Firetect®

PRESTATIE VERKLARING

DECLARATION OF PERFORMANCE (DoP)

No. CPR-14/0260-board

versie 23/1

1. Unieke identificatie van product	**Firetect® PA board**
2. Beoogd gebruik	bouwproduct om aansluitvlakken en bouwkundige sparingen tbv buis- of kabeldoorvoeren bij brand brandwerend af te dichten, teneinde voortijdige branddoorslag te voorkomen in: - standaard flexibele wanden ≥ 100mm - standaard massieve wanden ≥ 100mm - standaard massieve vloeren, min. dikte 150mm
3. Fabrikant	KLF Building Products BV Techniekweg 11, 4207 HC Gorinchem, Nederland
4. Aangewezen gemachtigde	nvt
5. AVCP systeem	Systeem 1
6a. Geharmoniseerde norm	nvt
Certificeringsinstantie	nvt
6b. Europees BeoordelingsDocument (EBD)	350454-00-1104
Europese Technische Beoordeling (ETB)	ETA-14/0260
Conformiteitscertificaat	0960-CPR-SKGIKOB.011131.01.NL
Technische BeoordelingsInstantie (TBI)	SKG-IKOB
Identificatie aangemelde instantie	No. 0960

7. Aangegeven product prestaties

essentiële kenmerken	eigenschappen	prestaties
BWR 1 Mechanische weerstand + stabiliteit		nvt
BWR 2 Brandveiligheid		
EN 13501-1	brandreactie	npd
EN 13501-2	brandweerstand	per geteste toepassing; EI 30 t/m EI 240,
	toepassingsgebied	+ Sa - S200; zie ANNEX BWR2 + ANNEX A
BWR 3 Hygiëne, gezondheid + milieu		IA1/S/W3
EAD 350454-00-1104, §2.2.3	luchtdoorlaatbaarheid	npd
EAD 350454-00-1104, §2.2.4	waterdichtheid	npd
EAD 350454-00-1104, §2.2.5	bestanddelen, emissie en/of uitstoot gevaarlijke bestanddelen	conform CLP geclassificeerd als niet gevaarlijk vlg. Verordering 1272/2008
BWR 4 Veiligheid in gebruik		
EAD 350454-00-1104, §2.2.6	weerstand tegen belasting	npd
EAD 350454-00-1104, §2.2.7	weerstand tegen beweging	npd
EAD 350454-00-1104, §2.2.8	adhesie	npd
EAD 350454-00-1104, §2.2.9	duurzaamheid	Z_2 (intern gebruik)
BWR 5 Bescherming tegen geluid		Rs,w = 32 dB t/m 43 dB
EAD 350454-00-1104, §2.2.10	luchtgeluidisolatie	R_w = 19 dB t/m 45 dB
	toepassingsgebied	zie ANNEX B
BWR 6 Energiebesparing + warmtebehoud		
EAD 350454-00-1104, §2.2.11	thermische geleidbaarheid	npd
EAD 350454-00-1104, §2.2.12	waterdampdoorlaatbaarheid	npd
Algemene aspecten in relatie tot geschiktheid		
EAD 350454-00-1104, §1.2.2	aangenomen voorgenomen levensduur in gebruik	10 jaar

8. Specifieke technische documentatie: nvt

npd= geen prestatie bepaald

De prestaties van de omschreven product zijn conform de aangegeven prestaties. Deze product prestatie verklaring is verstrekt conform Verordening 305/2011, onder de exclusieve verantwoordelijkheid van de fabrikant.
Ondertekend voor en namens de fabrikant te Gorinchem dd 12-05-2023 door C. Buikema

toepassingsgebied
(FoA)

Firetect® PA board

getest en gecertificeerd middels ETB 14/0260;
brandwerende prestaties en toepassingsmethoden voor gebruik in:

bouwdeel [1)]

brandwerende wanden vlg. EN 1363-1	- flexibele wand ≥100mm; metalen of houten regels, gipsplaat type A + wand isolatie
	- massieve wand ≥100mm: (cellen)beton of steenachtig, densiteit ≥ 600 kg/m^3
	- massieve wand ≥150mm: (cellen)beton of steenachtig, densiteit ≥ 600 kg/m^3
brandwerende vloeren vlg. EN 1363-1	- massieve vloer ≥150mm: (gas)beton, densiteit ≥ 600 kg/m^3

[1)] het bouwdeel moet zijn geclassificeerd vlg. EN 13501-2 voor de gestelde brandweerstand

brandweerstand

rookwerendheid vlg. EN 1634-3
rookwerend: Sa - S200

toepassingsgebied:
EI **30** t/m EI **240**: PA board

vlg. EN 13501-2 / 1366-3
bouwkundige sparingen tbv buis + kabeldoorvoeren: [2)]

- kabelgoten	≤ 600x1200mm +25% in wanden	uitcoaten is **niet** nodig
incl. kabelladders + draadgoten	≤ 1000x1200mm / 600x5000mm in vloeren	uitcoaten is **niet** nodig
- kabel bundels	≤ Ø121mm	ook in schachtwanden
- PE/PP/PVC	≤ Ø250mm	bevestigd met PA spirals (wokkels)
- PP-R	≤ Ø63mm	in kabelgoten
- PP-MD	≤ Ø110mm	met akoestische demper
- aluPE-X	≤ Ø75mm	
- PE-Xa	≤ Ø32 (54) mm	
- koper	≤ Ø54mm	
- staal	≤ Ø219mm	

toepassingsgebied:
EI **60** + EI **90**: PA board

vlg. EN 13501-2 / 1366-2 + EN 1366-3
luchtbehandeling

- luchtkanalen	≤ 1000x1000mm	brandwerend bekleden
- brandkleppen	≤ 600x300mm	brandkleppen *, installatie + aanheling

field of application:
EI **60** t/m EI **180**: PA board

acc. EN 13501-2 / 1366-3
loze sparingen

- openingen in flexibele wanden
- openingen + aansluitnaden in massieve wanden
- openingen + aansluitnaden in massieve vloeren

[2)] ondersteun voorzieningen; afstand ophanging: zie principe detail

* principe configuratie

milieu prestaties	BREEAM	LEED	VOC	EN 717-1§	EMICODE	M1	Indoor Air
voorbeeld protocollen, bekijk complete lijst	☑		A+	E1	EC1 PLUS	☑	

gebruiksaanwijzing: applicatie, bevestigingsmiddelen, afwerking & onderhoud: zie TDS

product informatie

Product certificering middels DoP; meer info over certificering van CE bouwproducten via ETB op firetect.nl/certificering
- complete DoP versie: prestatieverklaring + ANNEX BWR2 + ANNEX A + ANNEX B; op aanvraag
- web DoP versie: prestatieverklaring + ANNEX BWR2; overige info is te downloaden via firetect.nl/downloads
- schema's FoA; geschikte producten per type brandwerende afdichting + EI prestatie + product / voeg details
- TDS: algemene gebruiksaanwijzing + product specs

Raadpleeg firetect.nl/downloads voor actuele versies; product ontwikkeling + brandtesten zijn continue processen bij KLF.
Neem contact op met KLF voor afwijkende EI eisen en (niet)standaard of complexe situaties; mail info@klf.nl

toelichting

FoA schema's toepassingsgebied Firetect® brandwerende bouwmaterialen

certificering

Gebruik FoA schema's als *richtlijn* om snel geschikte Firetect producten binnen classificatie te bepalen.

Applicatie altijd vlg. detaillering zoals vermeld per principle detail; klik EI prestatie in FoA schema.

Product certificering van bouwproducten met CE markering verloopt via prestatieverklaringen (DoPs) in plaats van testrapporten; meer info op www.firetect.nl. Schema's omvatten niet alle test data. Neem voor afwijkende (EI) situaties contact op met KLF: +31 345 63 97 97 of info@klf.nl.

bouwdeel

product is getest in + gecertificeerd voor bouwdeel, standaard type:

1	flexibele wand ≥ 100 mm; metalen of houten regels, gipsplaat type A + wand isolatie
1-n(xxx)	flexibele wand ≥ 100 mm, **niet geïsoleerd**
1-sh(xxx)	schacht wand ≥ (xxx) mm, **niet geïsoleerd**
	(xxx) = wand dikte in mm; zie in schema's bij EI prestatie
1-sw	sandwich wand ≥ 100 mm
2	massieve wand ≥ 100 mm: (cellen)beton of steenachtig, densiteit ≥ 600 kg/m^3
3	massieve wand ≥ 150 mm: (cellen)beton of steenachtig, densiteit ≥ 600 kg/m^3
4	flexibel plafond ≥ 150 mm: metalen regels, gipsplaat type F
5	massieve vloer ≥ 150 mm: (gas)beton, densiteit ≥ 600 kg/m^3
6	CLT wand ≥ 100 mm
7	CLT vloer ≥ 140 mm

Let op Bouwdeel moet zijn geclassificeerd vlg. EN 13501-2 voor de gestelde brandweerstand.

getest in bouwdeel type **1**	ook toepasbaar in bouwdeel type **2+3** als wanddikte + m^3 gewicht gelijk zijn danwel toenemen
getest in bouwdeel type **2**	ook toepasbaar in bouwdeel type **3** als wanddikte + m^3 gewicht gelijk zijn danwel toenemen
getest in PA board	ook toepasbaar met brandwerende mortel (BW); neem contact op met KLF voor meer info

"you may always upgrade, but never downsize"

buis doorvoeren

type kunststof	alle kunststof buizen vlg. EN normen
type metaal	alle koper of staal buizen; ook geschikt voor materiaal met lagere thermische geleiding + smeltpunt minstens gelijk aan getest materiaal
EI	brandweerstand in minuten (integriteit + isolatie)
U/U + U/C + C/U + C/C	buis einde: U = uncapped (open) en C = capped (gesloten), aan resp. blootgestelde / niet blootgestelde zijde
1S + 2S	PA board gecoat aan 1 zijde (1S) of 2 zijden (2S)

buis isolatie

- alle synthetische rubber min. 60 kg/m^3 bijv. Armaflex
- alle glaswol of steenwol min. 75 kg/m^3 bijv. Climpipe
- alle polyolefine schuim min. 28 kg/m^3 bijv. Uponor
- alle PIR min. 33 kg/m^3

LS	local sustained = gedeeltelijk geïsoleerde buis; totale isolatie lengte in mm door bouwdeel (symmetrisch)
LI	local interrupted = gedeeltelijk geïsoleerde buis; isolatie lengte in mm aan elke zijde van bouwdeel
CS	continued sustained = volledig geïsoleerde buis
CI	continued interrupted = volledig geïsoleerde buis, echter onderbroken in bouwdeel

max. opening

zie principe detail, plus:
- toegestane overmaatse sparing ≤ 15mm bij brandmanchet + wrap; indien groter, gebruik PA board:
  wanden: max. 600 x 1200 mm + 25%, vloeren: max. 1000 x 1200 mm t/m 600 x 5000 mm
- toegestane 'oversized' brandmanchet ≤ 15mm, bijv. gebruik Ø90 manchet voor Ø80 buis

Let op Ondersteun buizen; afstand ophanging: zie principe detail.
Zet glaswol of steenwol individueel vast (niet omwikkelen!) met staaldraad; zie principe detail.

Firetect®
► INDEX
PE + PP + PVC
kunststof mantelbuizen
PP-R
PP-MD
PP-MX
aluPE-X
PE-Xa
koper
staal
stalen mantelbuizen
gietijzer
kabelgoot + ladder / mand
kabels + bundels
brandkleppen
ventilatie roosters
luchtkanaal bekleding
rechte voegen
inbouwdozen
loze sparingen
EN normen kunststof buizen
toelichting
akoestiek
duurzaamheid

toelichting

FoA schema's toepassingsgebied Firetect® brandwerende bouwmaterialen

certificering

Gebruik FoA schema's als *richtlijn* om snel geschikte Firetect producten binnen classificatie te bepalen.

Applicatie altijd vlg. detaillering zoals vermeld per principle detail; klik EI prestatie in FoA schema.

Product certificering van bouwproducten met CE markering verloopt via prestatieverklaringen (DoPs) in plaats van testrapporten; meer info op www.firetect.nl. Schema's omvatten niet alle test data. Neem voor afwijkende (EI) situaties contact op met KLF: +31 345 63 97 97 of info@klf.nl.

kabel doorvoeren

type voorziening: alle stalen (gegalvaniseerde) kabelgoten + ladders, niet geperforeerd + geperforeerd
alle stalen (gegalvaniseerde) draadgoten

EI: brandweerstand in minuten (integriteit + isolatie)

optimale bezetting

configuratie		horizontaal	verticaal
Min. afstand naar bouwk. sparing	LARGE	35mm	30 mm
	MIXED	30 mm	0 mm
Min. afstand tussen voorzieningen	LARGE	5mm	100 mm
	MIXED	20 mm	20 mm

kabelgroepen

KG 1 - klein ommanteld	max. Ø 21mm
KG 2 - medium ommanteld	max. Ø 50mm
KG 3 - groot ommanteld	max. Ø 80mm
KG 4 - data + glasvezel	max. Ø 100mm bundel
KG 5 - niet ommanteld	max. Ø 23mm
mantelbuis, staal of kunststof	max. Ø 16mm

max. opening: zie principe detail

Let op: Ondersteun kabel voorzieningen; afstand ophanging: zie principe detail.

loze sparingen

gaten + sparingen zonder doorvoeren

EI: brandweerstand in minuten (integriteit + isolatie)

t/m EI 120 voor toepassing in wanden + vloeren

disclaimer

Raadpleeg www.firetect.nl/downloads voor updates; product ontwikkeling + brandtesten zijn doorlopende processen bij KLF.
Genoemde merken zijn uitsluitend voor illustratief gebruik, ter indicatie van geteste type materialen.

Firetect®
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PE + PP + PVC
kunststof mantelbuizen
PP-R
PP-MD
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aluPE-X
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koper
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kabelgoot + ladder / mand
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ventilatie roosters
luchtkanaal bekleding
rechte voegen
inbouwdozen
loze sparingen
EN normen kunststof buizen
toelichting
akoestiek
duurzaamheid

kunststof buizen

Firetect® brandwerende bouwmaterialen zijn toepasbaar in:

PE
polyethylene

aluPE-X
verwarming + sanitair
ook wel PEX-AL-PEX,
Al-Composite of Multilayer

PE-Xa
druk- en warmte bestendig
cross-linked PE

PE-LD + PE-HD	aluPE-X	PE-Xa
dØ t/m 250 mm	dØ t/m 75 mm	dØ t/m 32 (54) mm
s1 3,2 t/m 22,7 mm	s1 2,0 t/m 7,5 mm	s1 2,2 t/m 4,4 mm
buizen binnen bandbreedte (dØ+s1) vlg.	buizen binnen bandbreedte (dØ+s1) vlg.	buizen binnen bandbreedte (dØ+s1) vlg.
EN 1519-1	EN 1519-1	EN 1519-1
EN 12666-1	EN 12201-2	EN 12201-2
EN 12201-2	EN 12666-1	EN 12666-1
EN ISO 15494	EN ISO 15494	EN 15875
DIN 8074	DIN 8074	EN ISO 15494
DIN 8075	DIN 8075	ISO 21003
DIN 19535-10	DIN 19535-10	DIN 8074
		DIN 8075
		DIN 19535-10
bijv. Wavin TS	bijv. Uponor MLC	bijv. Uponor Aqua
Agru PE 100	TECEflex	Geberit Mepla
Agru PE 100-RC	Geberit Mepla	Kekelit Kelox KM 110
	Kekelit Kelox KM 110	Rehau Rautitan flex
	Rehau Rautitan stabil	Rehau Rautitan stabil
	Henco Alupex	
	Bbijv.etube Alpex	

PP
polypropylene

PP-R
high pressure + temperature

PP-MD
low noise

PP	PP-R	PP-MD	PP-MX
dØ t/m 250 mm	dØ t/m 110 mm	dØ t/m 160 mm	dØ t/m 160 mm
s1 2,7 t/m 22,7 mm	s1 3,7 t/m 15,1 mm	s1 1,8 t/m 5,4 mm	s1 2,7 t/m 5,7 mm
buizen binnen bandbreedte (dØ+s1) vlg.	buizen binnen bandbreedte (dØ+s1) vlg.	buizen binnen bandbreedte (dØ+s1) vlg.	buizen binnen bandbreedte (dØ+s1) vlg.
EN 1451-1	EN 1451-1	EN 1451-1	EN 1451-1
EN ISO 15494	EN ISO 15494	EN ISO 15494	EN ISO 15494
EN ISO 15874	EN ISO 15874	EN ISO 15874	EN ISO 15874
DIN 8077	ISO 21003	DIN 8077	DIN 8077
DIN 8078	DIN 8077	DIN 8078	DIN 8078
	DIN 8078		
bijv. Dyka PP	bijv. Aquatherm Blue	bijv. Uponor Decibel	bijv. Geberit Silent-Pro
Agru PP-H	Aquatherm Green	Geberit Silent-PP	
	Aquatechnik PP-R	Pipelife Master 3	
	Akatherm PP-R	Rehau Raupiano Plus	
	Wavin Pilsa	Poloplast Polo-Kal NG / 3S	
		Wavin SiTech / AS	
		Valsir Silere / Triplus	

PVC
polyvinyl chloride

PVC + PVC-C + PVC-U
dØ t/m 400 mm
s1 2,7 t/m 22,7 mm
buizen binnen bandbreedte (dØ+s1) vlg.
EN 1329-1
EN 1453-1
EN 1452
EN 1566-1
EN ISO 15493
ISO 15877
DIN 8061
DIN 8062
DIN 19531-10

Toepassingsgebied van buizen, getest met Firetect producten

*Brandwerende prestaties zijn geldig voor bandbreedte buis diameter **dØ** + buiswanddikte **s1** van hetzelfde buis materiaal.*

Per FoA schema (buis **materiaal**) is vermeld welk Firetect product te gebruiken binnen de bandbreedte (dØ+s1).

Installeer voorzieningen altijd vlg. instructies van fabrikant; afstand ophanging ≤ 500mm (wanden) en ≤ 400mm (vloeren).

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

suitable Firetect products within classification: *

dØ	s1	pipe insulation	Graphite sealant (DoP CPR-14/0273) walls	Graphite sealant floors	FMU collar (DoP CPR-14/0251) walls	FMU collar floors	Wrap (DoP CPR-14/0251) walls	Wrap floors
up to Ø110	2,7 up to 10,0 PE 3,4 up to 10,0 PP 2,7 up to 6,3 PVC 2,7 up to 10,0	non-insulated	EI 90 in wall 1+2+3 EI 90 in wall 1-n100 EI 30 in wall 1-n75 EI 90 in wall 6	EI 90 in floor 5 EI 90 in floor 7	EI 60 in wall 1+2+3 EI 60 in wall 1-n100 EI 30 in wall 1-n75 also on **PA board**: screwed on or cast-in	EI120 in ceiling 4 EI 120 in floor 5 EI 90 in floor 7 also on **PA board**: screwed on or cast-in	EI 120 in wall 1+2+3 2 layer	EI 180 in floor 5 2 layer EI 90 in floor 7 2 layer
Ø125	3,1 up to 11,7 PE 3,9 up to 11,7 PP 3,1 up to 7,1 PVC 3,1 up to 11,7	non-insulated			EI 60 in wall 1+2+3 EI 60 in wall 1-n100 collar Ø125		EI 60 in wall 1+2+3 2 layer	EI 180 in floor 5 3 layer
Ø140 - Ø160	4,0 up to 14,6 PE 4,9 up to 14,6 PP 4,0 up to 14,6 PVC 4,0 up to 14,6	non-insulated			EI 60 in wall 1+2+3 EI 60 in wall 1-n100 collar Ø140 or Ø160	EI 90 in floor 5 collar Ø140 or Ø160		EI 180 in floor 5 3 layer
Ø200	4,9 up to 18,2 PE 6,2 up to 18,2 PP 4,9 up to 18,2 PVC 4,9 up to 18,2	non-insulated			EI 60 in wall 1+2+3 EI 60 in wall 1-n100 collar Ø200			
Ø250	6,2 up to 22,7 PE 9,6 up to 22,7 PP 6,2 up to 22,7 PVC 6,2 up to 22,7	non-insulated			EI 60 in wall 1+2+3 also in **PA board** collar Ø250			

* Alternatively, use Acrylic sealant or PA sealer for pipes ≤ Ø50mm; see individual results.

non-standard configurations eg angled, bundled or XL:
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 smokeseal Acrylic sealant 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:

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

NOTE:
CONDUITS: see
PLASTIC CABLE CONDUITS

► INDEX
PE + PP + PVC
plastic cable conduits
PP-R
PP-MD
PP-MX
aluPE-X
PE-Xa
copper
steel
steel conduits
cast iron
trays + ladders + wire mesh
cables + bundles
fire dampers
air transfer grilles
duct cladding
linear joints
socket boxes
blank seals
how-to-read
acoustical
environmental

PP-R classification ≤ Ø125 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

PP-R acc. EN norms
dØ 40 up to 125 mm
s1 3,7 up to 17,1 mm
pipe brands eg Aquatherm, Aquatechnik, Wavin Pilsa

suitable Firetect products within classification:

dØ	s1	pipe insulation	Graphite sealant (DoP CPR-14/0273) walls	Graphite sealant (DoP CPR-14/0273) floors	FMU collar (DoP CPR-14/0251) walls	FMU collar (DoP CPR-14/0251) floors	Wrap (DoP CPR-14/0251) floors
Ø40	3,7 up to 5,5	non-insulated	EI 120 in wall 1+2 EI 240 in wall 3	results max. EI 240 in floor 5	results max. EI 120 in wall 1+2 EI 240 in wall 3 collar Ø40	results max. EI 240 in floor 5 collar Ø40	
		+ pipe insulation + **polythylene rubber**, min. 25 kg/m³ 25 mm	individual result: EI 60 in wall 1-n100 in **PA board**				
Ø50	4,6	non-insulated	individual result: EI 60 in wall 1-n75				
Ø63	5,8 up to 8,6	non-insulated	results max. EI 120 in wall 1+2 EI 240 in wall 3	results max. EI 240 in floor 5	EI 90 in wall 1+2 EI 120 in wall 3 collar Ø63	results max. EI 120 in floor 5 collar Ø63	
Ø75	6,8 up to 10,3 s1 up to 10,3	non-insulated	results max. EI 120 in wall 1+2 EI 240 in wall 3 individual result: EI 60 in wall 1-n75	results max. EI 240 in floor 5	EI 90 in wall 1+2 EI 120 in wall 3 collar Ø75	EI 120 in floor 5 collar Ø75	
Ø90	8,2	+ pipe insulation + **polythylene rubber**, min. 25 kg/m³ 25 mm	individual result: EI 60 in wall 1-n100				
Ø110	10,0 up to 15,1	non-insulated	results max. EI 120 in wall 1+2+3	results max. EI 180 in floor 5	EI 60 in wall 1+2+3 collar Ø110	results max. EI 120 in floor 5 collar Ø110	
Ø125	11,4 up to 17,1	non-insulated				results max. EI 180 in floor 5 collar Ø125	EI 240 in floor 5 3 layer
			joint details: min. W x D, default: walls: 10 x 40 mm, apply on 2 sides floors: 15 x 40mm, apply on 2 sides		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal Acrylic sealant on 2 sides		default: 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:

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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PE + PP + PVC
plastic cable conduits
PP-R
PP-MD
PP-MX
aluPE-X
PE-Xa
copper
steel
steel conduits
cast iron
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

PP-MD classification ≤ Ø160 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

PP-MD acc. EN norms
dØ 32 up to 160 mm
s1 1,8 up to 5,4 mm

pipe brands eg Uponor, Poloplast, Rehau, Geberit, Pipelife
acoustical damper brands eg Uponor Bottom Bend

suitable Firetect products within classification:

dØ	s1	configuration	Graphite sealant (DoP CPR-14/0273) walls	Graphite sealant floors	FMU collar (DoP CPR-14/0251) walls	FMU collar floors	Wrap (DoP CPR-14/0251) walls	Wrap floors
Ø32	1,8	non-insulated	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 180 in wall 3 1 layer	EI 180 in floor 5 2 layer
Ø50	2,0	non-insulated	EI 90 in wall 1+2 EI 180 in wall 3	EI 180 in floor 5	EI 120 in wall 1+2 EI 180 in wall 3 collar Ø50	EI 240 in floor 5 collar Ø50	EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 1 layer
Ø75	2,6	non-insulated	EI 60 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 Ø75	EI 240 in floor 5 collar Ø75	EI 120 in wall 1+2 EI 240 in wall 3 1 layer	EI 240 in floor 5 1 layer
Ø110	3,8	non-insulated	EI 60 in wall 1+2+3	EI 60 in floor 5	EI 120 in wall 1+2+3 collar Ø110	EI 180 in floor 5 collar Ø110	EI 120 in wall 1+2+3 2 layer	EI 240 in floor 5 2 layer
						EI 90 in floor 7 collar Ø160 in FR Mortar or PA board		EI 90 in floor 7 2 layer
		+ pipe socket			EI 60 in wall 1+2+3 collar Ø140	EI 240 in floor 5 collar Ø140	EI 90 in wall 1+2+3 3 layer	
						EI 90 in floor 7 collar Ø160 in FR Mortar or PA board		
		+ acoustical damper				EI 180 in floor 5 collar Ø110 in FR Mortar or PA board		
Ø160	5,4	non-insulated			EI 60 in wall 1+2+3 collar Ø160	EI 180 in floor 5 collar Ø160		EI 240 in floor 5 3 layer
		+ pipe socket			EI 60 in wall 1+2+3 collar Ø200			
			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		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:

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

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aluPE-X (composite) classification ≤ Ø75 mm

Fire performances are valid for range of dØ pipe diameter + s1 pipe thickness within the same pipe material:

aluPE-X (composite) acc. EN norms
dØ 16 up to 75 mm
s1 2,0 up to 7,5 mm

pipe brands eg Uponor, Rehau, Geberit, Henco
pipe insulation brands eg Climpipe, Rockwool, Armaflex, U Protect Pipe Section Alu2

suitable Firetect products within classification:

dØ	s1	pipe insulation	Graphite sealant (DoP CPR-14/0273) walls	Graphite sealant (DoP CPR-14/0273) floors	Acrylic sealant or PA sealer (DoP CPR-14/0273) walls	Acrylic sealant or PA sealer (DoP CPR-14/0273) floors	FMU collar (DoP CPR-14/0251) floors	Wrap (DoP CPR-14/0251) walls	Wrap (DoP CPR-14/0251) floors
up to Ø25	2,0 up to 2,5	non-insulated	EI 120 in wall 1+2+3		EI 120 in wall 1+2+3				
Ø16 up to Ø75 + synth. rubber insulation	2,0 up to 7,5	+ pipe insulation + **synth. rubber**, min. 60 kg/m³ up to 13mm	EI 60 in wall 1+2+3 EI 90 in wall 1-n100 EI 60 in wall 1-n75 also in **PA board**	individual results max. EI 90 in floor 5 EI 90 in floor 7	EI 120 in wall 3 EI 90 in wall 6	EI 120 in floor 5 EI 90 in floor 7 10 x 25 mm	EI 90 in floor 7 collar Ø50 - Ø90	EI 60 in wall 1+2+3 2 layer also in **PA board**	EI 90 in floor 7 2 layer
			EI 120 in wall 2+3 in FR Mortar		EI 60 in wall 2+3 in FR Mortar			EI 90 in wall 2+3 1 layer in FR Mortar	
Ø16 up to Ø75 + glass or rock wool (alu) insulation	2,0 up to 7,5	+ pipe insulation + **glass or rock wool** (alu), min. 75 kg/m³ 20 + 30mm	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 1 layer	EI 240 in floor 5 2 layer
		40mm	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 1 layer	EI 240 in floor 5 2 layer
		50mm	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 2 layer	EI 240 in floor 5 2 layer
		60mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5				EI 120 in wall 1+2+3 3 layer	EI 120 in floor 5 3 layer
		80mm	EI 120 in wall 1+2 EI 240 in wall 3	EI 240 in floor 5				EI 120 in wall 1+2+3 3 layer	EI 120 in floor 5 3 layer
			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		floors: apply on 1 side always apply smokeseal Acrylic sealant 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:

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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cables + bundles
fire dampers
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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

suitable Firetect products within classification:

dØ	s1	pipe insulation	Graphite sealant DoP CPR-14/0273 walls	Graphite sealant DoP CPR-14/0273 floors	Acrylic sealant or PA sealer DoP CPR-14/0273 walls	Acrylic sealant or PA sealer DoP CPR-14/0273 floors	FMU collar DoP CPR-14/0251 walls	FMU collar DoP CPR-14/0251 floors	Wrap DoP CPR-14/0251 walls	Wrap DoP CPR-14/0251 floors
Ø15 (28)	2,5	non-insulated	EI 90 in wall 1+2 EI 240 in wall 3 EI 60 in wall 1-sh75 on PA board	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
		+ pipe insulation + **polyolefin rubber**, min. 28 kg/m³ 10mm	EI 120 in wall 1+2 EI 240 in wall 3 EI60 in wall 1-sh75 on PA board	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
Ø16 (25)	2,2	non-insulated	EI 120 in wall 1+2 EI 240 in wall 3 EI 60 in wall 1-sh75 on PA board	EI 240 in floor 5	EI 120 in wall 1+2 EI 240 in wall 3 EI 90 in wall 6	EI 240 in floor 5 EI 90 in floor 7	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
		+ pipe insulation + **polyolefin rubber**, min. 28 kg/m³ 10mm	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
Ø32 (54)	4,4	non-insulated	EI 120 in wall 1+2 EI 240 in wall 3 EI 60 in wall 1-sh75 on PA board	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
		+ pipe insulation + **polyolefin rubber**, min. 28 kg/m³ 20mm	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
			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		default: walls: apply on 2 sides floors: apply on 1 side always apply smokeseal 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:

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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linear joints
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COPPER classification ≤ Ø76 mm

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

suitable Firetect products within classification:

dØ	s1	pipe insulation	Graphite sealant DoP CPR-14/0273 walls	Graphite sealant DoP CPR-14/0273 floors	Acrylic sealant or PA sealer DoP CPR-14/0273 walls	Acrylic sealant or PA sealer DoP CPR-14/0273 floors	Wrap DoP CPR-14/0251 walls	Wrap DoP CPR-14/0251 floors
up to Ø28	1,0 up to 1,2	non-insulated	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		
up to Ø42 + synth. rubber or rock wool (alu) insulation	1,0 up to 14,0	+ pipe insulation						
		+ synth. rubber, min. 60 kg/m³ 13mm	EI 90 in wall 1+2+3 individual results max. EI 60 in wall 1-n75	individual results max. EI 90 in floor 7	individual results max. EI 120 in wall 3	individual results max. EI 120 in floor 5		individual results max. EI 90 in floor 7
		25mm	EI 90 in wall 1+2+3 individual result: EI 90 in wall 1-n100 individual results max. EI 60 in wall 1-n75					
		+ rock wool (alu), min. 90 kg/m³ 25mm	EI 60 in wall 1+2+3		individual results max. EI 90 in wall 1-n100 EI 60 in wall 1-n75 EI 120 in wall 3	individual results max. EI 120 in floor 5		
		50mm	EI 90 in wall 1+2+3					
up to Ø76 + glass or rock wool (alu) insulation	1,0 up to 2,1	+ pipe insulation						
		+ glass or rock wool (alu), min. 75 kg/m³ 20 up to 30mm	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
		40mm	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
		50mm	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
		60mm	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
		80mm	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
			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:

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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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

suitable Firetect products within classification:

dØ	s1	pipe insulation	Graphite sealant DoP CPR-14/0273 walls	Graphite sealant DoP CPR-14/0273 floors	Acrylic sealant or PA sealer DoP CPR-14/0273 walls	Acrylic sealant or PA sealer DoP CPR-14/0273 floors	Wrap DoP CPR-14/0251 walls	Wrap DoP CPR-14/0251 floors
steel Ø12 up to Ø219	1,0 up to 4,5 mm Ø12 up to Ø219 mm	non-insulated	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		
	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + synth. rubber, min. 60 kg/m³						
		10mm	EI 90 in wall 1+2+3	EI 90 in floor 5				
		13mm	EI 120 in wall 1+2+3 individual results max. EI 90 in wall 1-n100 EI 60 in wall 1-n75	EI 60 in floor 5 EI 90 in floor 7	individual results max. EI 120 in wall 3	individual results max. EI 120 in floor 5		EI 90 in floor 7 2 layer
		25mm	EI 60 in wall 1+2+3 EI 60 in wall 1-n100 individual results max. EI 60 in wall 1-n75	EI 60 in floor 5				
	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + glass or rock wool (alu), min. 75 kg/m³						
		20 up to 30mm	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
		40mm	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
		50mm	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
		60mm	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
		80mm	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
	1,0 up to 14,2 mm Ø15 up to Ø219 mm	+ pipe insulation + rock wool (alu), min. 90 kg/m³						
		25mm	EI 60 in wall 1+2+3		EI 120 in wall 3 EI 60 in wall 1-n100 individual results max. EI 30 in wall 1-n75	EI 120 in floor 5 also on PA board		
		50mm	EI 90 in wall 1+2+3		individual results max. EI 90 in wall 1-n100			
	3,25 up to 14,2 mm Ø42 up to Ø219 mm	+ pipe insulation + PIR, min. 33 kg/m³						
		25mm	EI 60 in wall 1+2+3	EI 180 in floor 5				
		50mm	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 smokeseal 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.

NOTE:
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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

suitable Firetect products within classification:

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

service size	Cu mm²	cable specs	Graphite sealant (DoP CPR-14/0273)	Acrylic or PA sealer (DoP CPR-14/0273)	PA board (DoP CPR-14/0260)	or FR Mortar	max. opening (mm)	support distance (mm)
cable trays ≤ 500mm + **cable ladders** ≤ 300mm	max. Cu mm² = **29647**	each cable assembly within max. Cu mm²; **all** cable groups are allowed, max.: Ø 21mm group 1 - small sheathed Ø 61mm group 2 - medium sheathed Ø 80mm group 3 - large sheathed Ø 100mm group 4 - data + fibre optic Ø 23mm group 5 - non-sheathed all conduits: max. 3x Ø 16mm steel / plastic		EI 60 in wall 1+2+3	2x 50mm 2S	100mm	600x1200	at 250mm + 500mm
				EI 30 in wall 1+2+3	2x 50mm 2S	100mm	600x1200	at 500mm
				EI 30 in wall 2+3	1x 50mm 2S	50mm	600x1200	at 500mm
				EI 60 in floor 5	2x 50mm 2S	100mm	600x5000	at 250mm + 400mm
	max. Cu mm² = **15707**	each cable assembly within max. Cu mm²; **all** cable groups are allowed, max.: 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 group 5 - non-sheathed all conduits: max. 3x Ø 16mm steel / plastic	EI 60 in wall 1+2+3	EI 60 in wall 1+2+3	2x 50mm 2S	100mm	600x1200 +25%	at 500mm
			EI 60 in floor 5	EI 60 in floor 5	2x 50mm 2S	100mm	600x5000	at 250mm + 400mm
trays / ladders ≤ 600mm	max. Cu mm² = **12619**	each cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed group 4 - data + fibre optic	results max. EI 180 in wall 3	EI 120 in wall 1+2+3	1x 50mm 2S	50mm	620 x 70	at 500mm
				EI 60 in wall 1+2+3	-	-	620 x 70	at 500mm
				EI 30 in wall 1n-75	-	-	220 x 80	at 250mm + 500mm
wire mesh trays ≤ 600mm	max. Cu mm² = **6401**	each cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed group 2 - medium sheathed group 4 - data + fibre optic		EI 60 in wall 1+2+3	2x 50mm 2S	100mm	730 x 230	at 250mm + 500mm
				EI 90 in wall 1+2+3	2x 50mm 2S	100mm	660 x 120	at 250mm + 500mm
				EI 30 in wall 1n-75	-	-	420 x 100	at 250mm + 500mm
				EI 60 in floor 5	2x 50mm 2S	100mm	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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cables + bundles
fire dampers
air transfer grilles
duct cladding
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CABLE BUNDLES classification ≤ 121 mm

Fire performances are valid for for **range** of cable group + max. Cu mm²:

cable group 1 + 2 + 4 + 5
dØ up to 31 mm

also cables in plastic conduits
dØ up to 110 mm

suitable Firetect products within classification:

bundle size	cable specs	Graphite sealant DoP CPR-14/0273	Acrylic or PA sealer DoP CPR-14/0273	Cable transit DoP CPR-14/0251	Flex plug DoP CPR-14/0251	FMU collar DoP CPR-14/0251
max. Ø 40 mm	cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed group 2 - medium sheathed group 4 - data + fibre optic conduit, plastic		EI 120 in wall 1+2 EI 240 in wall 3 EI 90 in wall 6 EI 240 in floor 5 EI 90 in floor 7		EI 120 in wall 1+2 EI 240 in wall 3 EI 240 in floor 5	
max. Ø 55 mm	cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed group 4 - data + fibre optic conduit, plastic	EI 60 in wall 1-n75	EI 90 in wall 1+2 EI 180 in wall 3 EI 180 in floor 5	EI 120 in wall 1+2+3 EI 90 in wall 6 EI 90 in floor 7		
max. Ø 121 mm	cable assembly within max. Cu mm²; allowed cable groups: group 1 - small sheathed group 2 - medium sheathed group 4 - data + fibre optic conduit, plastic	EI 120 in wall 1+2+3 EI 90 in wall 1-n100 EI 60 in wall 1-n75 EI 90 in wall 6 EI 240 in floor 5 EI 120 in ceiling 4 EI 90 in floor 7	EI 120 in wall 1+2+3 EI 90 in wall 6 EI 180 in floor 5 also on **PA board** EI 90 in floor 7	EI 90 in wall 1+2+3 EI 120 in floor 5		EI 120 in wall 1+2+3 EI 240 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		position centrally in construction mount with Acrylic sealant put loose rock wool ≥ 100kg/m³ in transit on 2 sides	position centrally in construction	default: walls: apply on 2 sides floors: apply on 1 side apply smokeseal Acrylic

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

NOTE:
CONDUITS in trays + ladders: see **CABLE TRAYS**

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AIR CONTROL SERVICES classification

Fire performances are **principle configurations**, valid for services within range:

fire dampers	up to 600 x 300 mm
air ducts	up to 1000 x 1000 mm

always install services acc. manufacturer's instructions

suitable Firetect products within classification:

service size	service specs	Graphite sealant DoP CPR-14/0273	Acrylic sealant or PA sealer DoP CPR-14/0273	PA coating DoP CPR-14/0260	PA board or FR Mortar DoP CPR-14/0260		Air grill
fire dampers	**installation** in firewall, supported to floor max. 600 x 300 mm acc. EN 1366-3 acc. EN 1634-3 **upgrade** towards firewall, supported to floor acc. EN 1366-2 acc. EN 1634-3				EI 90 in wall 1+2+3 2x 50mm 2S	100mm	
					EI 60 in wall 1+2+3 cladding: 1x 50mm 2S	100mm	
	in spiral pipes max.Ø 160 mm with or without valve acc. EN 1366-3	in **PA board** with pipe insulation: EI 60 in wall 1-n100	in **PA board** EI 60 in wall 1-n75 EI 60 in wall 1-n100	EI 120 in wall 1+2+3 EI 120 in ceiling 4 EI 120 in floor 5			
air ducts	**circular ducts** max. Ø 300 mm acc. EN 1366-3		EI 90 in floor 7				
	duct cladding max. 1000 x 1000 mm acc. EN 1366-3 acc. EN 1634-3				EI 60 in wall 1+2+3 cladding: 1x 50mm 1S	100mm	
					EI 60 in floor 5 cladding: 1x 50mm 1S	60mm	
air transfer grilles	**ventilation** max. 600 x 600 mm acc. EN 1364-5						EI 60 in wall 1+2+3
							EI 120 in floor 5
		joint details: min. W x D, default: floors: 10 x 25 mm apply on 2 sides	joint details: min. W x D, default: floors: 10 x 25 mm apply on 2 sides	0,8mm coat layer 200 LI walls: apply on 2 sides floors: apply on 1 side apply smokeseal Acrylic	'butter' cross cut edges of PA board + opening with PA coating apply smokeseal Acrylic	default: floors: 30 x 25 mm apply flush with construction	mount with Acrylic sealant walls: apply centrally in wall floors: apply flush with floor

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**
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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.** Always install services acc. manufacturer's instructions.

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