

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

dØ	s1	pipe insulation	construct. type
PE-Xa up to Ø32(54)	2,2 up to 4,4 mm	non-insulated	flexible + rigid walls + rigid floors
	Ø 15 (28) x 2,5		
	Ø 16 (25) x 2,2		
PE-Xa up to Ø32(54)	2,2 up to 4,4 mm	+ pipe insulation + polyolefin rubber , min. 28 kg/m ³	
	Ø 15 (28) x 2,5	10mm	
	Ø 16 (25) x 2,2	10mm	
	Ø 32 (54) x 4,4	20mm	

- 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		FMU collar DoP CPR-14/0251		Wrap DoP CPR-14/0251	
walls	floors	walls	floors	walls	floors	walls	floors
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
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 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 240 in wall 3 1 layer	EI 240 in floor 5 1 layer
EI 120 in wall 1+2 EI 240 in wall 3	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
also tested in shaft walls							
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
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
EI 90 in wall 1+2 EI 120 in wall 3	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
also tested in shaft walls							
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		default: walls: apply on 2 sides floors: apply on 1 side always apply smoke seal Acrylic sealant 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.

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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- PP-R
- PP-MD
- PP-MX
- aluPE-X
- PE-Xa**
- copper
- steel
- steel conduits
- 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

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

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** $\leq 15\text{mm}$ 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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PE + PP + PVC

plastic cable conduits

PP-R

PP-MD

PP-MX

aluPE-X

PE-Xa

copper

steel

steel conduits

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

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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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