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European Technical Assessment

ETA-14/0402
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® A

**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

A002

**This European Technical Assessment
contains**

25 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 14-0402, version 1, issued on 09/12/2014

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Specific parts

1 Technical description of the product

Firetect® A is a light weight fire resistant board used as fire resistant board to enhance fire performance of load-bearing steel elements.

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

| Product | Description | |
|----------------------|---|--------------|
| Fireprotective board | Firetect® A board Board material composed of high density mineral wool, clay and cellulose fiber components. The board is hard pressed, has a sanded upper surface and a smooth prefab PVC primed reverse face | |
| | Dimensions | Thickness |
| | 1200 mm x 2500 mm | 15 and 20 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) | |

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® A has no formaldehyde containing components and is 100% asbestos-free.

The use category of Firetect® A 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® A 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 |

Table 1: intended use

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

Environmental conditions are type Z₂: intended for use in internal conditions only.

2.2 Working life

The assumed working life of the of Firetect® A 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 Z₂ 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 |
| BWR 2 Safety in case of fire | | |
| 1 | Reaction to fire | No performance determined |
| 2 | Resistance to fire | See annex 1 |
| 3 | Durability and serviceability | Z ₂ |
| BWR 3 Hygiene, health and environment | | |
| 4 | Content, emission and/or release of dangerous substances | Declaration of manufacturer |
| BWR 4 Safety and accessibility in use | | |
| 5 | Pull through resistance of mechanical fasteners | No performance determined |
| 66 | Shear load resistance of mechanical fastening systems | No performance determined |
| 7 | Resistance to soft body impact | No performance determined |
| 8 | Resistance to hard body impact | No performance determined |
| 9 | Resistance to eccentric load | No performance determined |
| 10 | Adhesion | Not applicable |
| BWR 5 Protection against noise | | |
| 11 | Airborne sound insulation | No performance determined |
| 12 | Sound absorption | No performance determined |
| 13 | Impact sound insulation | No performance determined |
| BWR 6 Energy economy and heat retention | | |
| 14 | Thermal properties | No performance determined |
| 15 | Water vapour transmission coefficient | No performance determined |

| Firetect® A | | |
|--|---------------------------------------|---------------------------|
| No | Essential Characteristic | Product performances |
| BWR 2 Safety in case of fire | | |
| 16 | Reaction to fire | Class A2-s1,d0 |
| 17 | Resistance to fire | See annex 1 |
| 18 | Durability and serviceability | Z ₂ |
| BWR 3 Hygiene, health and environment | | |
| 19 | Water permeability | Not relevant |
| BWR 4 Safety and accessibility in use | | |
| 20 | Flexural strength | No performance determined |
| 21 | Dimensional stability | No performance determined |
| BWR 6 Energy economy and heat retention | | |
| 22 | Thermal resistance | No performance determined |
| 23 | Water vapour transmission coefficient | No performance determined |

| Mechanical fasteners | | |
|--|---|---------------------------|
| No | Essential Characteristic | Product performances |
| BWR 2 Safety in case of fire | | |
| 24 | Reaction to fire | No performance determined |
| 25 | Durability and serviceability | No performance determined |
| BWR 4 Safety and accessibility in use | | |
| 26 | Pull-out resistance of mechanical fasteners | No performance determined |

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

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

| Insulation products | | |
|--|---------------------------------------|----------------------|
| No | Essential Characteristic | Product performances |
| BWR 2 Safety in case of fire | | |
| 32 | Reaction to fire | Not applicable |
| 33 | Resistance to fire | Not applicable |
| BWR 6 Energy economy and heat retention | | |
| 34 | Thermal resistance | Not applicable |
| 35 | Water vapour transmission coefficient | Not applicable |

| Profiles, framework and studs | | |
|--|-------------------------------------|----------------------|
| No | Essential Characteristic | Product performances |
| BWR 2 Safety in case of fire | | |
| 36 | Reaction to fire | Not applicable |
| 37 | Durability and serviceability | Not applicable |
| BWR 4 Safety and accessibility in use | | |
| 38 | Mechanical resistance and stability | Not applicable |
| BWR 6 Energy economy and heat retention | | |
| 39 | Thermal resistance | Not applicable |

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 Commission¹, 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 uses subject to reaction to fire regulations | Any | 3 |

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 14/0402 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)

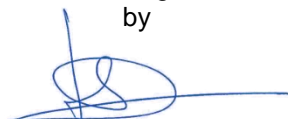
(b) Installation instruction:

- 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, manager productcertification
ir. H.A.J. van Dartel

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

1.1 Overview of fire resistance performances for Steel Columns and beams with Firetect® A 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® A 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® A boards up to 3 mm need no finishing.

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

1.1.1 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 | 0.009699 | 103 | 0.002165 | 462 | 0.000748 | - |
| | 60 min | 0.022494 | 44 | 0.007241 | 138 | 0.001522 | - |
| | 90 min | 0.035290 | 28 | 0.015130 | 66 | 0.002295 | 436 |
| | 120 min | 0.048085 | 21 | 0.023019 | 43 | 0.003069 | 326 |
| | 150 min | 0.060880 | 16 | 0.030908 | 32 | 0.006508 | 154 |
| | 180 min | 0.073675 | 14 | 0.038797 | 26 | 0.011125 | 90 |
| 400 °C | 30 min | 0.008425 | 119 | 0.002127 | - | 0.000728 | - |
| | 60 min | 0.019726 | 51 | 0.006701 | 149 | 0.001492 | - |
| | 90 min | 0.031027 | 32 | 0.013762 | 73 | 0.002257 | 443 |
| | 120 min | 0.042328 | 24 | 0.020823 | 48 | 0.003022 | 331 |
| | 150 min | 0.053630 | 19 | 0.027884 | 36 | 0.005937 | 168 |
| | 180 min | 0.064931 | 15 | 0.034945 | 29 | 0.010125 | 99 |
| 450 °C | 30 min | 0.007330 | 136 | 0.002085 | - | 0.000719 | - |
| | 60 min | 0.017374 | 58 | 0.006269 | 160 | 0.001491 | - |
| | 90 min | 0.027417 | 36 | 0.012678 | 79 | 0.002263 | 442 |
| | 120 min | 0.037461 | 27 | 0.019086 | 52 | 0.003035 | 330 |
| | 150 min | 0.047504 | 21 | 0.025495 | 39 | 0.005694 | 176 |
| | 180 min | 0.057548 | 17 | 0.031904 | 31 | 0.009373 | 107 |
| 500 °C | 30 min | 0.006330 | 158 | 0.001938 | - | 0.000678 | - |
| | 60 min | 0.015196 | 66 | 0.005460 | 183 | 0.001430 | - |
| | 90 min | 0.024061 | 42 | 0.011259 | 89 | 0.002183 | - |
| | 120 min | 0.032927 | 30 | 0.017059 | 59 | 0.002935 | 341 |
| | 150 min | 0.041793 | 24 | 0.022858 | 44 | 0.005015 | 199 |
| | 180 min | 0.050659 | 20 | 0.028657 | 35 | 0.008388 | 119 |
| 550 °C | 30 min | 0.005392 | 185 | 0.001791 | - | 0.000636 | - |
| | 60 min | 0.013178 | 76 | 0.004747 | 211 | 0.001375 | - |
| | 90 min | 0.020963 | 48 | 0.009914 | 101 | 0.002115 | - |
| | 120 min | 0.028749 | 35 | 0.015082 | 66 | 0.002854 | 350 |
| | 150 min | 0.036534 | 27 | 0.020250 | 49 | 0.004451 | 225 |
| | 180 min | 0.044320 | 23 | 0.025417 | 39 | 0.007402 | 135 |

| 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 | 0.004919 | 203 | 0.001673 | - | 0.000587 | - |
| | 60 min | 0.012088 | 83 | 0.004361 | 229 | 0.001316 | - |
| | 90 min | 0.019256 | 52 | 0.009102 | 110 | 0.002045 | - |
| | 120 min | 0.026424 | 38 | 0.013844 | 72 | 0.002774 | 360 |
| | 150 min | 0.033592 | 30 | 0.018585 | 54 | 0.004010 | 249 |
| | 180 min | 0.040760 | 25 | 0.023327 | 43 | 0.006606 | 151 |
| 650 °C | 30 min | 0.004513 | 222 | 0.001592 | - | 0.000526 | - |
| | 60 min | 0.011076 | 90 | 0.004303 | 232 | 0.001251 | - |
| | 90 min | 0.017639 | 57 | 0.008722 | 115 | 0.001977 | - |
| | 120 min | 0.024202 | 41 | 0.013142 | 76 | 0.002702 | 370 |
| | 150 min | 0.030765 | 33 | 0.017561 | 57 | 0.003712 | 269 |
| | 180 min | 0.037328 | 27 | 0.021980 | 45 | 0.006132 | 163 |
| 700 °C | 30 min | 0.004116 | 243 | 0.001413 | - | 0.000449 | - |
| | 60 min | 0.010111 | 99 | 0.004064 | 246 | 0.001181 | - |
| | 90 min | 0.016106 | 62 | 0.008234 | 121 | 0.001912 | - |
| | 120 min | 0.022101 | 45 | 0.012404 | 81 | 0.002643 | 378 |
| | 150 min | 0.028096 | 36 | 0.016574 | 60 | 0.003518 | 284 |
| | 180 min | 0.034091 | 29 | 0.020745 | 48 | 0.005772 | 173 |
| 750 °C | 30 min | 0.003591 | 278 | 0.001087 | - | 0.000331 | - |
| | 60 min | 0.009030 | 111 | 0.003556 | 281 | 0.001051 | - |
| | 90 min | 0.014470 | 69 | 0.007378 | 136 | 0.001771 | - |
| | 120 min | 0.019909 | 50 | 0.011199 | 89 | 0.002492 | 401 |
| | 150 min | 0.025349 | 39 | 0.015021 | 67 | 0.003212 | 311 |
| | 180 min | 0.030788 | 32 | 0.018843 | 53 | 0.005016 | 199 |

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

| Design Steel Temperature 350°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 15 | 30 | 35 | 45 | - | - |
| 55 | 15 | 30 | 40 | 45 | - | - |
| 60 | 15 | 30 | 40 | 50 | - | - |
| 65 | 15 | 30 | 40 | - | - | - |
| 70 | 15 | 30 | 45 | - | - | - |
| 75 | 15 | 30 | 45 | - | - | - |
| 80 | 15 | 35 | 45 | - | - | - |
| 85 | 20 | 35 | 45 | - | - | - |
| 90 | 20 | 35 | 45 | - | - | - |
| 95 | 20 | 40 | 50 | - | - | - |
| 100 | 20 | 40 | 50 | - | - | - |
| 105 | 30 | 40 | - | - | - | - |
| 110 | 30 | 40 | - | - | - | - |
| 115 | 30 | 40 | - | - | - | - |
| 120 | 30 | 40 | - | - | - | - |
| 125 | 30 | 40 | - | - | - | - |
| 130 | 30 | 40 | - | - | - | - |
| 135 | 30 | 40 | - | - | - | - |
| 140 | 30 | 40 | - | - | - | - |
| 145 | 30 | 40 | - | - | - | - |
| 150 | 30 | 40 | - | - | - | - |
| 155 | 30 | 45 | - | - | - | - |
| 160 | 30 | 45 | - | - | - | - |
| 165 | 30 | 45 | - | - | - | - |
| 170 | 30 | 45 | - | - | - | - |
| 175 | 30 | 45 | - | - | - | - |
| 180 | 30 | 45 | - | - | - | - |
| 185 | 30 | 45 | - | - | - | - |
| 190 | 30 | 45 | - | - | - | - |
| 195 | 30 | 45 | - | - | - | - |
| 200 | 30 | 45 | - | - | - | - |
| 205 | 30 | 45 | - | - | - | - |
| 210 | 30 | 45 | - | - | - | - |
| 215 | 30 | 45 | - | - | - | - |

| Design Steel Temperature 350°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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] |
| 220 | 30 | 45 | - | - | - | - |
| 225 | 30 | 45 | - | - | - | - |
| 230 | 30 | 45 | - | - | - | - |
| 235 | 30 | 45 | - | - | - | - |
| 240 | 30 | 45 | - | - | - | - |
| 245 | 30 | 45 | - | - | - | - |
| 250 | 30 | 45 | - | - | - | - |
| 255 | 30 | 45 | - | - | - | - |
| 260 | 30 | 50 | - | - | - | - |
| 265 | 30 | 50 | - | - | - | - |
| 270 | 30 | 50 | - | - | - | - |
| 275 | 30 | 50 | - | - | - | - |
| 280 | 30 | 50 | - | - | - | - |
| 285 | 35 | 50 | - | - | - | - |
| 290 | 35 | 50 | - | - | - | - |
| 295 | 35 | 50 | - | - | - | - |
| 300 | 35 | 50 | - | - | - | - |
| 305 | 35 | 50 | - | - | - | - |
| 310 | 35 | 50 | - | - | - | - |
| 315 | 35 | 50 | - | - | - | - |
| 320 | 35 | - | - | - | - | - |
| 325 | 35 | - | - | - | - | - |
| 330 | 35 | - | - | - | - | - |
| 335 | 35 | - | - | - | - | - |
| 340 | 35 | - | - | - | - | - |
| 345 | 35 | - | - | - | - | - |
| 350 | 40 | - | - | - | - | - |
| 355 | 40 | - | - | - | - | - |

| Design Steel Temperature 400°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 15 | 30 | 30 | 40 | 50 | - |
| 55 | 15 | 30 | 35 | 45 | 50 | - |
| 60 | 15 | 30 | 35 | 45 | - | - |
| 65 | 15 | 30 | 40 | 45 | - | - |
| 70 | 15 | 30 | 40 | 50 | - | - |
| 75 | 15 | 30 | 40 | 50 | - | - |
| 80 | 15 | 30 | 40 | - | - | - |
| 85 | 15 | 30 | 45 | - | - | - |
| 90 | 15 | 30 | 45 | - | - | - |
| 95 | 15 | 30 | 45 | - | - | - |
| 100 | 20 | 35 | 45 | - | - | - |
| 105 | 20 | 35 | 45 | - | - | - |
| 110 | 20 | 35 | 45 | - | - | - |
| 115 | 20 | 35 | 45 | - | - | - |
| 120 | 20 | 40 | 50 | - | - | - |
| 125 | 20 | 40 | 50 | - | - | - |
| 130 | 20 | 40 | 50 | - | - | - |
| 135 | 30 | 40 | 50 | - | - | - |
| 140 | 30 | 40 | - | - | - | - |
| 145 | 30 | 40 | - | - | - | - |
| 150 | 30 | 40 | - | - | - | - |
| 155 | 30 | 40 | - | - | - | - |
| 160 | 30 | 40 | - | - | - | - |
| 165 | 30 | 40 | - | - | - | - |
| 170 | 30 | 40 | - | - | - | - |
| 175 | 30 | 40 | - | - | - | - |
| 180 | 30 | 45 | - | - | - | - |
| 185 | 30 | 45 | - | - | - | - |
| 190 | 30 | 45 | - | - | - | - |
| 195 | 30 | 45 | - | - | - | - |
| 200 | 30 | 45 | - | - | - | - |
| 205 | 30 | 45 | - | - | - | - |
| 210 | 30 | 45 | - | - | - | - |
| 215 | 30 | 45 | - | - | - | - |
| 220 | 30 | 45 | - | - | - | - |
| 225 | 30 | 45 | - | - | - | - |
| 230 | 30 | 45 | - | - | - | - |

| Design Steel Temperature 400°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 30 | 45 | - | - | - | - |
| 240 | 30 | 45 | - | - | - | - |
| 245 | 30 | 45 | - | - | - | - |
| 250 | 30 | 45 | - | - | - | - |
| 255 | 30 | 45 | - | - | - | - |
| 260 | 30 | 45 | - | - | - | - |
| 265 | 30 | 45 | - | - | - | - |
| 270 | 30 | 45 | - | - | - | - |
| 275 | 30 | 45 | - | - | - | - |
| 280 | 30 | 45 | - | - | - | - |
| 285 | 30 | 45 | - | - | - | - |
| 290 | 30 | 50 | - | - | - | - |
| 295 | 30 | 50 | - | - | - | - |
| 300 | 30 | 50 | - | - | - | - |
| 305 | 30 | 50 | - | - | - | - |
| 310 | 30 | 50 | - | - | - | - |
| 315 | 30 | 50 | - | - | - | - |
| 320 | 35 | 50 | - | - | - | - |
| 325 | 35 | 50 | - | - | - | - |
| 330 | 35 | 50 | - | - | - | - |
| 335 | 35 | 50 | - | - | - | - |
| 340 | 35 | 50 | - | - | - | - |
| 345 | 35 | 50 | - | - | - | - |
| 350 | 35 | 50 | - | - | - | - |
| 355 | 35 | - | - | - | - | - |

| Design Steel Temperature 450°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 15 | 15 | 30 | 35 | 45 | 50 |
| 55 | 15 | 20 | 30 | 40 | 45 | - |
| 60 | 15 | 30 | 30 | 40 | 50 | - |
| 65 | 15 | 30 | 30 | 45 | 50 | - |
| 70 | 15 | 30 | 35 | 45 | - | - |
| 75 | 15 | 30 | 35 | 45 | - | - |
| 80 | 15 | 30 | 40 | 45 | - | - |
| 85 | 15 | 30 | 40 | 50 | - | - |
| 90 | 15 | 30 | 40 | 50 | - | - |
| 95 | 15 | 30 | 40 | 50 | - | - |
| 100 | 15 | 30 | 40 | - | - | - |
| 105 | 15 | 30 | 45 | - | - | - |
| 110 | 15 | 30 | 45 | - | - | - |
| 115 | 15 | 30 | 45 | - | - | - |
| 120 | 15 | 30 | 45 | - | - | - |
| 125 | 15 | 30 | 45 | - | - | - |
| 130 | 20 | 35 | 45 | - | - | - |
| 135 | 20 | 35 | 45 | - | - | - |
| 140 | 20 | 35 | 45 | - | - | - |
| 145 | 20 | 35 | 45 | - | - | - |
| 150 | 20 | 35 | 50 | - | - | - |
| 155 | 20 | 40 | 50 | - | - | - |
| 160 | 20 | 40 | 50 | - | - | - |
| 165 | 20 | 40 | 50 | - | - | - |
| 170 | 20 | 40 | 50 | - | - | - |
| 175 | 20 | 40 | - | - | - | - |
| 180 | 20 | 40 | - | - | - | - |
| 185 | 20 | 40 | - | - | - | - |
| 190 | 30 | 40 | - | - | - | - |
| 195 | 30 | 40 | - | - | - | - |
| 200 | 30 | 40 | - | - | - | - |
| 205 | 30 | 40 | - | - | - | - |
| 210 | 30 | 40 | - | - | - | - |
| 215 | 30 | 45 | - | - | - | - |
| 220 | 30 | 45 | - | - | - | - |
| 225 | 30 | 45 | - | - | - | - |
| 230 | 30 | 45 | - | - | - | - |

| Design Steel Temperature 450°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 30 | 45 | - | - | - | - |
| 240 | 30 | 45 | - | - | - | - |
| 245 | 30 | 45 | - | - | - | - |
| 250 | 30 | 45 | - | - | - | - |
| 255 | 30 | 45 | - | - | - | - |
| 260 | 30 | 45 | - | - | - | - |
| 265 | 30 | 45 | - | - | - | - |
| 270 | 30 | 45 | - | - | - | - |
| 275 | 30 | 45 | - | - | - | - |
| 280 | 30 | 45 | - | - | - | - |
| 285 | 30 | 45 | - | - | - | - |
| 290 | 30 | 45 | - | - | - | - |
| 295 | 30 | 45 | - | - | - | - |
| 300 | 30 | 45 | - | - | - | - |
| 305 | 30 | 45 | - | - | - | - |
| 310 | 30 | 45 | - | - | - | - |
| 315 | 30 | 45 | - | - | - | - |
| 320 | 30 | 45 | - | - | - | - |
| 325 | 30 | 50 | - | - | - | - |
| 330 | 30 | 50 | - | - | - | - |
| 335 | 30 | 50 | - | - | - | - |
| 340 | 30 | 50 | - | - | - | - |
| 345 | 30 | 50 | - | - | - | - |
| 350 | 30 | 50 | - | - | - | - |
| 355 | 30 | 50 | - | - | - | - |

| Design Steel Temperature 500°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 15 | 15 | 30 | 35 | 45 | - |
| 55 | 15 | 15 | 30 | 40 | 50 | - |
| 60 | 15 | 15 | 30 | 40 | 50 | - |
| 65 | 15 | 20 | 30 | 45 | - | - |
| 70 | 15 | 30 | 35 | 45 | - | - |
| 75 | 15 | 30 | 35 | 45 | - | - |
| 80 | 15 | 30 | 40 | 50 | - | - |
| 85 | 15 | 30 | 40 | 50 | - | - |
| 90 | 15 | 30 | 40 | - | - | - |
| 95 | 15 | 30 | 40 | - | - | - |
| 100 | 15 | 30 | 45 | - | - | - |
| 105 | 15 | 30 | 45 | - | - | - |
| 110 | 15 | 30 | 45 | - | - | - |
| 115 | 15 | 30 | 45 | - | - | - |
| 120 | 15 | 30 | 45 | - | - | - |
| 125 | 15 | 30 | 45 | - | - | - |
| 130 | 15 | 35 | 50 | - | - | - |
| 135 | 15 | 35 | 50 | - | - | - |
| 140 | 15 | 35 | 50 | - | - | - |
| 145 | 15 | 35 | 50 | - | - | - |
| 150 | 15 | 40 | - | - | - | - |
| 155 | 15 | 40 | - | - | - | - |
| 160 | 15 | 40 | - | - | - | - |
| 165 | 20 | 40 | - | - | - | - |
| 170 | 20 | 40 | - | - | - | - |
| 175 | 20 | 40 | - | - | - | - |
| 180 | 20 | 40 | - | - | - | - |
| 185 | 20 | 40 | - | - | - | - |
| 190 | 20 | 40 | - | - | - | - |
| 195 | 20 | 40 | - | - | - | - |
| 200 | 20 | 40 | - | - | - | - |
| 205 | 20 | 45 | - | - | - | - |
| 210 | 20 | 45 | - | - | - | - |
| 215 | 20 | 45 | - | - | - | - |
| 220 | 20 | 45 | - | - | - | - |
| 225 | 20 | 45 | - | - | - | - |
| 230 | 20 | 45 | - | - | - | - |

| Design Steel Temperature 500°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 20 | 45 | - | - | - | - |
| 240 | 20 | 45 | - | - | - | - |
| 245 | 20 | 45 | - | - | - | - |
| 250 | 30 | 45 | - | - | - | - |
| 255 | 30 | 45 | - | - | - | - |
| 260 | 30 | 45 | - | - | - | - |
| 265 | 30 | 45 | - | - | - | - |
| 270 | 30 | 45 | - | - | - | - |
| 275 | 30 | 45 | - | - | - | - |
| 280 | 30 | 45 | - | - | - | - |
| 285 | 30 | 45 | - | - | - | - |
| 290 | 30 | 45 | - | - | - | - |
| 295 | 30 | 45 | - | - | - | - |
| 300 | 30 | 45 | - | - | - | - |
| 305 | 30 | 50 | - | - | - | - |
| 310 | 30 | 50 | - | - | - | - |
| 315 | 30 | 50 | - | - | - | - |
| 320 | 30 | 50 | - | - | - | - |
| 325 | 30 | 50 | - | - | - | - |
| 330 | 30 | 50 | - | - | - | - |
| 335 | 30 | 50 | - | - | - | - |
| 340 | 30 | 50 | - | - | - | - |
| 345 | 30 | 50 | - | - | - | - |
| 350 | 30 | 50 | - | - | - | - |
| 355 | 30 | 50 | - | - | - | - |

| Design Steel Temperature 550°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 15 | 15 | 30 | 30 | 40 | 50 |
| 55 | 15 | 15 | 30 | 35 | 45 | - |
| 60 | 15 | 15 | 30 | 35 | 45 | - |
| 65 | 15 | 15 | 30 | 40 | 50 | - |
| 70 | 15 | 15 | 30 | 40 | 50 | - |
| 75 | 15 | 20 | 30 | 45 | - | - |
| 80 | 15 | 20 | 35 | 45 | - | - |
| 85 | 15 | 30 | 35 | 45 | - | - |
| 90 | 15 | 30 | 35 | 45 | - | - |
| 95 | 15 | 30 | 40 | 50 | - | - |
| 100 | 15 | 30 | 40 | 50 | - | - |
| 105 | 15 | 30 | 40 | - | - | - |
| 110 | 15 | 30 | 40 | - | - | - |
| 115 | 15 | 30 | 40 | - | - | - |
| 120 | 15 | 30 | 45 | - | - | - |
| 125 | 15 | 30 | 45 | - | - | - |
| 130 | 15 | 30 | 45 | - | - | - |
| 135 | 15 | 30 | 45 | - | - | - |
| 140 | 15 | 30 | 45 | - | - | - |
| 145 | 15 | 30 | 45 | - | - | - |
| 150 | 15 | 35 | 45 | - | - | - |
| 155 | 15 | 35 | 45 | - | - | - |
| 160 | 15 | 35 | 45 | - | - | - |
| 165 | 15 | 35 | 50 | - | - | - |
| 170 | 15 | 35 | 50 | - | - | - |
| 175 | 15 | 40 | 50 | - | - | - |
| 180 | 15 | 40 | 50 | - | - | - |
| 185 | 15 | 40 | 50 | - | - | - |
| 190 | 15 | 40 | - | - | - | - |
| 195 | 15 | 40 | - | - | - | - |
| 200 | 20 | 40 | - | - | - | - |
| 205 | 20 | 40 | - | - | - | - |
| 210 | 20 | 40 | - | - | - | - |
| 215 | 20 | 40 | - | - | - | - |
| 220 | 20 | 40 | - | - | - | - |
| 225 | 20 | 40 | - | - | - | - |
| 230 | 20 | 40 | - | - | - | - |

| Design Steel Temperature 550°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 20 | 45 | - | - | - | - |
| 240 | 20 | 45 | - | - | - | - |
| 245 | 20 | 45 | - | - | - | - |
| 250 | 20 | 45 | - | - | - | - |
| 255 | 20 | 45 | - | - | - | - |
| 260 | 20 | 45 | - | - | - | - |
| 265 | 20 | 45 | - | - | - | - |
| 270 | 20 | 45 | - | - | - | - |
| 275 | 20 | 45 | - | - | - | - |
| 280 | 20 | 45 | - | - | - | - |
| 285 | 20 | 45 | - | - | - | - |
| 290 | 20 | 45 | - | - | - | - |
| 295 | 20 | 45 | - | - | - | - |
| 300 | 20 | 45 | - | - | - | - |
| 305 | 20 | 45 | - | - | - | - |
| 310 | 20 | 45 | - | - | - | - |
| 315 | 20 | 45 | - | - | - | - |
| 320 | 30 | 45 | - | - | - | - |
| 325 | 30 | 45 | - | - | - | - |
| 330 | 30 | 45 | - | - | - | - |
| 335 | 30 | 45 | - | - | - | - |
| 340 | 30 | 50 | - | - | - | - |
| 345 | 30 | 50 | - | - | - | - |
| 350 | 30 | 50 | - | - | - | - |
| 355 | 30 | 50 | - | - | - | - |

| Design Steel Temperature 600°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 15 | 15 | 20 | 30 | 35 | 45 |
| 55 | 15 | 15 | 30 | 30 | 40 | 50 |
| 60 | 15 | 15 | 30 | 35 | 45 | 50 |
| 65 | 15 | 15 | 30 | 35 | 45 | - |
| 70 | 15 | 15 | 30 | 40 | 45 | - |
| 75 | 15 | 15 | 30 | 40 | 50 | - |
| 80 | 15 | 15 | 30 | 40 | - | - |
| 85 | 15 | 20 | 30 | 45 | - | - |
| 90 | 15 | 20 | 35 | 45 | - | - |
| 95 | 15 | 20 | 35 | 45 | - | - |
| 100 | 15 | 30 | 35 | 45 | - | - |
| 105 | 15 | 30 | 40 | 50 | - | - |
| 110 | 15 | 30 | 40 | 50 | - | - |
| 115 | 15 | 30 | 40 | 50 | - | - |
| 120 | 15 | 30 | 40 | - | - | - |
| 125 | 15 | 30 | 40 | - | - | - |
| 130 | 15 | 30 | 40 | - | - | - |
| 135 | 15 | 30 | 45 | - | - | - |
| 140 | 15 | 30 | 45 | - | - | - |
| 145 | 15 | 30 | 45 | - | - | - |
| 150 | 15 | 30 | 45 | - | - | - |
| 155 | 15 | 30 | 45 | - | - | - |
| 160 | 15 | 30 | 45 | - | - | - |
| 165 | 15 | 30 | 45 | - | - | - |
| 170 | 15 | 35 | 45 | - | - | - |
| 175 | 15 | 35 | 45 | - | - | - |
| 180 | 15 | 35 | 45 | - | - | - |
| 185 | 15 | 35 | 45 | - | - | - |
| 190 | 15 | 35 | 50 | - | - | - |
| 195 | 15 | 35 | 50 | - | - | - |
| 200 | 15 | 40 | 50 | - | - | - |
| 205 | 15 | 40 | 50 | - | - | - |
| 210 | 15 | 40 | 50 | - | - | - |
| 215 | 15 | 40 | 50 | - | - | - |
| 220 | 15 | 40 | - | - | - | - |
| 225 | 20 | 40 | - | - | - | - |
| 230 | 20 | 40 | - | - | - | - |

| Design Steel Temperature 600°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 20 | 40 | - | - | - | - |
| 240 | 20 | 40 | - | - | - | - |
| 245 | 20 | 40 | - | - | - | - |
| 250 | 20 | 40 | - | - | - | - |
| 255 | 20 | 40 | - | - | - | - |
| 260 | 20 | 45 | - | - | - | - |
| 265 | 20 | 45 | - | - | - | - |
| 270 | 20 | 45 | - | - | - | - |
| 275 | 20 | 45 | - | - | - | - |
| 280 | 20 | 45 | - | - | - | - |
| 285 | 20 | 45 | - | - | - | - |
| 290 | 20 | 45 | - | - | - | - |
| 295 | 20 | 45 | - | - | - | - |
| 300 | 20 | 45 | - | - | - | - |
| 305 | 20 | 45 | - | - | - | - |
| 310 | 20 | 45 | - | - | - | - |
| 315 | 20 | 45 | - | - | - | - |
| 320 | 20 | 45 | - | - | - | - |
| 325 | 20 | 45 | - | - | - | - |
| 330 | 20 | 45 | - | - | - | - |
| 335 | 20 | 45 | - | - | - | - |
| 340 | 20 | 45 | - | - | - | - |
| 345 | 20 | 45 | - | - | - | - |
| 350 | 20 | 45 | - | - | - | - |
| 355 | 30 | 45 | - | - | - | - |

| Design Steel Temperature 650°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 15 | 15 | 15 | 30 | 30 | 40 |
| 55 | 15 | 15 | 15 | 30 | 35 | 45 |
| 60 | 15 | 15 | 20 | 30 | 40 | 45 |
| 65 | 15 | 15 | 30 | 30 | 40 | 50 |
| 70 | 15 | 15 | 30 | 35 | 45 | - |
| 75 | 15 | 15 | 30 | 35 | 45 | - |
| 80 | 15 | 15 | 30 | 40 | 50 | - |
| 85 | 15 | 15 | 30 | 40 | 50 | - |
| 90 | 15 | 15 | 30 | 45 | - | - |
| 95 | 15 | 20 | 30 | 45 | - | - |
| 100 | 15 | 20 | 35 | 45 | - | - |
| 105 | 15 | 20 | 35 | 45 | - | - |
| 110 | 15 | 20 | 35 | 45 | - | - |
| 115 | 15 | 30 | 40 | 45 | - | - |
| 120 | 15 | 30 | 40 | 50 | - | - |
| 125 | 15 | 30 | 40 | 50 | - | - |
| 130 | 15 | 30 | 40 | 50 | - | - |
| 135 | 15 | 30 | 40 | - | - | - |
| 140 | 15 | 30 | 40 | - | - | - |
| 145 | 15 | 30 | 40 | - | - | - |
| 150 | 15 | 30 | 45 | - | - | - |
| 155 | 15 | 30 | 45 | - | - | - |
| 160 | 15 | 30 | 45 | - | - | - |
| 165 | 15 | 30 | 45 | - | - | - |
| 170 | 15 | 30 | 45 | - | - | - |
| 175 | 15 | 30 | 45 | - | - | - |
| 180 | 15 | 30 | 45 | - | - | - |
| 185 | 15 | 30 | 45 | - | - | - |
| 190 | 15 | 30 | 45 | - | - | - |
| 195 | 15 | 35 | 45 | - | - | - |
| 200 | 15 | 35 | 45 | - | - | - |
| 205 | 15 | 35 | 45 | - | - | - |
| 210 | 15 | 35 | 45 | - | - | - |
| 215 | 15 | 35 | 45 | - | - | - |
| 220 | 15 | 35 | 50 | - | - | - |
| 225 | 15 | 40 | 50 | - | - | - |
| 230 | 15 | 40 | 50 | - | - | - |

| Design Steel Temperature 650°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 40 | 50 | - | - | - |
| 240 | 15 | 40 | 50 | - | - | - |
| 245 | 15 | 40 | 50 | - | - | - |
| 250 | 20 | 40 | 50 | - | - | - |
| 255 | 20 | 40 | - | - | - | - |
| 260 | 20 | 40 | - | - | - | - |
| 265 | 20 | 40 | - | - | - | - |
| 270 | 20 | 40 | - | - | - | - |
| 275 | 20 | 40 | - | - | - | - |
| 280 | 20 | 40 | - | - | - | - |
| 285 | 20 | 45 | - | - | - | - |
| 290 | 20 | 45 | - | - | - | - |
| 295 | 20 | 45 | - | - | - | - |
| 300 | 20 | 45 | - | - | - | - |
| 305 | 20 | 45 | - | - | - | - |
| 310 | 20 | 45 | - | - | - | - |
| 315 | 20 | 45 | - | - | - | - |
| 320 | 20 | 45 | - | - | - | - |
| 325 | 20 | 45 | - | - | - | - |
| 330 | 20 | 45 | - | - | - | - |
| 335 | 20 | 45 | - | - | - | - |
| 340 | 20 | 45 | - | - | - | - |
| 345 | 20 | 45 | - | - | - | - |
| 350 | 20 | 45 | - | - | - | - |
| 355 | 20 | 45 | - | - | - | - |

| Design Steel Temperature 700°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 15 | 15 | 15 | 30 | 30 | 35 |
| 55 | 15 | 15 | 15 | 30 | 30 | 40 |
| 60 | 15 | 15 | 15 | 30 | 35 | 45 |
| 65 | 15 | 15 | 20 | 30 | 35 | 45 |
| 70 | 15 | 15 | 20 | 30 | 40 | 45 |
| 75 | 15 | 15 | 30 | 30 | 40 | 50 |
| 80 | 15 | 15 | 30 | 35 | 45 | - |
| 85 | 15 | 15 | 30 | 35 | 45 | - |
| 90 | 15 | 15 | 30 | 40 | 45 | - |
| 95 | 15 | 15 | 30 | 40 | 50 | - |
| 100 | 15 | 15 | 30 | 40 | 50 | - |
| 105 | 15 | 15 | 30 | 40 | - | - |
| 110 | 15 | 20 | 30 | 45 | - | - |
| 115 | 15 | 20 | 30 | 45 | - | - |
| 120 | 15 | 20 | 35 | 45 | - | - |
| 125 | 15 | 20 | 35 | 45 | - | - |
| 130 | 15 | 20 | 35 | 45 | - | - |
| 135 | 15 | 30 | 40 | 45 | - | - |
| 140 | 15 | 30 | 40 | 50 | - | - |
| 145 | 15 | 30 | 40 | 50 | - | - |
| 150 | 15 | 30 | 40 | 50 | - | - |
| 155 | 15 | 30 | 40 | 50 | - | - |
| 160 | 15 | 30 | 40 | - | - | - |
| 165 | 15 | 30 | 40 | - | - | - |
| 170 | 15 | 30 | 40 | - | - | - |
| 175 | 15 | 30 | 40 | - | - | - |
| 180 | 15 | 30 | 45 | - | - | - |
| 185 | 15 | 30 | 45 | - | - | - |
| 190 | 15 | 30 | 45 | - | - | - |
| 195 | 15 | 30 | 45 | - | - | - |
| 200 | 15 | 30 | 45 | - | - | - |
| 205 | 15 | 30 | 45 | - | - | - |
| 210 | 15 | 30 | 45 | - | - | - |
| 215 | 15 | 30 | 45 | - | - | - |
| 220 | 15 | 30 | 45 | - | - | - |
| 225 | 15 | 35 | 45 | - | - | - |
| 230 | 15 | 35 | 45 | - | - | - |

| Design Steel Temperature 700°C | | | | | | |
|-------------------------------------|--------|--------|--------|---------|---------|---------|
| Firetect A 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 | 35 | 45 | - | - | - |
| 240 | 15 | 35 | 45 | - | - | - |
| 245 | 15 | 35 | 45 | - | - | - |
| 250 | 15 | 35 | 45 | - | - | - |
| 255 | 15 | 35 | 45 | - | - | - |
| 260 | 15 | 40 | 45 | - | - | - |
| 265 | 15 | 40 | 50 | - | - | - |
| 270 | 15 | 40 | 50 | - | - | - |
| 275 | 15 | 40 | 50 | - | - | - |
| 280 | 15 | 40 | 50 | - | - | - |
| 285 | 15 | 40 | 50 | - | - | - |
| 290 | 15 | 40 | 50 | - | - | - |
| 295 | 15 | 40 | 50 | - | - | - |
| 300 | 20 | 40 | 50 | - | - | - |
| 305 | 20 | 40 | 50 | - | - | - |
| 310 | 20 | 40 | 50 | - | - | - |
| 315 | 20 | 40 | - | - | - | - |
| 320 | 20 | 40 | - | - | - | - |
| 325 | 20 | 45 | - | - | - | - |
| 330 | 20 | 45 | - | - | - | - |
| 335 | 20 | 45 | - | - | - | - |
| 340 | 20 | 45 | - | - | - | - |
| 345 | 20 | 45 | - | - | - | - |
| 350 | 20 | 45 | - | - | - | - |
| 355 | 20 | 45 | - | - | - | - |