product	**Firetect® C** - field of application
description	fire protective board, calcium silicate board
intended use	fireboard to protect elements to be used for structural steelwork + fire compartments
certification	tested and certified by ETA-14/0293-C; fire resistance performances and assembly methods for uses in:

constructive element

loadbearing steel elements type 4 acc. ETAG 018	- columns, profile sections 50 up to 355 [m^{-1}] - beams, profile sections 50 up to 355 [m^{-1}]
non-loadbearing walls type 8 acc. ETAG 018	- drylining assemblies: partitions

fire resistance

related to field of application

	board cladding for structural steel		**configuration**
acc. EN 13501-2 / 13381-4			
R 30	columns	beams	board thickness depending on
R 60	500 ° C	600 ° C	design temperature +
R 90	ctc 1200mm	ctc 600mm	factor [m^{-1}] + no. of exposed sides
R 120			see tables [1]
R 180			at www.firetect.eu/download

acc. EN 13501-2 / 1364-1	**fire rated partitions** [2]
EI 30	1 layer Firetect C10 on either side
EI 60	1 layer Firetect C18 on either side
EI 90	2 layer Firetect C15 on either side
EI 120	2 layer Firetect C18 on either side
EI 240	3 layer Firetect C15 on either side

[1] Other design temperatures 350 °C up to 750 °C available upon request.

[2] Flexible walls with cavity insulation under rigid floors ≥ 150mm, density ≥ 650 kg/m^3.

directions for use

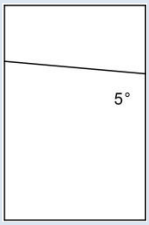
Firetect® C as board cladding for structural steel

important installation must follow DoP No. CPR-14/0293-C

equipment
- tacker, air / gas / powder operated gun
- sawing equipment
  sawing machine: use exhaust equipment, type self-cleaning < 10 mg/m^3 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 C boards, board length 1200mm; mount boards butt joint
- board thickness, depending on profile factor [m^{-1}] + no. of exposed sides + design temperature [1)]
- 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 C 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 1st 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

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

directions for use

Firetect® C for fire rated walls

important installation must follow DoP No. CPR-14/0293-C

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

installation **general**
- Firetect C 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 [1] + 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 ≥70mm, density ≥45 kg/m^3
λ = 0.037 W/mK, melting point ≥ 1000 °C

acc. EN 13501-2 / 1364-1

	screw specs (mm):	*joint specs*
EI 30: board thickness 10mm, 1 layer	Ø 3,5 x 25	butt joint
EI 60: board thickness 18mm, 1 layer	Ø 3,5 x 25	butt joint
EI 90: board thickness 15mm, 2 layer	Ø 3,5 x 35 (1st layer) + Ø 3,5 x 55 (2nd layer)	staggered at min. 300mm
EI 120: board thickness 18mm, 2 layer	Ø 3,5 x 35 (1st layer) + Ø 3,5 x 55 (2nd layer)	staggered at min. 300mm
EI 240: board thickness 15mm, 3 layer	Ø 3,5 x 35 (1st layer) + Ø 3,5 x 55 (2nd layer) + Ø 3,5 x 70 (3rd layer)	staggered at min. 300mm

Required expansion allowance at top:

partitions with height:	3000 mm	4000 mm
EI 30	13mm	18mm
EI 60	16mm	22mm
EI 90	16mm	22mm
EI 120	18mm	24mm

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

[1] Fixed onto rigid constructive element ≥ 150mm, density ≥ 650 kg/m^3.

specifications

Firetect® C - general product specifications

material	calcium silicate fireboard with organic components
colour	off-white, smooth upper surface
fire resistance	R 30 up to R 180, EN; depending on application and configuration
	EI 30 up to EI 240, EN; depending on application and configuration
tested acc.	EN 13381-4 + EN 1364-1
classified acc.	EN 13501-1: Class A1; EN 13501-2
environmental performance	
release of dangerous substances	none: non-formaldehyde, non-asbestos
use category	Z_2, internal use
mechanical resistance / stability	flexural strength: 7,46 Mpa
resistance mechanical fastening	pull-through: 1025 N; pull-out: 0,93 kN; shear load: 606 N
application conditions	between +5 ºC and +30 ºC, max. 70% RH
packaging	on pallets 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	0,12 W/mk
density	see below; nominal ± 20 kgs, subject to variable (humid) environmental conditions

available sizes

standard size	1200x2400mm	other sizes upon request; tolerance ± 0,5mm/m[1]
standard thickness	10 + 12 + 15 + 18 + 20mm	other sizes upon request; tolerance ± 1.0mm

limitations

- use a suitable coating for (semi) exposed external application to avoid moisture absorption

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: 68069000

W x L x Th	boards / pallet	m^2 / pallet	kgs / pallet	density kg/m^2	density kg/m^3
Firetect **C10** 1200 x 2400 x 10mm	40	115,2	± 1045	9,0	± 875
Firetect **C12** 1200 x 2400 x 12mm	35	100,8	± 1100	10,8	± 875
Firetect **C15** 1200 x 2400 x 15mm	30	86,4	± 1200	13,5	± 875
Firetect **C18** 1200 x 2400 x 18mm	25	72,0	± 1200	16,2	± 875
Firetect **C20** 1200 x 2400 x 20mm	20	57,6	± 1045	18,0	± 875

health & safety

- no specific restrictions
- work according to health & safety Directive and use appropriate PPE (dust mask)
- this product is classfied 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 www.firetect.eu/download
- product certification by DoP; more info on certification of CE building products through ETA at www.firetect.eu/certification; consult www.firetect.eu 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 info@klf.nl

European Organisation for Technical Assessment