

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

service size Cu mm² cable specs

cable trays ≤ 500mm + cable ladders ≤ 300mm	max. Cu mm² = 29647	each cable assembly within max. Cu mm ² ; all cable groups are allowed, max.:								
	<table border="0"> <tr> <td>Ø 21mm</td> <td>group 1 - small sheathed</td> </tr> <tr> <td>Ø 51mm</td> <td>group 2 - medium sheathed</td> </tr> <tr> <td>Ø 80mm</td> <td>group 3 - large sheathed</td> </tr> <tr> <td>Ø 100mm</td> <td>group 4 - data + fibre optic</td> </tr> <tr> <td>Ø 23mm</td> <td>group 5 - non-sheathed</td> </tr> </table> <p>all conduits: max. 3x Ø 16mm steel / plastic</p>	Ø 21mm	group 1 - small sheathed	Ø 51mm	group 2 - medium sheathed	Ø 80mm	group 3 - large sheathed	Ø 100mm	group 4 - data + fibre optic	Ø 23mm
Ø 21mm	group 1 - small sheathed									
Ø 51mm	group 2 - medium sheathed									
Ø 80mm	group 3 - large sheathed									
Ø 100mm	group 4 - data + fibre optic									
Ø 23mm	group 5 - non-sheathed									
cable trays ≤ 500mm + cable ladders ≤ 600mm	max. Cu mm² = 15707	each cable assembly within max. Cu mm ² ; all cable groups are allowed, max.:								
	<table border="0"> <tr> <td>Ø 21mm</td> <td>group 1 - small sheathed</td> </tr> <tr> <td>Ø 47mm</td> <td>group 2 - medium sheathed</td> </tr> <tr> <td>Ø 52mm</td> <td>group 3 - large sheathed</td> </tr> <tr> <td>Ø 100mm</td> <td>group 4 - data + fibre optic</td> </tr> <tr> <td>Ø 23mm</td> <td>group 5 - non-sheathed</td> </tr> </table> <p>all conduits: max. 3x Ø 16mm steel / plastic</p>	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
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Ø 23mm	group 5 - non-sheathed									

trays / ladders ≤ 600mm	max. Cu mm² = 12619	each cable assembly within max. Cu mm ² ; allowed cable groups:		
		<table border="0"> <tr> <td>group 1 - small sheathed</td> </tr> <tr> <td>group 4 - data + fibre optic</td> </tr> </table>	group 1 - small sheathed	group 4 - data + fibre optic
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group 4 - data + fibre optic				

wire mesh trays ≤ 600mm	max. Cu mm² = 6401	each cable assembly within max. Cu mm ² ; allowed cable groups:			
		<table border="0"> <tr> <td>group 1 - small sheathed</td> </tr> <tr> <td>group 2 - medium sheathed</td> </tr> <tr> <td>group 4 - data + fibre optic</td> </tr> </table>	group 1 - small sheathed	group 2 - medium sheathed	group 4 - data + fibre optic
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group 2 - medium sheathed					
group 4 - data + fibre optic					

suitable Firetect products within classification:

Graphite sealant DoP CPR-14/0273	Acrylic or PA sealer DoP CPR-14/0273	PA board or FR Mortar DoP CPR-14/0260
EI 60 in wall 1+2+3	EI 30 in wall 1+2+3	EI 30 in wall 2+3
EI 60 in floor 5	EI 60 in floor 5	EI 60 in floor 5
EI 60 in wall 1+2+3	EI 60 in wall 1+2+3	EI 60 in wall 1+2+3
EI 60 in floor 5	EI 60 in floor 5	EI 60 in floor 5
results max. EI 180 in wall 3	EI 120 in wall 1+2+3	EI 60 in wall 1+2+3
	EI 30 in wall 1n-75	EI 30 in wall 1n-75
EI 60 in wall 1+2+3	EI 90 in wall 1+2+3	EI 30 in wall 1n-75
EI 60 in floor 5	EI 60 in floor 5	EI 60 in floor 5

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

- flexible wall ≥ 100 mm, insulated
- flexible wall ≥ (xxx) mm, **non-insulated**
- shaft wall ≥ (xxx) mm, **non-insulated**
- sandwich wall ≥ 100 mm
- rigid wall ≥ 100 mm
- rigid wall ≥ 150 mm
- flexible ceiling ≥ 150 mm
- rigid floor ≥ 150 mm
- CLT wall ≥ 100 mm
- CLT floor ≥ 140 mm

max. opening (mm)	support distance (mm)
600x1200	at 250mm + 500mm
600x1200	at 500mm
600x1200	at 500mm
600x5000	at 250mm + 400mm

600x1200 +25%	at 500mm
600x5000	at 250mm + 400mm

620 x 70	at 500mm
620 x 70	at 500mm
220 x 80	at 250mm + 500mm

730 x 230	at 250mm + 500mm
660 x 120	at 250mm + 500mm
420 x 100	at 250mm + 500mm
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**.

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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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