

COPPER classification ≤ Ø76 mm

Fire performances are valid for range of pipe dØ + s1 pipe wall 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

dØ	s1	pipe insulation	construct. type
up to Ø28	1,0 up to 1,2 mm Ø8 up to Ø28 mm	non-insulated	flexible + rigid walls + rigid floors
copper Ø12 up to Ø76	1,0 up to 14,0 mm Ø15 up to Ø35 mm	+ pipe insulation + synth. rubber, min. 60 kg/m³	
	Ø1,0 up to 2,1 mm Ø15 up to Ø76 mm	+ glass or rock wool (alu), min. 75 kg/m³	
	1,0 up to 14,0 mm Ø15 up to Ø35 mm	+ rock wool (alu), min. 90 kg/m³	
		13mm	
		25mm	
		20 up to 30mm	
		40mm	
		50mm	
		60mm	
		80mm	
		25mm	
		50mm	

- 1: flexible wall ≥100mm
- 2: rigid wall ≥100mm
- 3: rigid wall ≥150mm
- 5: rigid floor ≥150mm

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 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		
EI 90 in wall 1+2+3		individual results max. EI 120 in wall 3	individual results max. EI 120 in floor 5		
EI 90 in wall 1+2+3					
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
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
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
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
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
EI 60 in wall 1+2+3		individual results max. EI 120 in wall 3	individual results max. EI 120 in floor 5		
EI 90 in wall 1+2+3					
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 Acrylic sealant on 2 sides	

supporting construction

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

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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PE + PP + PVC

plastic cable conduits

PP-R

PP-MD

PP-MX

aluPE-X

PE-Xa

copper

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steel conduits

trays + ladders + wire mesh

cables + bundles

fire dampers

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EN norms for plastic pipes

how-to-read

acoustical

environmental

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; see tab per product on product web page.

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 $\geq 100\text{mm}$; metal or timber studs, plaster board type A + wall insulation
 - 2 rigid wall $\geq 100\text{mm}$: blockwork/concrete/masonry, density $\geq 600 \text{ kg/m}^3$
 - 3 rigid wall $\geq 150\text{mm}$: blockwork/concrete/masonry, density $\geq 600 \text{ kg/m}^3$
 - 4 flexible ceiling $\geq 150\text{mm}$: metal studs, plaster board type F
 - 5 rigid floor $\geq 150\text{mm}$: (aerated) concrete, density $\geq 600 \text{ kg/m}^3$

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 **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**

type of **metal**

EI

U/U + U/C + C/U + C/C

all plastic pipe types acc. [EN norms](#)

all copper or steel or pipes; also suitable for material with lower thermal conductivity + melting point at least equal to tested material

fire resistance in minutes (integrity + insulation)

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

walls: max. $600 \times 1200 \text{ mm} + 25\%$, floors: max. $1000 \times 1200 \text{ mm}$ up to $600 \times 5000 \text{ mm}$

- allowed **'oversized' collar** $\leq 15\text{mm}$, eg use $\varnothing 90$ collar for $\varnothing 80$ 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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