wall ≥ 100 mm
- 2: rigid wall ≥ 100 mm
- 3: rigid wall ≥ 150 mm
- 4: flexible ceiling ≥ 150 mm
- 5: rigid floor ≥ 150 mm
- 6: CLT wall ≥ 100 mm
- 7: CLT floor ≥ 140 mm

Max. opening in constructive element: see principle detail. Use PA 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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NOTE:
CONDUITS: see STEEL CONDUITS
SPIRAL pipes: see AIR CONTROL

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How-to-read

charts Field of Application Firetect® fire rated building products

certification

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

Always apply acc. details as stated per principle detail; click [EI performance](#) in chart.

Product certification of CE marked building products is done by DoPs (Declaration of Performance), rather than test reports; more info at www.firetect.eu. Charts do not include all test data. Contact KLF for non-standard (EI) requirements: +31 345 63 97 97 or info@klf.nl.

supporting construction

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

- 1** flexible wall \geq 100 mm; metal or timber studs, plaster board type A + wall insulation
- 1-n**(xxx) flexible wall \geq (xxx) mm; metal or timber studs, plaster board type F, **no** wall insulation
- 1-sh**(xxx) shaft wall \geq (xxx) mm, **non**-insulated
(xxx) = wall thickness in mm; see in charts with EI performance
- 1-sw** sandwich wall \geq 100 mm
- 2** rigid wall \geq 100 mm: blockwork/concrete/masonry, density \geq 600 kg/m³
- 3** rigid wall \geq 150 mm: blockwork/concrete/masonry, density \geq 600 kg/m³
- 4** flexible ceiling \geq 150 mm: metal studs, plaster board type F
- 5** rigid floor \geq 150 mm: (aerated) concrete, density \geq 600 kg/m³
- 6** CLT wall \geq 100 mm
- 7** CLT floor \geq 140 mm

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 + m³ weight are either equal or increased

tested in construction type **2**

also application in constructive element type **3** if wall thickness + m³ weight are either equal or increased

tested in **PA board**

also applicable in FR Mortar fireseal; contact KLF for more info

"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: U = uncapped and C = capped, at resp. exposed / unexposed side

1S + 2S

PA board coated on 1 side (1S) or 2 sides (2S)

pipe insulation

- all synthetic rubber min. 60 kg/m³ eg Armaflex

- all glass wool or rock wool min. 75 kg/m³ eg Climpipe or U Protect Pipe Section Alu2

- all polyolefin foam min. 28 kg/m³ eg Uponor

- all PIR min. 33 kg/m³

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** \leq 15mm with collar + wrap; if larger, use PA board:

walls: max. 600 x 1200 mm + 25%, floors: max. 1000 x 1200 mm up to 600 x 5000 mm

- allowed **'oversized' collar** \leq 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.

Firetect®

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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

EI

gaps + openings **without any service penetrations**

fire resistance in minutes (integrity + insulation)

[up to EI 120](#) for application in walls + floors

disclaimer

Consult www.firetect.eu/download for updates; product development + fire tests are ongoing processes at KLF.

Mentioned brand names are for illustrative purpose only, to indicate type of material tested.

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