

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

dØ	s1	pipe insulation	construct. type
up to Ø110	2,7 up to 10,0 mm	non-insulated	flexible + rigid walls + rigid floors
	PE 3,4 up to 10,0		
	PP 2,7 up to 6,3		
	PVC 2,7 up to 10,0		
Ø125	3,1 up to 11,7 mm	non-insulated	
	PE 3,9 up to 11,7		
	PP 3,1 up to 7,1		
Ø140 - Ø160	4,0 up to 14,6 mm	non-insulated	
	PE 4,9 up to 14,6		
	PP 4,0 up to 14,6		
Ø200	4,9 up to 18,2 mm	non-insulated	
	PE 6,2 up to 18,2		
	PP 4,9 up to 18,2		
Ø250	6,2 up to 22,7 mm	non-insulated	
	PE 9,6 up to 22,7		
	PP 6,2 up to 22,7		
	PVC 6,2 up to 22,7		

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

suitable Firetect products within classification: *

Graphite sealant DoP CPR-14/0273		FMU collar DoP CPR-14/0251		Wrap DoP CPR-14/0251		supporting construction
walls	floors	walls	floors	walls	floors	
EI 90 in wall 1+2+3	EI 90 in floor 5	EI 60 in wall 1+2+3 also on PA board: screwed on or cast-in collar Ø40 up to Ø110	EI120 in ceiling 4 EI 120 in floor 5 also on PA board: screwed on or cast-in collar Ø40 up to Ø110	EI 120 in wall 1+2+3 2 layer	EI 180 in floor 5 2 layer	Constructive element must be classified acc. EN 13501-2 for the required fire resistance period.
		EI 60 in wall 1+2+3 collar Ø125		EI 60 in wall 1+2+3 2 layer	EI 180 in floor 5 3 layer	
		EI 60 in wall 1+2+3 collar Ø140 or Ø160	EI 90 in floor 5 collar Ø140 or Ø160		EI 180 in floor 5 3 layer	Max. opening in constructive element: see principle detail. Use PA board if opening is larger; see how-to-read.
		EI 60 in wall 1+2+3 collar Ø200				
		EI 60 in wall 1+2+3 also in PA board collar Ø250				Penetration services must be supported; support distance walls max. 500mm support distance floors max. 400mm
		up to Ø400mm with FMU 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 smoke seal Acrylic sealant on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smoke seal Acrylic sealant on 2 sides		

* Alternatively, use Acrylic sealant or PA sealer for pipes ≤ Ø50mm; see [individual results](#).

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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; 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.

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FoA plastic pipes

Firetect® 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

PP
polypropylene

PP-R
high pressure + temperature

PP-MD
low noise

PVC
polyvinyl chloride

PE-LD + PE-HD
dØ up to 250 mm s1 3,2 up to 22,7 mm
pipes within range (dØ+s1) acc.
EN 1519-1
EN 12666-1
EN 12201-2
EN ISO 15494
DIN 8074
DIN 8075
DIN 19535-10
eg Wavin TS Agru PE 100 Agru PE 100-RC

aluPE-X
dØ up to 75 mm s1 2,0 up to 7,5 mm
pipes within range (dØ+s1) acc.
EN 1519-1
EN 12201-2
EN 12666-1
EN ISO 15494
DIN 8074
DIN 8075
DIN 19535-10
eg Uponor MLC TECEflex Geberit Mepla Kekelit Kelox KM 110 Rehau Rautitan stabil Henco Alupex Begetube Alpex

PE-Xa
dØ up to 32 (54) mm s1 2,2 up to 4,4 mm
pipes within range (dØ+s1) acc.
EN 1519-1
EN 12201-2
EN 12666-1
EN 15875
EN ISO 15494
ISO 21003
DIN 8074
DIN 8075
DIN 19535-10
eg Uponor Aqua Geberit Mepla Kekelit Kelox KM 110 Rehau Rautitan flex Rehau Rautitan stabil

PP
dØ up to 250 mm s1 2,7 up to 22,7 mm
pipes within range (dØ+s1) acc.
EN 1451-1
EN ISO 15494
EN ISO 15874
DIN 8077
DIN 8078
eg Dyka PP Agru PP-H

PP-R
dØ up to 110 mm s1 3,7 up to 15,1 mm
pipes within range (dØ+s1) acc.
EN 1451-1
EN ISO 15494
EN ISO 15874
ISO 21003
DIN 8077
DIN 8078
eg Aquatherm Blue Aquatherm Green Aquatechnik PP-R Akatherm PP-R Wavin Pilsa

PP-MD
dØ up to 160 mm s1 1,8 up to 5,4 mm
pipes within range (dØ+s1) acc.
EN 1451-1
EN ISO 15494
EN ISO 15874
DIN 8077
DIN 8078
eg Uponor Decibel Geberit Silent-PP Pipelife Master 3 Rehau Raupiano Plus Poloplast Polo-Kal NG / 3S Wavin SiTech / AS Valsir Silere / Triplus

PP-MX
dØ up to 160 mm s1 2,7 up to 5,7 mm
pipes within range (dØ+s1) acc.
EN 1451-1
EN ISO 15494
EN ISO 15874
DIN 8077
DIN 8078
eg Geberit Silent-Pro

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

Scope of pipes tested with Firetect products
Fire performances are valid for range of pipe diameter **dØ** + pipe wall thickness **s1** within the same pipe material.
Per FoA chart (pipe **material**) is stated what Firetect product to use within range (dØ+s1).
Always install services acc. manufacturer's instructions; support distance ≤ 500mm (walls) and ≤ 400mm (floors).

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