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# European Technical Assessment

# ETA-14/0292 Of 19/12/2018

## General part

**Technical Assessment Body issuing the European Technical Assessment:**  
SKG-IKOB Certificatie BV

**Trade name of the construction product**

Firetect® P

**Product family to which the  
construction product belongs**

**Fire protective products:**  
Fire protective board

**Manufacturer**

**KLF Productions & Brandpreventie BV**  
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**Manufacturing plants**

A004

**This European Technical Assessment  
contains**

30 pages including 1 Annex which form an integral part of  
this assessment.

**This European Technical Assessment is  
issued in accordance with regulation  
(EU) No 305/2011, on the basis of  
This version replaces**

EAD 350142-00-1106, edition September 2017

ETA 14-0292, version 1, issued on 23/09/2014

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## Specific parts

### 1 Technical description of the product

Firetect® P is a gypsum board with glass fiber addition used as fire resistant board to enhance fire performance of load-bearing steel elements and the use as fire resistant board in fire separating assemblies with no load-bearing requirements.

Load-bearing steel elements with Firetect® P, assembly components:

Product	Description	
Fireprotective board	Firetect® P board Gypsum board with glass fibre addition	
	Dimensions	Thickness
	1200 mm x 2400 mm	10, 12.5 and 15 mm
	1200 mm x 2000 mm	20 mm
	1200 mm x 1500 mm	25 mm
	1200 mm x 1200 mm	30 mm
Mechanical fastener	Non-corrosive Staples, brand Union, type H, c.t.c. distance 100 -120 mm, see annex 1 for detailed specification, (not part of the kit)	

Fire separating assemblies with no load-bearing requirements with Firetect® P, assembly components:

Product	Description			
Fireprotective board	Firetect® P board Gypsum board with glass fibre addition			
	Dimensions		Thickness	
	1200 mm x 2400 mm		10, 12.5 and 15 mm	
	1200 mm x 2000 mm		20 mm	
	1200 mm x 1500 mm		25 mm	
	1200 mm x 1200 mm		30 mm	
Mechanical fastener	Phosphate drylining screws, see annex 1 for detailed specification (not part of the kit). Anchors (steel rawl bolts) into top and bottom profiles, c.t.c. 300 mm (not part of the kit).			
Adhesives	Not applicable			
Jointing material	Joints between the Firetect® P boards up to 3 mm need no finishing. Joints greater than 3 mm are filled with Firetect® Acrylic sealant (not part of the kit).			
Insulation products	Mineral wool, according to EN 13162, see annex 1 for detailed specification (not part of the kit).			
Profiles, framework and studs	Metalstud profile, according to EN14195 (not part of the kit).			
	Position	Code	Size [mm]	Thickness [mm]
	Bottom and top	U 70 F	70 x 40 x 40	0.6
	Vertical studs	C 70	68.8 x 49 x 51	0.6

The applicant has submitted a written declaration that the product and/or constituents of the product contains no substances which have been classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No. 1272/2008 and listed in the 'indicative list on dangerous substances' of the EGDS – taking into account the installation conditions of the construction product and the release scenarios resulting from there.

In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

According to the manufacturer's declaration the fire protective boards comply with all relevant European and national provisions - known at the date of issuing – applicable for the uses for which they are brought to the market. Firetect® P has no formaldehyde containing components and is 100% asbestos-free.

The use category of Firetect® P in relation to BWR 3 (Hygiene, health and environment, release of dangerous substances) is IA1.

## 2 Specification of the intended uses in accordance with the applicable European Assessment Document (hereinafter EAD)

### 2.1 Intended use

The intended use of Firetect® P is to protect elements to be used in assemblies as specified in table 1.

Protection of	EAD 350142-00-1106 reference
Load-bearing steel elements	Type 4
Fire separating assemblies with no load-bearing requirements	Type 8

Table 1: intended use

Detailed information and data of the assemblies is given in Annex 1.

Environmental conditions are type Z<sub>2</sub>: intended for use in internal conditions only.

### 2.2 Working life

The assumed working life of the of Firetect® P is for the intended use 25 years, provided that the assembled product is subject to appropriate installation, use and maintenance. For the intended use type Z<sub>2</sub> no more than accidental wetting and no frost inside the building is to be expected. The indication of 25 years cannot be interpreted as a guarantee given by KLF Productions & Brandpreventie BV, but should only be regarded as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

### 3. Performance of the product and references to the methods used for its assessment

The assessment of fitness for use has been made in accordance with EAD 350142-00-1106.

Kit		
No	Essential Characteristic	Product performances
<b>BWR 2 Safety in case of fire</b>		
1	Reaction to fire	No performance determined
2	Resistance to fire	See annex 1
3	Durability and serviceability	Z <sub>2</sub>
<b>BWR 3 Hygiene, health and environment</b>		
4	Content, emission and/or release of dangerous substances	Declaration of manufacturer
<b>BWR 4 Safety and accessibility in use</b>		
5	Pull through resistance of mechanical fasteners	629 N *
6	Shear load resistance of mechanical fastening systems	928 N *
7	Resistance to soft body impact	Pass
8	Resistance to hard body impact	Pass
9	Resistance to eccentric load	No performance determined
10	Adhesion	Not applicable
<b>BWR 5 Protection against noise</b>		
11	Airborne sound insulation	No performance determined
12	Sound absorption	No performance determined
13	Impact sound insulation	No performance determined
<b>BWR 6 Energy economy and heat retention</b>		
14	Thermal properties	No performance determined
15	Water vapour transmission coefficient	No performance determined

\* Tests have been performed on 10 mm Firetect® P board with phosphate drylining screws Ø 3.5 mm.

Firetect® P		
No	Essential Characteristic	Product performances
<b>BWR 2 Safety in case of fire</b>		
16	Reaction to fire	Class A1
17	Resistance to fire	See annex 1
18	Durability and serviceability	Z <sub>2</sub> *
<b>BWR 3 Hygiene, health and environment</b>		
19	Water permeability	Not relevant
<b>BWR 4 Safety and accessibility in use</b>		
20	Flexural strength	4,08 MPa **
21	Dimensional stability	No performance determined
<b>BWR 6 Energy economy and heat retention</b>		
22	Thermal resistance	No performance determined
23	Water vapour transmission coefficient	No performance determined

\* Tests have been performed on 10 mm Firetect® P board. Compressive strength: 12.6 N/mm<sup>2</sup>, Tensile strength perpendicular to the plane of the board: 0.466 N/mm<sup>2</sup>.

\*\* The boards have sufficient strength to support their own mass. The boards are not intended to support additional loads.

Mechanical fasteners		
No	Essential Characteristic	Product performances
<b>BWR 2 Safety in case of fire</b>		
24	Reaction to fire	Class A1
25	Durability and serviceability	Z <sub>2</sub>
<b>BWR 4 Safety and accessibility in use</b>		
26	Pull-out resistance of mechanical fasteners	0.93 kN *

\* Tests have been performed on phosphate drylining screws Ø 3.5 mm on metal stud profile U70F, steel sheet thickness 0,6 mm.

Adhesives		
No	Essential Characteristic	Product performances
<b>BWR 2 Safety in case of fire</b>		
27	Reaction to fire	Not applicable
28	Durability and serviceability	Not applicable
<b>BWR 4 Safety and accessibility in use</b>		
29	Mechanical resistance and stability	Not applicable

Jointing material		
No	Essential Characteristic	Product performances
<b>BWR 2 Safety in case of fire</b>		
30	Reaction to fire	See ETA 15/0630
31	Durability and serviceability	Z <sub>2</sub> , See ETA 15/0630

Insulation products		
No	Essential Characteristic	Product performances
<b>BWR 2 Safety in case of fire</b>		
32	Reaction to fire	Class A1
33	Resistance to fire	See annex 1
<b>BWR 6 Energy economy and heat retention</b>		
34	Thermal resistance	See annex 1
35	Water vapour transmission coefficient	No performance determined

Profiles, framework and studs		
No	Essential Characteristic	Product performances
<b>BWR 2 Safety in case of fire</b>		
36	Reaction to fire	Class A1
37	Durability and serviceability	Z <sub>2</sub>
<b>BWR 4 Safety and accessibility in use</b>		
38	Mechanical resistance and stability	No performance determined
<b>BWR 6 Energy economy and heat retention</b>		
39	Thermal resistance	No performance determined

#### 4 **Assessment and verification of consistency of performance (hereinafter AVCP) system applied, with reference to its legal base**

According to the decision 1999/454/EC – Commission Decision of date 22nd June 1999 on the procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards fire stopping, fire sealing and fire protective products, published in the Official Journal of the European Union (OJEU) L178/52 of 14/07/1999, see <http://eur-lex.europa.eu/JOIndex.do> of the European Commission<sup>1</sup>, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table(s) applies (apply).

Product(s)	Intended use(s)	Level(s) or class(es)	System(s)
Fire stopping and fire sealing products Fire protective products (including coatings)	For fire compartmentation and/or fire protection or fire performance	Any	1

## 5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

### Tasks of the manufacturer

#### *Factory production control*

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this European Technical Assessment. The manufacturer may only use initial / raw / constituent materials stated in the technical documentation of this European Technical Assessment.

The factory production control shall be in accordance with the Control Plan of 13/11/2018 relating to the European technical assessment ETA 14/0292 issued on 19/12/2018 which is part of the technical documentation of this European technical approval. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at SKG-IKOB. The results of factory production control shall be recorded and evaluated in accordance with the provisions of the Control Plan.

### Other tasks of the manufacturer

#### *Additional information*

The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

#### (a) Technical data sheet:

- Field of application:
- Building elements for which the penetration seal is suitable, type and properties of the building elements like minimum thickness, density, and - in case of lightweight constructions – the construction requirements.
- Limits in size, minimum thickness etc. of the penetration seal
- Construction of the penetration seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.
- Services which the penetration seal is suitable, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. cable trays)

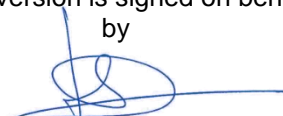
#### (b) Installation instruction:

- Steps to be followed
- Procedure in case of retrofitting
- Stipulations on maintenance, repair and replacement

Issued in Geldermalsen, the Netherlands on 19.12.2018

The original English version is signed on behalf of SKG-IKOB

by



SKG-IKOB, certification manager  
ir. H.A.J. van Dartel



## ANNEX 1: Fire resistance performances and assembly methods for uses of boards covered by this ETA

### Annex 1.1 Overview of fire resistance performances for Firetect® P drywall assemblies

#### 1.1.1 Firetect® P10, EI 60

Assembly assessed within the framework of this ETA	Classification according to EN 13501-2	Test Standard	Intended use type according to EAD 350142-00-1106
Non-loadbearing walls protected by Firetect® P board	EI 60	EN 1364-1:1999	Type 8

Assembly with 2 layers of 10 mm Firetect® P:

- Dimensions wall partition: maximum height 4000 mm (16 mm play at top), no limitations for width
- 1 layer of Firetect® P of 10 mm
- Metalstud profile, according to EN14195

Position	Code	Size [mm]	Material thickness [mm]
Bottom and top	U 70 F	70 x 40 x 40	0.6
Vertical studs	C 70	68.8 x 49 x 51	0.6

- Mineral wool, according to EN 13162, density ~ 110 kg/m<sup>3</sup>,  $\lambda = 0.037$  W/mK, 70 mm thick and melting point > 1000°C.
- 1 layer of Firetect® P of 10 mm

The following fastening materials were used:

- Phosphate drylining screws  $\varnothing$  3.5 x 25 mm, c.t.c. distance 300 mm screwed into the C70 profiles.
- Anchors (steel rawl bolts) into top and bottom profiles, c.t.c. 300 mm.

Joints:

- Joints between the Firetect® P boards up to 3 mm need no finishing.
- Joints greater than 3 mm are filled with Firetect® Acrylic sealant.

#### 1.1.2 Firetect® P15, EI 90

Assembly assessed within the framework of this ETA	Classification according to EN 13501-2	Test Standard	Intended use type according to EAD 350142-00-1106
Non-loadbearing walls protected by Firetect® P board	EI 90	EN 1364-1:1999	Type 8

Assembly with 2 layers of 15 mm Firetect® P:

- Dimensions wall partition: maximum height 4000 mm (16 mm play at top), no limitations for width
- 1 layer of Firetect® P of 15 mm
- Metalstud profile, according to EN14195

Position	Code	Size [mm]	Material thickness [mm]
Bottom and top	U 70 F	70 x 40 x 40	0.6
Vertical studs	C 70	68.8 x 49 x 51	0.6

- Mineral wool, according to EN 13162, density ~ 45 kg/m<sup>3</sup>,  $\lambda = 0.037$  W/mK, 70 mm thick and melting point > 1000°C.
- 1 layer of Firetect® P of 15 mm.

The following fastening materials were used:

- Phosphate drylining screws  $\varnothing$  3.5 x 35 mm, c.t.c. distance 300 mm screwed into the C70 profiles.
- Anchors (steel rawl bolts) into top and bottom profiles, c.t.c. 300 mm.

Joints:

- Joints between the Firetect® P boards up to 3 mm need no finishing.
- Joints greater than 3 mm are filled with Firetect® Acrylic sealant.

### 1.1.3 Firetect® P20, EI 120

Assembly assessed within the framework of this ETA	Classification according to EN 13501-2	Test Standard	Intended use type according to EAD 350142-00-1106
Non-loadbearing walls protected by Firetect® P board	EI 120	EN 1364-1:1999	Type 8

Assembly with 2 layers of 20 mm (or 4 layers of 10 mm) Firetect® P:

- Dimensions wall partition: maximum height 4000 mm (16 mm play at top), no limitations for width
- 1 layer of 20 mm (or 2 layers of 10 mm) Firetect® P
- Metalstud profile, according to EN14195

Position	Code	Size [mm]	Material thickness [mm]
Bottom and top	U 70 F	70 x 40 x 40	0.6
Vertical studs	C 70	68.8 x 49 x 51	0.6

- Mineral wool, according to EN 13162, density ~ 45 kg/m<sup>3</sup>,  $\lambda = 0.037$  W/mK, 70 mm thick and melting point > 1000°C.
- 1 layers of 20 mm (or 2 layers of 10 mm) Firetect® P.

The following fastening materials were used:

- Phosphate drylining screws  $\varnothing$  3.5 x 35 mm, c.t.c. distance 300 mm screwed into the C70 profiles.
- Phosphate drylining screws  $\varnothing$  3.5 x 55 mm (for the second layer of panelling), c.t.c. distance 300 mm into the C70 profiles.
- Anchors (steel rawl bolts) into top and bottom profiles, c.t.c. 300 mm.

Joints:

Joints between the Firetect® P boards up to 3 mm need no finishing.

Joints greater than 3 mm are filled with Firetect® Acrylic sealant.

### 1.1.4 Firetect® P20, EI 180

Assembly assessed within the framework of this ETA	Classification according to EN 13501-2	Test Standard	Intended use type according to EAD 350142-00-1106
Non-loadbearing walls protected by Firetect® P board	EI 180	EN 1364-1:1999	Type 8

Assembly with 4 layers of 20 mm Firetect® P:

- Dimensions wall partition: maximum height 4000 mm (16 mm play at top), no limitations for width
- 2 layers of Firetect® P of 20 mm.
- Metalstud profile, according to EN14195

Position	Code	Size [mm]	Material thickness [mm]
Bottom and top	U 70 F	70 x 40 x 40	0.6
Vertical studs	C 70	68.8 x 49 x 51	0.6

- Mineral wool, according to EN 13162, density ~ 45 kg/m<sup>3</sup>,  $\lambda = 0.037$  W/mK, 70 mm thick and melting point > 1000°C.
- 2 layers of Firetect® P of 20 mm.

The following fastening materials were used:

- Phosphate drylining screws  $\varnothing$  3.5 x 35 mm (for the first layer of panelling), c.t.c. distance 300 mm screwed into the C70 profiles.
- Phosphate drylining screws  $\varnothing$  3.5 x 55 mm (for the second layer of panelling), c.t.c. distance 300 mm into the C70 profiles.
- Anchors (steel rawl bolts) into top and bottom profiles, c.t.c. 300 mm.

Joints:

Joints between the Firetect® P boards up to 3 mm need no finishing.

Joints greater than 3 mm are filled with Firetect® Acrylic sealant.

## 1.2 Overview of fire resistance performances for Steel Columns and beams with Firetect® P assemblies

Assembly assessed within the framework of this ETA	Classification according to EN 13501-2	Test Standard	Intended use type according to EAD 350142-00-1106
Load-bearing steel elements protected by Firetect® P board	R 30 – R 60 R 90 – R 120 R 180	EN 13381-4:2013	Type 4

The following fastening materials were used:

Non-corrosive Staples, brand Union, type H, c.t.c. distance 100 -120 mm.

- For single board ≤ 15 mm layer: staple with crown 8.6 mm, thread 1.05 x 1.27 mm, staple length: minimum board layer thickness + 20 mm.
- For single and multiple board > 15 mm layer: staple with crown 10.8 mm, thread 1.05 x 1.27 mm, staple length: minimum board layer thickness + 20 mm.

Joints:

Joints between the Firetect® P boards up to 3 mm need no finishing.

Joints greater than 3 mm are filled with Firetect® Acrylic sealant.

### 1.2.1 I-section Columns: Intercepts

Steel Temp. [°C]	Fire Resistance [min]	Board Thickness					
		12mm		30mm		50mm	
		Intercept [m]	Am/V [m-1]	Intercept [m]	Am/V [m-1]	Intercept [m]	Am/V [m-1]
350 °C	30 min	0.005219	192	0.001246	-	0.000556	-
	60 min	0.016658	60	0.002628	380	0.001173	-
	90 min	0.028097	36	0.007871	127	0.00179	-
	120 min	0.039536	25	0.016523	61	0.002407	415
	150 min	0.050975	20	0.025174	40	0.003024	331
	180 min	0.062414	16	0.033825	30	0.009203	109
400 °C	30 min	0.004340	230	0.001175	-	0.000525	-
	60 min	0.014218	70	0.002479	403	0.001107	-
	90 min	0.024097	41	0.006234	160	0.001689	-
	120 min	0.033975	29	0.013851	72	0.002271	-
	150 min	0.043854	23	0.021467	47	0.002853	350
	180 min	0.053732	19	0.029084	34	0.007607	131
450 °C	30 min	0.003069	326	0.001116	-	0.000502	-
	60 min	0.011193	89	0.002353	-	0.001058	-
	90 min	0.019674	51	0.004999	200	0.001615	-
	120 min	0.028154	36	0.011773	85	0.002172	-
	150 min	0.036635	27	0.018547	54	0.002728	367
	180 min	0.045116	22	0.025321	39	0.003285	304
500 °C	30 min	0.002712	369	0.001045	-	0.000522	-
	60 min	0.009196	109	0.002205	-	0.001101	-
	90 min	0.016539	60	0.003759	266	0.00168	-
	120 min	0.023883	42	0.010071	99	0.002259	-
	150 min	0.031226	32	0.016383	61	0.002838	352
	180 min	0.038569	26	0.022695	44	0.006926	144
550 °C	30 min	0.002626	381	0.000952	-	0.000443	-
	60 min	0.00838	119	0.002057	-	0.000957	-
	90 min	0.014913	67	0.003163	316	0.001472	-
	120 min	0.021446	47	0.008829	113	0.001986	-
	150 min	0.027979	36	0.015017	67	0.002500	-
	180 min	0.034512	29	0.021205	47	0.003015	332

Steel Temp. [°C]	Fire Resistance [min]	Board Thickness					
		12mm		30mm		50mm	
		Intercept [m]	Am/V [m-1]	Intercept [m]	Am/V [m-1]	Intercept [m]	Am/V [m-1]
600 °C	30 min	0.002210	-	0.000873	-	0.000400	-
	60 min	0.006746	148	0.001958	-	0.000898	-
	90 min	0.012474	80	0.003043	329	0.001396	-
	120 min	0.018203	55	0.008021	125	0.001894	-
	150 min	0.023931	42	0.014066	71	0.002392	418
	180 min	0.029659	34	0.020112	50	0.002890	346
650 °C	30 min	0.001839	-	0.000827	-	0.000351	-
	60 min	0.005480	182	0.001969	-	0.000834	-
	90 min	0.010642	94	0.003110	322	0.001318	-
	120 min	0.015804	63	0.008234	121	0.001801	-
	150 min	0.020965	48	0.014039	71	0.002285	438
	180 min	0.026127	38	0.019844	50	0.002768	361
700 °C	30 min	0.001488	-	0.000764	-	0.000290	-
	60 min	0.004510	222	0.002008	-	0.000762	-
	90 min	0.009349	107	0.003253	307	0.001234	-
	120 min	0.014189	70	0.008782	114	0.001706	-
	150 min	0.019029	53	0.014396	69	0.002178	459
	180 min	0.023869	42	0.020009	50	0.002651	377
750 °C	30 min	0.001067	-	0.000606	-	0.000211	-
	60 min	0.003482	287	0.001923	-	0.000671	-
	90 min	0.008646	116	0.003240	309	0.001131	-
	120 min	0.013810	72	0.009012	111	0.001591	-
	150 min	0.018974	53	0.014912	67	0.002050	488
	180 min	0.024138	41	0.020812	48	0.009980	100

1.2.2 Overview of fire resistance performances for I-section Beams and Columns with Firetect® P assemblies:

Design Steel Temperature 350°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	20	25	32.5	37.5
55	12.5	12.5	20	27.5	32.5	37.5
60	12.5	12.5	20	30	32.5	40
65	12.5	15	20	32.5	32.5	40
70	12.5	15	20	32.5	32.5	42.5
75	12.5	15	20	32.5	32.5	42.5
80	12.5	15	25	32.5	35	45
85	12.5	15	25	32.5	35	45
90	12.5	15	25	32.5	35	47.5
95	12.5	15	25	32.5	35	47.5
100	12.5	15	25	32.5	35	50
105	12.5	15	27.5	32.5	35	50
110	12.5	20	27.5	35	35	-
115	12.5	20	30	35	37.5	-
120	12.5	20	30	35	37.5	-
125	12.5	20	30	35	37.5	-
130	12.5	20	32.5	35	37.5	-
135	12.5	20	32.5	35	37.5	-
140	12.5	20	32.5	35	37.5	-
145	12.5	20	32.5	35	37.5	-
150	12.5	20	32.5	37.5	40	-
155	12.5	20	32.5	37.5	40	-
160	12.5	20	32.5	37.5	40	-
165	12.5	20	32.5	37.5	40	-
170	12.5	20	32.5	37.5	40	-
175	12.5	20	32.5	37.5	40	-
180	12.5	20	32.5	37.5	40	-
185	12.5	20	35	37.5	40	-
190	12.5	20	35	37.5	42.5	-
195	15	20	35	40	42.5	-
200	15	25	35	40	42.5	-
205	15	25	35	40	42.5	-
210	15	25	35	40	42.5	-
215	15	25	35	40	42.5	-

Design Steel Temperature 350°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
225	15	25	35	40	45	-
230	15	25	35	40	45	-
235	15	25	35	40	45	-
240	15	25	37.5	42.5	45	-
245	15	25	37.5	42.5	45	-
250	15	25	37.5	42.5	45	-
255	15	25	37.5	42.5	45	-
260	15	25	37.5	42.5	47.5	-
265	15	25	37.5	42.5	47.5	-
270	15	25	37.5	42.5	47.5	-
275	15	25	37.5	42.5	47.5	-
280	20	25	37.5	42.5	47.5	-
285	20	25	37.5	45	47.5	-
290	20	27.5	40	45	47.5	-
295	20	27.5	40	45	50	-
300	20	27.5	40	45	50	-
305	20	27.5	40	45	50	-
310	20	27.5	40	45	50	-
315	20	27.5	40	45	50	-
320	20	27.5	40	45	50	-
325	20	27.5	40	45	50	-
330	20	27.5	40	47.5	50	-
335	20	30	40	47.5	-	-
340	20	30	40	47.5	-	-
345	20	30	42.5	47.5	-	-
350	20	30	42.5	47.5	-	-

Design Steel Temperature 400°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	15	25	32.5	35
55	12.5	12.5	15	25	32.5	35
60	12.5	12.5	20	27.5	32.5	37.5
65	12.5	12.5	20	27.5	32.5	37.5
70	12.5	12.5	20	30	32.5	37.5
75	12.5	15	20	32.5	32.5	40
80	12.5	15	20	32.5	32.5	40
85	12.5	15	20	32.5	35	42.5
90	12.5	15	20	32.5	35	42.5
95	12.5	15	25	32.5	35	45
100	12.5	15	25	32.5	35	45
105	12.5	15	25	32.5	35	45
110	12.5	15	25	32.5	35	47.5
115	12.5	15	25	32.5	35	47.5
120	12.5	20	25	35	35	50
125	12.5	20	25	35	37.5	50
130	12.5	20	27.5	35	37.5	50
135	12.5	20	27.5	35	37.5	-
140	12.5	20	27.5	35	37.5	-
145	12.5	20	30	35	37.5	-
150	12.5	20	30	35	37.5	-
155	12.5	20	30	35	37.5	-
160	12.5	20	30	35	37.5	-
165	12.5	20	32.5	37.5	40	-
170	12.5	20	32.5	37.5	40	-
175	12.5	20	32.5	37.5	40	-
180	12.5	20	32.5	37.5	40	-
185	12.5	20	32.5	37.5	40	-
190	12.5	20	32.5	37.5	40	-
195	12.5	20	32.5	37.5	40	-
200	12.5	20	32.5	37.5	42.5	-
205	12.5	20	32.5	37.5	42.5	-
210	12.5	20	32.5	37.5	42.5	-
215	12.5	25	35	40	42.5	-
220	12.5	25	35	40	42.5	-
225	12.5	25	35	40	42.5	-
230	12.5	25	35	40	42.5	-

Design Steel Temperature 400°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
235	15	25	35	40	42.5	-
240	15	25	35	40	45	-
245	15	25	35	40	45	-
250	15	25	35	40	45	-
255	15	25	35	40	45	-
260	15	25	35	42.5	45	-
265	15	25	35	42.5	45	-
270	15	25	37.5	42.5	45	-
275	15	25	37.5	42.5	47.5	-
280	15	25	37.5	42.5	47.5	-
285	15	25	37.5	42.5	47.5	-
290	15	25	37.5	42.5	47.5	-
295	15	25	37.5	42.5	47.5	-
300	15	25	37.5	42.5	47.5	-
305	15	25	37.5	45	47.5	-
310	15	27.5	37.5	45	47.5	-
315	15	27.5	37.5	45	50	-
320	20	27.5	37.5	45	50	-
325	20	27.5	40	45	50	-
330	20	27.5	40	45	50	-
335	20	27.5	40	45	50	-
340	20	27.5	40	45	50	-
345	20	27.5	40	45	50	-
350	20	27.5	40	47.5	50	-
355	20	27.5	40	47.5	-	-



Design Steel Temperature 450°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	12.5	20	27.5	32.5
55	12.5	12.5	15	20	32.5	32.5
60	12.5	12.5	15	25	32.5	32.5
65	12.5	12.5	15	25	32.5	32.5
70	12.5	12.5	15	25	32.5	32.5
75	12.5	12.5	20	27.5	32.5	35
80	12.5	12.5	20	30	32.5	35
85	12.5	12.5	20	30	32.5	35
90	12.5	15	20	32.5	32.5	35
95	12.5	15	20	32.5	35	35
100	12.5	15	20	32.5	35	35
105	12.5	15	20	32.5	35	35
110	12.5	15	20	32.5	35	37.5
115	12.5	15	25	32.5	35	37.5
120	12.5	15	25	32.5	35	37.5
125	12.5	15	25	32.5	35	37.5
130	12.5	15	25	32.5	35	37.5
135	12.5	15	25	35	37.5	37.5
140	12.5	20	25	35	37.5	40
145	12.5	20	25	35	37.5	40
150	12.5	20	25	35	37.5	40
155	12.5	20	25	35	37.5	40
160	12.5	20	27.5	35	37.5	40
165	12.5	20	27.5	35	37.5	40
170	12.5	20	27.5	35	37.5	40
175	12.5	20	27.5	35	40	42.5
180	12.5	20	30	37.5	40	42.5
185	12.5	20	30	37.5	40	42.5
190	12.5	20	30	37.5	40	42.5
195	12.5	20	30	37.5	40	42.5
200	12.5	20	30	37.5	40	42.5
205	12.5	20	32.5	37.5	40	45
210	12.5	20	32.5	37.5	40	45
215	12.5	20	32.5	37.5	42.5	45
220	12.5	20	32.5	37.5	42.5	45
225	12.5	20	32.5	37.5	42.5	45
230	12.5	20	32.5	40	42.5	45

Design Steel Temperature 450°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
235	12.5	25	32.5	40	42.5	45
240	12.5	25	32.5	40	42.5	47.5
245	12.5	25	32.5	40	42.5	47.5
250	12.5	25	32.5	40	45	47.5
255	12.5	25	35	40	45	47.5
260	12.5	25	35	40	45	47.5
265	12.5	25	35	40	45	47.5
270	12.5	25	35	40	45	47.5
275	12.5	25	35	42.5	45	50
280	12.5	25	35	42.5	45	50
285	12.5	25	35	42.5	45	50
290	12.5	25	35	42.5	47.5	50
295	12.5	25	35	42.5	47.5	50
300	12.5	25	35	42.5	47.5	50
305	12.5	25	37.5	42.5	47.5	-
310	12.5	25	37.5	42.5	47.5	-
315	12.5	25	37.5	42.5	47.5	-
320	12.5	25	37.5	45	47.5	-
325	12.5	25	37.5	45	47.5	-
330	15	27.5	37.5	45	50	-
335	15	27.5	37.5	45	50	-
340	15	27.5	37.5	45	50	-
345	15	27.5	37.5	45	50	-
350	15	27.5	37.5	45	50	-
355	15	27.5	37.5	45	50	-

Design Steel Temperature 500°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	12.5	15	25	32.5
55	12.5	12.5	12.5	20	27.5	32.5
60	12.5	12.5	12.5	20	30	35
65	12.5	12.5	15	20	32.5	35
70	12.5	12.5	15	25	32.5	37.5
75	12.5	12.5	15	25	32.5	37.5
80	12.5	12.5	15	25	32.5	37.5
85	12.5	12.5	15	27.5	32.5	40
90	12.5	12.5	20	27.5	32.5	40
95	12.5	12.5	20	30	32.5	42.5
100	12.5	12.5	20	32.5	35	42.5
105	12.5	12.5	20	32.5	35	42.5
110	12.5	15	20	32.5	35	45
115	12.5	15	20	32.5	35	45
120	12.5	15	20	32.5	35	47.5
125	12.5	15	20	32.5	35	47.5
130	12.5	15	20	32.5	35	47.5
135	12.5	15	20	32.5	37.5	50
140	12.5	15	20	32.5	37.5	50
145	12.5	15	20	35	37.5	-
150	12.5	15	25	35	37.5	-
155	12.5	15	25	35	37.5	-
160	12.5	20	25	35	37.5	-
165	12.5	20	25	35	37.5	-
170	12.5	20	25	35	37.5	-
175	12.5	20	25	35	40	-
180	12.5	20	25	35	40	-
185	12.5	20	25	35	40	-
190	12.5	20	25	37.5	40	-
195	12.5	20	25	37.5	40	-
200	12.5	20	25	37.5	40	-
205	12.5	20	25	37.5	40	-
210	12.5	20	27.5	37.5	42.5	-
215	12.5	20	27.5	37.5	42.5	-
220	12.5	20	27.5	37.5	42.5	-
225	12.5	20	27.5	37.5	42.5	-
230	12.5	20	27.5	40	42.5	-

Design Steel Temperature 500°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
235	12.5	20	27.5	40	42.5	-
240	12.5	20	30	40	42.5	-
245	12.5	20	30	40	45	-
250	12.5	20	30	40	45	-
255	12.5	20	30	40	45	-
260	12.5	25	30	40	45	-
265	12.5	25	30	40	45	-
270	12.5	25	32.5	40	45	-
275	12.5	25	32.5	42.5	45	-
280	12.5	25	32.5	42.5	47.5	-
285	12.5	25	32.5	42.5	47.5	-
290	12.5	25	32.5	42.5	47.5	-
295	12.5	25	32.5	42.5	47.5	-
300	12.5	25	32.5	42.5	47.5	-
305	12.5	25	32.5	42.5	47.5	-
310	12.5	25	35	42.5	47.5	-
315	12.5	25	35	45	47.5	-
320	12.5	25	35	45	50	-
325	12.5	25	35	45	50	-
330	12.5	25	35	45	50	-
335	12.5	25	35	45	50	-
340	12.5	25	35	45	50	-
345	12.5	25	35	45	50	-
350	12.5	25	37.5	45	50	-
355	12.5	27.5	37.5	45	-	-

Design Steel Temperature 550°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	12.5	15	25	32.5
55	12.5	12.5	12.5	15	25	32.5
60	12.5	12.5	12.5	20	27.5	32.5
65	12.5	12.5	12.5	20	30	32.5
70	12.5	12.5	15	20	32.5	32.5
75	12.5	12.5	15	20	32.5	32.5
80	12.5	12.5	15	25	32.5	32.5
85	12.5	12.5	15	25	32.5	35
90	12.5	12.5	15	25	32.5	35
95	12.5	12.5	15	27.5	32.5	35
100	12.5	12.5	15	27.5	32.5	35
105	12.5	12.5	20	30	32.5	35
110	12.5	12.5	20	30	35	35
115	12.5	12.5	20	32.5	35	35
120	12.5	15	20	32.5	35	37.5
125	12.5	15	20	32.5	35	37.5
130	12.5	15	20	32.5	35	37.5
135	12.5	15	20	32.5	35	37.5
140	12.5	15	20	32.5	35	37.5
145	12.5	15	20	32.5	35	37.5
150	12.5	15	20	32.5	35	37.5
155	12.5	15	20	32.5	37.5	40
160	12.5	15	20	32.5	37.5	40
165	12.5	15	20	35	37.5	40
170	12.5	15	20	35	37.5	40
175	12.5	20	25	35	37.5	40
180	12.5	20	25	35	37.5	40
185	12.5	20	25	35	37.5	40
190	12.5	20	25	35	37.5	42.5
195	12.5	20	25	35	40	42.5
200	12.5	20	25	35	40	42.5
205	12.5	20	25	35	40	42.5
210	12.5	20	25	35	40	42.5
215	12.5	20	25	37.5	40	42.5
220	12.5	20	25	37.5	40	42.5
225	12.5	20	25	37.5	40	42.5
230	12.5	20	25	37.5	40	45

Design Steel Temperature 550°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
235	12.5	20	25	37.5	42.5	45
240	12.5	20	25	37.5	42.5	45
245	12.5	20	27.5	37.5	42.5	45
250	12.5	20	27.5	37.5	42.5	45
255	12.5	20	27.5	37.5	42.5	45
260	12.5	20	27.5	40	42.5	45
265	12.5	20	27.5	40	42.5	47.5
270	12.5	20	27.5	40	42.5	47.5
275	12.5	20	27.5	40	42.5	47.5
280	12.5	25	27.5	40	45	47.5
285	12.5	25	30	40	45	47.5
290	12.5	25	30	40	45	47.5
295	12.5	25	30	40	45	47.5
300	12.5	25	30	40	45	50
305	12.5	25	30	40	45	50
310	12.5	25	30	42.5	45	50
315	12.5	25	30	42.5	45	50
320	12.5	25	32.5	42.5	47.5	50
325	12.5	25	32.5	42.5	47.5	50
330	12.5	25	32.5	42.5	47.5	50
335	12.5	25	32.5	42.5	47.5	-
340	12.5	25	32.5	42.5	47.5	-
345	12.5	25	32.5	42.5	47.5	-
350	12.5	25	32.5	42.5	47.5	-
355	12.5	25	32.5	42.5	47.5	-

Design Steel Temperature 600°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	12.5	12.5	20	30
55	12.5	12.5	12.5	12.5	25	32.5
60	12.5	12.5	12.5	15	25	32.5
65	12.5	12.5	12.5	15	27.5	32.5
70	12.5	12.5	12.5	20	30	32.5
75	12.5	12.5	12.5	20	32.5	32.5
80	12.5	12.5	12.5	20	32.5	32.5
85	12.5	12.5	15	20	32.5	32.5
90	12.5	12.5	15	25	32.5	35
95	12.5	12.5	15	25	32.5	35
100	12.5	12.5	15	25	32.5	35
105	12.5	12.5	15	25	32.5	35
110	12.5	12.5	15	27.5	32.5	35
115	12.5	12.5	15	27.5	35	35
120	12.5	12.5	20	30	35	35
125	12.5	12.5	20	30	35	37.5
130	12.5	12.5	20	32.5	35	37.5
135	12.5	12.5	20	32.5	35	37.5
140	12.5	12.5	20	32.5	35	37.5
145	12.5	12.5	20	32.5	35	37.5
150	12.5	15	20	32.5	35	37.5
155	12.5	15	20	32.5	35	37.5
160	12.5	15	20	32.5	37.5	37.5
165	12.5	15	20	32.5	37.5	40
170	12.5	15	20	32.5	37.5	40
175	12.5	15	20	32.5	37.5	40
180	12.5	15	20	35	37.5	40
185	12.5	15	20	35	37.5	40
190	12.5	15	25	35	37.5	40
195	12.5	15	25	35	37.5	40
200	12.5	20	25	35	37.5	42.5
205	12.5	20	25	35	40	42.5
210	12.5	20	25	35	40	42.5
215	12.5	20	25	35	40	42.5
220	12.5	20	25	35	40	42.5
225	12.5	20	25	35	40	42.5
230	12.5	20	25	37.5	40	42.5

Design Steel Temperature 600°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
235	12.5	20	25	37.5	40	42.5
240	12.5	20	25	37.5	40	45
245	12.5	20	25	37.5	42.5	45
250	12.5	20	25	37.5	42.5	45
255	12.5	20	25	37.5	42.5	45
260	12.5	20	27.5	37.5	42.5	45
265	12.5	20	27.5	37.5	42.5	45
270	12.5	20	27.5	37.5	42.5	45
275	12.5	20	27.5	37.5	42.5	47.5
280	12.5	20	27.5	40	42.5	47.5
285	12.5	20	27.5	40	42.5	47.5
290	12.5	20	27.5	40	45	47.5
295	12.5	20	30	40	45	47.5
300	12.5	20	30	40	45	47.5
305	12.5	25	30	40	45	47.5
310	12.5	25	30	40	45	50
315	12.5	25	30	40	45	50
320	12.5	25	30	40	45	50
325	12.5	25	30	40	45	50
330	12.5	25	32.5	42.5	45	50
335	12.5	25	32.5	42.5	47.5	50
340	12.5	25	32.5	42.5	47.5	50
345	12.5	25	32.5	42.5	47.5	50
350	12.5	25	32.5	42.5	47.5	-
355	12.5	25	32.5	42.5	47.5	-



Design Steel Temperature 650°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	12.5	12.5	15	30
55	12.5	12.5	12.5	12.5	20	32.5
60	12.5	12.5	12.5	12.5	25	32.5
65	12.5	12.5	12.5	15	27.5	32.5
70	12.5	12.5	12.5	15	30	32.5
75	12.5	12.5	12.5	20	32.5	32.5
80	12.5	12.5	12.5	20	32.5	32.5
85	12.5	12.5	12.5	20	32.5	32.5
90	12.5	12.5	12.5	25	32.5	35
95	12.5	12.5	15	25	32.5	35
100	12.5	12.5	15	25	32.5	35
105	12.5	12.5	15	27.5	32.5	35
110	12.5	12.5	15	27.5	32.5	35
115	12.5	12.5	15	30	32.5	35
120	12.5	12.5	15	30	35	35
125	12.5	12.5	15	32.5	35	35
130	12.5	12.5	20	32.5	35	37.5
135	12.5	12.5	20	32.5	35	37.5
140	12.5	12.5	20	32.5	35	37.5
145	12.5	12.5	20	32.5	35	37.5
150	12.5	12.5	20	32.5	35	37.5
155	12.5	12.5	20	32.5	35	37.5
160	12.5	12.5	20	32.5	35	37.5
165	12.5	12.5	20	32.5	37.5	37.5
170	12.5	12.5	20	32.5	37.5	40
175	12.5	12.5	20	32.5	37.5	40
180	12.5	12.5	20	35	37.5	40
185	12.5	15	20	35	37.5	40
190	12.5	15	20	35	37.5	40
195	12.5	15	25	35	37.5	40
200	12.5	15	25	35	37.5	40
205	12.5	15	25	35	37.5	40
210	12.5	15	25	35	40	42.5
215	12.5	15	25	35	40	42.5
220	12.5	15	25	35	40	42.5
225	12.5	15	25	35	40	42.5
230	12.5	20	25	37.5	40	42.5

Design Steel Temperature 650°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
235	12.5	20	25	37.5	40	42.5
240	12.5	20	25	37.5	40	42.5
245	12.5	20	25	37.5	40	45
250	12.5	20	25	37.5	40	45
255	12.5	20	25	37.5	42.5	45
260	12.5	20	27.5	37.5	42.5	45
265	12.5	20	27.5	37.5	42.5	45
270	12.5	20	27.5	37.5	42.5	45
275	12.5	20	27.5	37.5	42.5	45
280	12.5	20	27.5	37.5	42.5	45
285	12.5	20	27.5	40	42.5	47.5
290	12.5	20	30	40	42.5	47.5
295	12.5	20	30	40	42.5	47.5
300	12.5	20	30	40	42.5	47.5
305	12.5	20	30	40	45	47.5
310	12.5	20	30	40	45	47.5
315	12.5	20	30	40	45	47.5
320	12.5	20	30	40	45	47.5
325	12.5	25	32.5	40	45	50
330	12.5	25	32.5	40	45	50
335	12.5	25	32.5	40	45	50
340	12.5	25	32.5	42.5	45	50
345	12.5	25	32.5	42.5	45	50
350	12.5	25	32.5	42.5	47.5	50
355	12.5	25	32.5	42.5	47.5	50

Design Steel Temperature 700°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	12.5	12.5	12.5	30
55	12.5	12.5	12.5	12.5	15	32.5
60	12.5	12.5	12.5	12.5	25	32.5
65	12.5	12.5	12.5	12.5	27.5	32.5
70	12.5	12.5	12.5	12.5	32.5	32.5
75	12.5	12.5	12.5	15	32.5	32.5
80	12.5	12.5	12.5	20	32.5	32.5
85	12.5	12.5	12.5	20	32.5	32.5
90	12.5	12.5	12.5	25	32.5	32.5
95	12.5	12.5	12.5	25	32.5	35
100	12.5	12.5	12.5	25	32.5	35
105	12.5	12.5	12.5	27.5	32.5	35
110	12.5	12.5	15	30	32.5	35
115	12.5	12.5	15	32.5	32.5	35
120	12.5	12.5	15	32.5	35	35
125	12.5	12.5	15	32.5	35	35
130	12.5	12.5	15	32.5	35	35
135	12.5	12.5	15	32.5	35	37.5
140	12.5	12.5	20	32.5	35	37.5
145	12.5	12.5	20	32.5	35	37.5
150	12.5	12.5	20	32.5	35	37.5
155	12.5	12.5	20	32.5	35	37.5
160	12.5	12.5	20	32.5	35	37.5
165	12.5	12.5	20	32.5	35	37.5
170	12.5	12.5	20	32.5	37.5	37.5
175	12.5	12.5	20	35	37.5	40
180	12.5	12.5	20	35	37.5	40
185	12.5	12.5	20	35	37.5	40
190	12.5	12.5	20	35	37.5	40
195	12.5	12.5	25	35	37.5	40
200	12.5	12.5	25	35	37.5	40
205	12.5	12.5	25	35	37.5	40
210	12.5	12.5	25	35	37.5	40
215	12.5	12.5	25	35	37.5	42.5
220	12.5	12.5	25	35	40	42.5
225	12.5	15	25	35	40	42.5
230	12.5	15	25	35	40	42.5

Design Steel Temperature 700°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
235	12.5	15	25	37.5	40	42.5
240	12.5	15	25	37.5	40	42.5
245	12.5	15	25	37.5	40	42.5
250	12.5	15	27.5	37.5	40	42.5
255	12.5	15	27.5	37.5	40	45
260	12.5	15	27.5	37.5	40	45
265	12.5	20	27.5	37.5	42.5	45
270	12.5	20	27.5	37.5	42.5	45
275	12.5	20	27.5	37.5	42.5	45
280	12.5	20	30	37.5	42.5	45
285	12.5	20	30	37.5	42.5	45
290	12.5	20	30	37.5	42.5	45
295	12.5	20	30	40	42.5	45
300	12.5	20	30	40	42.5	47.5
305	12.5	20	30	40	42.5	47.5
310	12.5	20	32.5	40	42.5	47.5
315	12.5	20	32.5	40	45	47.5
320	12.5	20	32.5	40	45	47.5
325	12.5	20	32.5	40	45	47.5
330	12.5	20	32.5	40	45	47.5
335	12.5	20	32.5	40	45	47.5
340	12.5	20	32.5	40	45	50
345	12.5	25	32.5	40	45	50
350	12.5	25	32.5	40	45	50
355	12.5	25	32.5	42.5	45	50

Design Steel Temperature 750°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50	12.5	12.5	12.5	12.5	12.5	32.5
55	12.5	12.5	12.5	12.5	15	35
60	12.5	12.5	12.5	12.5	25	35
65	12.5	12.5	12.5	12.5	27.5	37.5
70	12.5	12.5	12.5	12.5	32.5	40
75	12.5	12.5	12.5	15	32.5	42.5
80	12.5	12.5	12.5	20	32.5	42.5
85	12.5	12.5	12.5	20	32.5	45
90	12.5	12.5	12.5	25	32.5	47.5
95	12.5	12.5	12.5	25	32.5	50
100	12.5	12.5	12.5	27.5	32.5	50
105	12.5	12.5	12.5	27.5	32.5	-
110	12.5	12.5	12.5	30	32.5	-
115	12.5	12.5	12.5	32.5	32.5	-
120	12.5	12.5	15	32.5	35	-
125	12.5	12.5	15	32.5	35	-
130	12.5	12.5	15	32.5	35	-
135	12.5	12.5	15	32.5	35	-
140	12.5	12.5	15	32.5	35	-
145	12.5	12.5	20	32.5	35	-
150	12.5	12.5	20	32.5	35	-
155	12.5	12.5	20	32.5	35	-
160	12.5	12.5	20	32.5	35	-
165	12.5	12.5	20	32.5	35	-
170	12.5	12.5	20	32.5	35	-
175	12.5	12.5	20	32.5	37.5	-
180	12.5	12.5	20	35	37.5	-
185	12.5	12.5	20	35	37.5	-
190	12.5	12.5	20	35	37.5	-
195	12.5	12.5	20	35	37.5	-
200	12.5	12.5	25	35	37.5	-
205	12.5	12.5	25	35	37.5	-
210	12.5	12.5	25	35	37.5	-
215	12.5	12.5	25	35	37.5	-
220	12.5	12.5	25	35	37.5	-
225	12.5	12.5	25	35	40	-
230	12.5	12.5	25	35	40	-

Design Steel Temperature 750°C						
Firetect® P Required Board Thickness						
Hp/A	30 min	60 min	90 min	120 min	150 min	180 min
[m-1]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
235	12.5	12.5	25	35	40	-
240	12.5	12.5	25	35	40	-
245	12.5	12.5	25	37.5	40	-
250	12.5	12.5	25	37.5	40	-
255	12.5	12.5	27.5	37.5	40	-
260	12.5	12.5	27.5	37.5	40	-
265	12.5	12.5	27.5	37.5	40	-
270	12.5	12.5	27.5	37.5	40	-
275	12.5	12.5	27.5	37.5	40	-
280	12.5	12.5	27.5	37.5	42.5	-
285	12.5	12.5	30	37.5	42.5	-
290	12.5	15	30	37.5	42.5	-
295	12.5	15	30	37.5	42.5	-
300	12.5	15	30	37.5	42.5	-
305	12.5	15	30	37.5	42.5	-
310	12.5	15	32.5	40	42.5	-
315	12.5	15	32.5	40	42.5	-
320	12.5	15	32.5	40	42.5	-
325	12.5	20	32.5	40	42.5	-
330	12.5	20	32.5	40	42.5	-
335	12.5	20	32.5	40	45	-
340	12.5	20	32.5	40	45	-
345	12.5	20	32.5	40	45	-
350	12.5	20	32.5	40	45	-
355	12.5	20	32.5	40	45	-