

product	<b>Firetect® P</b> - field of application
description	fire protective board, reinforced full-core plasterboard
intended use	fireboard to protect elements to be used for structural steelwork + fire compartments
certification	tested and certified by ETA-14/0292-P; fire resistance performances and assembly methods for uses in:

<b>constructive element</b>	
<b>loadbearing steel elements</b> type 4 acc. ETAG 018	- columns, profile sections 50 up to 355 [m <sup>-1</sup> ] - beams, profile sections 50 up to 355 [m <sup>-1</sup> ]
<b>non-loadbearing walls</b> type 8 acc. ETAG 018	- drylining assemblies: partitions shaft walls Eurocode 5 (out of scope ETA 14/0292-P)
<b>fire rated ceilings</b> acc. EN 1995-1-2+C2	- ceilings under structural timber floors / roofs Eurocode 5 (out of scope ETA 14/0292-P)
<b>adjacent joint wall / roof / facade</b> acc. NEN 6068+C1 fire propagation + flashover	- flame barriers under trapezoidal steel roofs Dutch NEN (out of scope ETA 14/0292-P)

<b>fire resistance</b> related to field of application	<b>board cladding for structural steel</b>	<b>configuration</b>
acc. EN 13501-2 / 13381-4	columns	beams
<b>R 30</b>	500 ° C	600 ° C
<b>R 60</b>	ctc 1200mm	ctc 600mm
<b>R 90</b>		
<b>R 120</b>		
<b>R 180</b>		
		board thickness depending on design temperature + factor [m <sup>-1</sup> ] + no. of exposed sides see tables <sup>1)</sup> at <a href="http://www.firetect.eu/download">www.firetect.eu/download</a>
acc. EN 13501-2 / 1364-1	<b>fire rated partitions</b> <sup>2)</sup>	
<b>EI 60</b>	1 layer Firetect P10 on either side	
<b>EI 90</b>	1 layer Firetect P15 on either side	
<b>EI 120</b>	1 layer Firetect P20 on either side	
<b>EI 180</b>	2 layer Firetect P20 on either side	
acc. EN 1995-1-2+C2	<b>fire rated shaft walls</b> <sup>3a)</sup>	
<b>30 minutes</b>	1 layer Firetect P20	
<b>60 minutes</b>	2 layer Firetect P15	
<b>90 minutes</b>	2 layer Firetect P20	
<b>120 minutes</b>	1 layer Firetect P25 + 1 layer Firetect P30	
acc. EN 1995-1-2+C2	<b>fire rated ceilings</b> <sup>4)</sup>	
<b>90 minutes</b>	1 layer Firetect A20 + 1 layer Firetect P12,5	
acc. NEN 6068+C1	<b>flame barriers for adjacent joint wall</b> <sup>3b)</sup> / <b>roof</b> <sup>5)</sup> / <b>facade</b>	
<b>30 minutes</b>	1 layer Firetect P12,5 495x1200mm on 1 side	
<b>60 minutes</b>	1 layer Firetect P12,5 495x1200mm on 2 sides	
<sup>1)</sup> Other design temperatures 350 °C up to 750 °C available upon request. <sup>2)</sup> Flexible walls with cavity insulation under rigid floors ≥ 150mm, density ≥ 650 kg/m <sup>3</sup> . <sup>3)</sup> Rigid constructive element ≥ 150mm, density ≥ 650 kg/m <sup>3</sup> : shafts under rigid floors <sup>3a)</sup> + adjacent joint onto rigid walls <sup>3b)</sup> . <sup>4)</sup> Flexible ceilings with plenum insulation under structural timber floors.		

directions for use

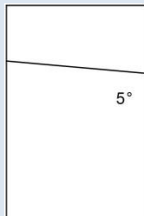
**Firetect<sup>®</sup> P** as board cladding for structural steel

**important** installation must follow DoP No. CPR-14/0292-P

- equipment - tacker, air / gas / powder operated gun  
 - sawing equipment  
     sawing machine: use exhaust equipment, type self-cleaning < 10 mg/m<sup>3</sup> particle absorption  
     use saw blades with hardened metal teeth  
     on site: cut board with hand or power saw

installation **BOARD CLADDING for structural steel**

- Firetect P boards, board length 1200mm; mount boards butt joint
- board thickness, depending on profile factor [m<sup>-1</sup>] + no. of exposed sides + design temperature <sup>1)</sup>
- columns: joints staggered
- ! - beams: butt joints in base boards may either coincide or stagger with butt joints in upright boards
- mounting on noggings or directly onto steel



**mounting on noggings:**

- use Firetect P noggings (5° wedge + base parts), min. 95x20mm (width x thickness)  
     for beams > IPE400, use proportionally larger noggings
- fit noggings between steel flanges at ctc 1200mm (columns) + ctc 600mm (beams)
- upright boards are shot stapled on noggings with joints across noggings
- base boards are attached between protruding parts of upright boards
- use steel staples, non-corrosive, ctc 120mm:

- |                                   |                                                    |
|-----------------------------------|----------------------------------------------------|
| board thickness ≤ 15mm:           | staple crown 8.6mm, staple steel thickness 1.25mm  |
| board thickness > 15mm:           | staple crown 10.6mm, staple steel thickness 1.60mm |
| 1 layer or 1 <sup>st</sup> layer: | staple leg: 30mm between boards, 35mm on noggings  |
| ≥ 2 layers:                       | staple leg: 38mm between boards, 50mm on noggings  |

**mounting directly onto steel:** (hollow sections)

- steel hardened nails, min. 3 nails per 1000mm, staggered  
     nail length depending on board thickness, 20 or 30mm (nail steel thickness min. 2.60mm )

**joint finish**

- 1 layer, butt joint: NO joint filler required; if board-to-board joint >3mm: use Firetect Acrylic sealant  
     note: base boards with beams do NOT require cover strips for joints !
- 2 layers, butt joint: NO joint filler required with joints / boards staggered at min. 300mm

<sup>1)</sup> See tables at [www.firetect.eu/download](http://www.firetect.eu/download); other design temperatures 350 °C up to 750 °C available upon request.

directions for use

**Firetect® P** for fire rated walls

**important** installation must follow DoP No. CPR-14/0292-P

- equipment - electric screwdriver  
- sawing equipment  
sawing machine: use exhaust equipment, type self-cleaning < 10 mg/m<sup>3</sup> particle absorption  
use saw blades with hardened metal teeth; on site: cut board with hand or power saw

installation **general**

- Firetect P boards, butt joint; wall height ≤ 4000mm; no limitations for wall width
- board thickness + no. of layers, depending on required fire resistance

see also page 1

metal stud acc. EN 14195 **PARTITIONS**, mounting onto supportive construction (metal stud):

- U70F MS profiles 70x40x40mm, thick 0,6mm, top<sup>1)</sup> + bottom
- C70 MS profiles 68,8x49x51mm, thick 0,6mm, vertical

- install boards with long axis vertical; use phosphated drylining screws, fine thread; ctc 300mm  
vertical joints between boards are made coincident with MS  
horizontal joints (backed with continuous cavity insulation), staggered on either side

insulation acc. EN 13162 - apply cavity insulation, butt joint; mineral wool; density depending on required fire resistance

cavity insulation :

acc. EN 13501-2 / 1364-1	<u>screw specs</u> (mm):	<u>joint specs</u>	λ = 0.037 W/mK, melting point ≥ 1000 °C
<b>EI 60</b> : board thickness 10mm, 1 layer	Ø 3,5 x 25	butt joint	mineral wool ≥70mm, density ≥110 kg/m <sup>3</sup>
<b>EI 90</b> : board thickness 15mm, 1 layer	Ø 3,5 x 35	butt joint	mineral wool ≥70mm, density ≥45 kg/m <sup>3</sup>
<b>EI 120</b> : board thickness 20mm, 1 layer	Ø 3,5 x 35	butt joint	mineral wool ≥70mm, density ≥45 kg/m <sup>3</sup>
<b>EI 180</b> : board thickness 20mm, 2 layer	Ø 3,5 x 35 (1 <sup>st</sup> layer) + Ø 3,5 x 55 (2 <sup>nd</sup> layer)	staggered at min. 300mm	mineral wool ≥70mm, density ≥45 kg/m <sup>3</sup>

**Required expansion allowance at top:**

partitions with height:	3000 mm	4000 mm
EI 30	11mm	15mm
EI 60	16mm	22mm
EI 90	17mm	22mm
EI 120	17mm	22mm
EI 180	17mm	22mm

metal stud acc. EN 14195 **SHAFT WALLS**, mounting onto supportive construction (metal stud):

- U50F MS profiles 50x40x40, thick 0,6mm, top<sup>1)</sup> + bottom
- C50 MS profiles 48,8x49x51mm, thick 0,6mm, vertical

- install boards with long axis vertical; use phosphated drylining screws, fine thread; ctc 300mm  
vertical joints between boards are made coincident with MS  
horizontal joints are staggered on either side

insulation acc. EN 13162 - NONE required !

acc. EN 1995-1-2+C2	<u>screw specs</u> (mm):	<u>joint specs</u>
<b>30</b> minutes: board thickness 20mm, 1 layer	Ø 3,5 x 35	butt joint
<b>60</b> minutes: board thickness 15mm, 2 layer	Ø 3,5 x 25 (1 <sup>st</sup> layer) + Ø 3,5 x 45 (2 <sup>nd</sup> layer)	staggered at min. 300mm
<b>90</b> minutes: board thickness 20mm, 2 layer	Ø 3,5 x 35 (1 <sup>st</sup> layer) + Ø 3,5 x 55 (2 <sup>nd</sup> layer)	staggered at min. 300mm
<b>120</b> minutes: board thickness 55mm, 2 layer	Ø 3,5 x 35 (1 <sup>st</sup> layer) + Ø 3,5 x 65 (2 <sup>nd</sup> layer)	staggered at min. 300mm

**joint finish**

- joints with adjacent constructive element(s): apply Acrylic for horizontal partition edges and 1 vertical edge
- 1 layer: butt joint; NO joint filler required, if board-to-board joint >3mm: use Firetect Acrylic sealant
- 2 layers: butt joint, NO joint filler required with joints staggered at min. 300mm

<sup>1)</sup> Fixed onto rigid constructive element ≥ 150mm, density ≥ 650 kg/m<sup>3</sup>.

**directions for use**

**Firetect® P** for fire rated ceilings + flame barriers

**important** installation must follow DoP No. CPR-14/0292-P

- equipment**
- electric screwdriver
  - sawing equipment
    - use saw blades with hardened metal teeth; on site: cut board with hand or power saw
    - use exhaust equipment, type self-cleaning < 10 mg/m<sup>3</sup> particle absorption

**installation** **FIRE RATED CEILING** <sup>1)</sup>

- Firetect P boards, butt joint
- no limitations for ceiling height or width

**mounting onto supportive construction (metal stud):**

- C60/27 profiles acc. EN 14195, ctc 400mm

acc. EN 1995-1-2+C2

- 90 minutes**
- 1 layer Firetect A20 + 1 layer Firetect P12,5
  - use phosphated drylining screws fine thread
    - screw length = 35 (1st layer) + 55mm (2nd layer), ctc 300mm
  - apply plenum insulation acc. EN 13162, mineral wool ≥ 50mm

**joint finish**

- NONE if butt joint + joints staggered at min. 300mm

**installation** **FLAME BARRIERS** for adjacent joint wall <sup>2)</sup> / roof <sup>3)</sup> / facade

- Firetect P12,5 strips 495x1200mm, butt joint; directly onto steel roof
  - no limitations for ceiling height or width
- 1 or 2 sides, depending on required fire resistance:

see also page 1

acc. NEN 6068+C1

- 30 minutes** 1 layer Firetect P12,5 on 1 side  
**60 minutes** 1 layer Firetect P12,5 on 2 sides

**mounting directly onto constructive element:**

*installation method 1*

**under steel roofs with mineral wool roof insulation**

- use phosphated drylining screws, fine thread;
  - screw length= board thickness + 10mm, alternately 3 screws per corrugation, staggered
- apply mineral wool ≥ 27 kg/m<sup>3</sup> in cannelures of roofing sheets (top + bottom) at wall position
- apply a 1000mm strip of concrete tiles at wall position on top of roofing felt

*installation method 2*

**under steel roofs with EPS / PIR / PUR roof insulation**

- use phosphated drylining screws, fine thread;
  - screw length= board thickness + 10mm, alternately 3 screws per corrugation, staggered
- apply mineral wool ≥ 27 kg/m<sup>3</sup> in cannelures of roofing sheets (top + bottom) at wall position
- interrupt roof insulation at wall position
  - + replace by mineral wool roof insulation ≥ 115 kg/m<sup>3</sup> min. 350mm wide
- apply a 1000mm strip of concrete tiles at wall position on top of roofing felt

**joint finish**

- NONE if butt joint; if board-to-board joint >3mm: use Firetect Acrylic sealant

<sup>1)</sup> Ceilings under structural timber or trapezoidal corrugated steel roofs <sup>3)</sup>.

<sup>2)</sup> Rigid walls ≥ 150mm, density ≥ 650 kg/m<sup>3</sup>.

<sup>3)</sup> Trapezoidal corrugated steel roofs with mineral wool roof insulation.

Note: all constructive elements in the fire propagation / flash over 'zone' (thus also wall, roof, steelwork) must have the same fire resistance.

specifications		Firetect® P - general product specifications
material		reinforced full-core plaster fireboard with organic components
colour		white, smooth upper surface, stucco ready
<b>fire resistance</b>		R 30 up to R 180, EN; depending on application and configuration
		EI 30 up to EI 180, EN; depending on application and configuration
		30 up to 60 minutes, NEN; depending on application and configuration
	tested acc.	EN 13381-4 + EN 1364-1 + EN 1995-1-2+C2 + NEN 6068+C1
	classified acc.	EN 13501-1: Class A1; EN 13501-2
<b>environmental performance</b>		
	release of dangerous substances	none: non-formaldehyde, non-asbestos
	use category	Z <sub>2</sub> internal use
	mechanical resistance / stability	flexural strength: 4,08 Mpa
	resistance mechanical fastening	pull-through: 629 N; pull-out: 0,93 kN; shear load: 928 N
	application conditions	between +5 °C and +30 °C, max. 70% RH
	packaging	on pallets max. 1200x2400mm, shrink foil wrapped + corners protected; no. of boards: see below
	storage	store dry, max. 70% RH, avoid condensation and UV; protect from frost; see below
	shelf life	infinite, if stored acc. instructions
	activation temperature	not applicable
	flash point	not applicable
	thermal conductivity	0,24 W/mk
	density	see below; nominal ± 20 kgs, subject to variable (humid) environmental conditions

available sizes		
standard size	1200 mm width; length: see below	other sizes upon request; tolerance ± 0,5mm/m <sup>1</sup>
standard thickness	12,5 mm up to 25 mm; see below	other sizes upon request; tolerance ± 1.0mm

limitations
- use Firetect C in case of high mechanical impact risks - use Firetect C in case of variable (humid) environmental conditons

transport & storage		- with tautliner, load + unload sideways; do not stack more than 2 pallets - always keep dry; standard packaging is inadequate for protection against rain or leaking water - store on level ground; do not stack more than 2 pallets - HS code: 68099000				
	W x L x Th	boards / pallet	m <sup>2</sup> / pallet	kgs / pallet	density kg/m <sup>2</sup>	density kg/m <sup>3</sup>
Firetect P	<b>12,5</b> 1200 x 2500 x 12,5mm	36	103,7	± 1250	12,0	± 975
Firetect P	<b>15</b> 1200 x 2500 x 15mm	30	86,4	± 1300	15,0	± 975
Firetect P	<b>20</b> 1200 x <b>2000</b> x 20mm	24	57,6	± 1160	20,0	± 975
Firetect P	<b>25</b> 1200 x <b>1500</b> x 25mm	20	36,0	± 900	25,0	± 975

health & safety	- no specific restrictions - work according to health & safety Directive and use appropriate PPE (dust mask) - this product is classified as not dangerous under Regulation 1272/2008 and is in compliance with CLP regulations

product information
- tables board thickness and other documentation can be downloaded at <a href="http://www.firetect.eu/download">www.firetect.eu/download</a>
- product certification by DoP; more info on certification of CE building products through ETA at <a href="http://www.firetect.eu/certification">www.firetect.eu/certification</a> ; consult <a href="http://www.firetect.eu">www.firetect.eu</a> for the latest version of this TDS, as product development and testing are ongoing processes at KLF
- contact KLF for other R / EI requirements and (non)standard or complex site requirements; mail <a href="mailto:info@klf.nl">info@klf.nl</a>
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