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**Title:**

Assessment report for the determination of the contribution to the fire resistance of structural steel I/H sections by applied protection of board protection system according to EN 13381-4:2013 "Test methods for determining the contribution to the fire resistance of structural members. Part 4: Applied passive protection to steel members.

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**Tested material:**

Fire protective boards reference PROMATECT<sup>®</sup>-XS 2G by Promat

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**File number: 22/32305223**

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**Sponsor:**

PROMAT RESEARCH & TECHNOLOGY CENTRE NV  
Bormstraat 24  
2830 Willebroek, Tiselt  
Belgium.

**Report Date:**

28 October 2022



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This document consists of 56 pages. Page 1.**

## **REQUESTED DOCUMENT**

Assessment report of the ability of double layer board to protect structural steel I/H sections.

Steel sections used in this assessment were protected with fire protective board reference "PROMATECT®-XS 2G".

Everything is supplied and/or fabricated by Promat, as indicated in the technical specifications (see Annex C).

## **DOCUMENT PURPOSE**

Assessment according to EN 13381-4:2013 "Test methods for determining the contribution to the fire resistance of structural members. Part 4: Applied passive protection to steel members."

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  - b. GRAPHS.
  - c. TECHNICAL SPECIFICATIONS PROVIDED BY TEST SPONSOR.

## **1. TEST REPORTS.**

Assessment has been done in accordance with the test results of the following sections:

Report File number	Section lab reference	Type
21796A	SIC-A	HEM 280 (C)
21795A	SIC-E	HEA 200 (C)
21972A	SIC-I	IPE 200 (C)
21794A	SIC-M	IPE 80 (C)
21796A	SIC-B	HEM 280 (C)
21795A	SIC-F	HEA 200 (C)
21795A	SIC-J	IPE 200 (C)
21794A	SIC-N	IPE 80 (C)
21796A	SIC-C	HEM 280 (C)
21796A	SIC-G	HEA 200 (C)
21795A	SIC-K	IPE 200 (C)
21795A	SIC-O-1	IPE 80 (C)
21796A	SIC-D	HEM 280 (C)
21796A	SIC-H	HEA 200 (C)
21796A	SIC-L	IPE 200 (C)
21796A	SIC-P	IPE 80 (C)
21972A	LB-B	IPE 400 (B)
21972A	RB-B	IPE 400 (B)
21998A	LB-A	IPE 400 (B)
21998A	RB-A	IPE 400 (B)

Table 1. Used sections (C: columns, B: Beams)

All tests reports were issued by Warrington Fire.

## **2. TESTED SAMPLES.**

The following information was extracted from the test reports issued by Warrington.

### 2.1. Tested material

- Type: fire protective boards.
- Reference supplied by the test sponsor: PROMATECT®-XS 2G
- Brand: Promat
- Thickness (nominal values): boards of 12,5, 15, 20, and 25 mm.

### 2.2. Sections to protect.

- See each test report.

### 2.3. Application Features.

- Number of layers: 2
- Position columns:
  - o 4-sided boxed protection along the exposed length of the column.
  - o 4 mm gap all around between the steel section and the protective material.
  - o No gap between the first and second layer of protective material.
- Position beams:
  - o 3 sided boxed protection along the exposed length of the beam.
  - o No gap between the steel section and the vertical boards.

- 3-5 mm gap between the steel section and the horizontal boards.
- No gap between the first and second layer of protective material.
- Joints of the first and second layer are staggered.
- Fixing methods:
  - Columns:
    - To the transversal side of adjacent boards of the same layer.
    - With staples
    - c/c distance: 100 mm
  - Beams:
    - Of the first layer vertical boards:
      - To noggins
      - With staples
      - c/c distance: 100 mm
    - Of the second layer vertical boards:
      - To the first layer vertical boards
      - With staples
      - c/c distance: 100 mm
    - Of horizontal boards:
      - To the vertical boards of the same layer
      - With staples
      - c/c distance : 100 mm
    - Noggin
      - Number: 1 layer
      - Vertical in between the flanges of the beam at both sides of the web
      - Centred on the joints between adjacent protective boards of the first protective layer
      - Fixings: wedged between the flanges of the beam, cc distance 1200 mm
      - Dimensions, width: 120 mm; Thickness: 20 mm.
  - Straight staple – material:
    - steel – length 30 mm – width: 5,85 – section: 1,27 x 1,05 mm, to use on board thickness 12,5 mm.
    - steel – length 35 mm – width: 10,5 – section: 1,45 x 1,30 mm, to use on board thickness 15 mm.
    - steel – length 40 mm – width: 10,5 – section: 1,45 x 1,30 mm, to use on board thickness 20 mm.
    - steel – length 50 mm – width: 10,5 – section: 1,45 x 1,30 mm, to use on board thickness 25 mm.

Sampling of the test specimens were carried out by MFPA Leipzig GmbH with identification job No: 3.1/21-368.

The sampling and/or production control was not carried out by the testing laboratory (nor through subcontracting). The obtained information could not be verify by the laboratory and does not fall under responsibility nor under the EN ISO/IEC 17025 accreditation scope of laboratory.

### **3. ASSESSMENT PROCEDURE.**

The assessment has been carried out adopting issue E.5 "Numerical Regression Analysis" of EN 13381-4:2013.

### **4. OBTAINED RESULTS.**

Figures and tables of section temperatures can be verified at their respective test reports. All thicknesses indicated in tables are referred to intumescent product thicknesses only. The sections used for assessment have been:

Section ref.	Section Factor (m <sup>-1</sup> )	Nominal Thickness of protection system [mm]
LB-B	124	45
RB-B	126	45
LB-A	124	25
RB-A	126	25

Table 2. Loaded beams Vs Reference beams.

Section ref.	Section Factor (m <sup>-1</sup> )	Nominal Thickness of protection system [mm]
SIC-A	50	25
SIC-E	165	25
SIC-I	228	25
SIC-M	325	25
SIC-B	50	30
SIC-F	165	30
SIC-J	223	30
SIC-N	325	30
SIC-C	50	40
SIC-G	163	40
SIC-K	227	40
SIC-O-1	322	40
SIC-D	49	45
SIC-H	164	45
SIC-L	226	45
SIC-P	322	45

Table 3. Short Columns.

Section ref	Section Factor (m <sup>-1</sup> )	Nominal Thickness [mm]	300°C (min)	350°C (min)	400°C (min)	450°C (min)	500°C (min)
LB-B	124	45	143	150	156	162	168
RB-B	126	45	106	111	116	120	125
LB-A	124	25	79	86	92	97	103
RB-A	126	25	76	79	82	85	88

Table 4.1 Test results (I) – characteristic temperature – Loaded Beams.

Section ref	Section Factor (m <sup>-1</sup> )	Nominal Thickness [mm]	550°C (min)	600°C (min)	650°C (min)	700°C (min)	750°C (min)
LB-B	124	45	174	179	182	184	184
RB-B	126	45	128	132	136	140	143
LB-A	124	25	109	115	118	120	122
RB-A	126	25	90	92	93	95	96

Table 4.2 Test results (II) – characteristic temperature – Loaded Beams.

Section ref	Section Factor (m <sup>-1</sup> )	Nominal Thickness [mm]	300°C (min)	350°C (min)	400°C (min)	450°C (min)	500°C (min)
SIC-A	50	25	115	130	145	160	176
SIC-E	165	25	73	80	88	96	104
SIC-I	228	25	67	72	78	84	91
SIC-M	325	25	59	63	67	72	77
SIC-B	50	30	127	143	161	179	197
SIC-F	165	30	90	98	107	116	125
SIC-J	223	30	83	89	96	103	111
SIC-N	325	30	74	78	83	88	93
SIC-C	50	40	182	200	217	232	246
SIC-G	163	40	125	134	144	155	166
SIC-K	227	40	118	126	134	142	151
SIC-O-1	322	40	104	110	115	121	128
SIC-D	49	45	195	212	226	238	251
SIC-H	164	45	144	155	167	178	189
SIC-L	226	45	129	137	145	154	164
SIC-P	322	45	124	130	136	143	151

Table 5.1 Test results (I) – mean temperature – Short Columns.

Section ref	Section Factor (m <sup>-1</sup> )	Nominal Thickness [mm]	550°C (min)	600°C (min)	650°C (min)	700 °C (min)	750 °C (min)
SIC-A	50	25	191	206	219	233	250
SIC-E	165	25	113	123	132	143	156
SIC-I	228	25	98	106	116	126	138
SIC-M	325	25	83	89	96	104	114
SIC-B	50	30	215	233	248	261	275
SIC-F	165	30	135	143	158	171	187
SIC-J	223	30	119	128	138	149	163
SIC-N	325	30	99	105	112	120	127
SIC-C	50	40	257	268	277	285	289
SIC-G	163	40	177	185	192	196	198
SIC-K	227	40	161	171	182	189	194
SIC-O-1	322	40	135	142	150	159	169
SIC-D	49	45	264	277	292	308	326
SIC-H	164	45	199	209	218	226	230
SIC-L	226	45	171	177	182	188	194
SIC-P	322	45	159	167	176	185	196

Table 5.2 Test results (II) – mean temperature – Short Columns.

## 5. ASSESSED PERFORMANCE.

Correction factors have been calculated using corrected times to reach each of the design temperatures using equations D.1 and D2 of EN 13381-4:2013.

### 5.1 Data Correction.

Design Temperature (°C)	Time to reach temperature (min)			Correction factor for stickability
	Loaded	Ref	Corrected time for Ref	
300	143	106	107,28	1,000
350	150	111	112,34	1,000
400	156	116	117,40	1,000
450	162	120	121,45	1,000
500	168	125	126,51	1,000
550	174	128	129,54	1,000
600	179	132	133,59	1,000
650	182	136	137,64	1,000
700	184	140	141,69	1,000
750	184	143	144,73	1,000

Table 6.1 Data for data correction Loaded Beam Vs Ref beam (max thickness)

Design Temperature (°C)	Time to reach temperature (min)			Correction factor for stickability
	Loaded	Ref	Corrected time for Ref	
300	79,00	76,00	76,92	1,000
350	86,00	79,00	79,95	1,000
400	92,00	82,00	82,99	1,000
450	97,00	85,00	86,03	1,000
500	103,00	88,00	89,06	1,000
550	109,00	90,00	91,09	1,000
600	115,00	92,00	93,11	1,000
650	118,00	93,00	94,12	1,000
700	120,00	95,00	96,15	1,000
750	122,00	96,00	97,16	1,000

Table 6.2 Data for data correction Loaded Beam Vs Ref beam (min thickness)

Correction factor for stickability	300°C (min)	350°C (min)	400°C (min)	450°C (min)	500°C (min)	550°C (min)	600°C (min)	650°C (min)	700 °C (min)	750 °C (min)
<b>Kmax</b>	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
<b>Kmin</b>	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Table 7. Summary of correction factors for stickability.

The correction factor for short sections is calculated by linear interpolation using the equation:

$$k_i = \left[ \frac{k_{max} - k_{min}}{d_{max} - d_{min}} \right] (d_i - d_{min}) + k_{min}$$



Where:

- $k_i$  is the correction factor for the short section at thickness  $d_i$ .
- $k_{max}$  is the correction factor at maximum protection thickness.
- $k_{min}$  is the correction factor at minimum protection thickness.
- $d_i$  is the protection thickness of the short section in mm.
- $d_{min}$  is the minimum protection thickness of the loaded or tall section in mm.
- $d_{max}$  is the maximum protection thickness of the loaded or tall section in mm.

Nominal Thickness [mm]	Section ref	Section Factor ( $m^{-1}$ )	300°C (min)	350°C (min)	400°C (min)	450°C (min)	500°C (min)
45	SIC-D	49	195	212	226	238	251
40	SIC-C	50	182	200	217	232	246
30	SIC-B	50	127	143	161	179	197
25	SIC-A	50	115	130	145	160	176
40	SIC-G	163	125	134	144	155	166
45	SIC-H	164	144	155	167	178	189
25	SIC-E	165	73	80	88	96	104
30	SIC-F	165	90	98	107	116	125
30	SIC-J	223	83	89	96	103	111
45	SIC-L	226	129	137	145	154	164
40	SIC-K	227	118	126	134	142	151
25	SIC-I	228	67	72	78	84	91
40	SIC-O-1	322	104	110	115	121	128
45	SIC-P	322	124	130	136	143	151
25	SIC-M	325	59	63	67	72	77
30	SIC-N	325	74	78	83	88	93

Table 8.1 Corrected times Columns (I).

Nominal Thickness [mm]	Section ref	Section Factor ( $m^{-1}$ )	550°C (min)	600°C (min)	650°C (min)	700°C (min)	750°C (min)
45	SIC-D	49	264	277	292	308	326
40	SIC-C	50	257	268	277	285	289
30	SIC-B	50	215	233	248	261	275
25	SIC-A	50	191	206	219	233	250
40	SIC-G	163	177	185	192	196	198
45	SIC-H	164	199	209	218	226	230
25	SIC-E	165	113	123	132	143	156
30	SIC-F	165	135	143	158	171	187
30	SIC-J	223	119	128	138	149	163
45	SIC-L	226	171	177	182	188	194
40	SIC-K	227	161	171	182	189	194
25	SIC-I	228	98	106	116	126	138
40	SIC-O-1	322	135	142	150	159	169
45	SIC-P	322	159	167	176	185	196
25	SIC-M	325	83	89	96	104	114
30	SIC-N	325	99	105	112	120	127

Table 8.2 Corrected times Columns (II).

## 5.2 Obtained formula.

The multiple linear numerical regression analysis is conducted using the formula:

$$t = a_0 + a_1 d_p + a_2 \frac{d_p}{A_m/V} + a_3 \theta_a + a_4 d_p \theta_a + a_5 d_p \frac{\theta_a}{A_m/V} + a_6 \frac{\theta_a}{A_m/V} + a_7 \frac{1}{A_m/V}$$

Where

- $t$  is the time to design temperature (minutes)
- $d_p$  is the thickness of protection material (mm)
- $A_m/V$  is the measured section factor ( $m^{-1}$ )
- $a_0$  to  $a_7$  are the regression coefficients
- $\theta_a$  is the steel temperature ( $^{\circ}C$ )

$a_0$	$a_1$	$a_2$	$a_3$	$a_4$	$a_5$	$a_6$	$a_7$
-56,873	2,787	131,588	0,064	0,002	-0,227	16,126	-3231,252

Table 9. Regression Coefficients for columns and beams.

5.3. Criteria for acceptability (acc. clause 13.5 of EN 13381-4:2013):

Design Temperature ( $^{\circ}C$ )	K factor	Criterion A (%)	Criterion B (%)	Criterion C (%)
300	0,9776	0,09	-0,02	0,30
350	0,9776	0,09	-0,02	0,30
400	0,9776	0,09	-0,02	0,30
450	0,9776	0,09	-0,02	0,30
500	0,9776	0,09	-0,02	0,30
550	0,9776	0,09	-0,02	0,30
600	0,9776	0,09	-0,02	0,30
650	0,9776	0,09	-0,02	0,30
700	0,9776	0,09	-0,02	0,30
750	0,9776	0,09	-0,02	0,30

Table 10. Acceptability criteria.

According to table 8, the following statements can be inferred:

- Criterion a: For each short section the predicted time to reach the design temperature does not exceed the corrected time by more than 15%. In table 8, the highest value of the difference between predicted and corrected time is shown.
- Criterion b: The mean value of all percentage differences is less than zero. In table 8, the mean value is indicated
- Criterion c: A maximum of 30 % of individual values of all percentage differences as calculated in a) are more than zero. In table 8, the % of values higher than zero is indicated.
- Criterion d: clauses 1 to 6 indicated in clause 13.5 of EN 13381-4:2013 are satisfied, as can be observed in the tables indicated in the annex.

Assessment results are indicated in annex A.

As indicated in clause 1 "Scope" of EN 13381-4:2013 "Results from analysis of I or H sections are directly applicable to angles, channels and T-sections for the same section factor, whether used as individual elements or as bracing."

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurements of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

This document does not represent any type approval or certification of the product.

**6. LIMITS OF THE APPLICABILITY (according to clause 15 of EN 13381-4:2013).**

Feature	Tested value	Permitted extensions
Type of section	I/H section	Results from analysis are directly applicable to I or H sections, angles, channels and T-sections for the same section factor, whether used as individual elements or as bracing.
Thickness of fire protection material (columns)	Minimum thickness tested on a short unloaded column: 25 mm. Maximum thickness tested on a loaded beam: 45 mm.	Minimum allowed thickness: 25 mm (limited to the minimum available thickness of the boards). Maximum allowed thickness: 45 mm (limited to the maximum available thickness of the boards).
Section factor (columns)	Minimum tested section factor on minimum section column: 49 m <sup>-1</sup> . Maximum tested section factor: 325 m <sup>-1</sup> .	Minimum allowed section factor: 45 m <sup>-1</sup> (49 m <sup>-1</sup> less 10%). For section factors below the extended minimum, the same protection thickness as that applied to the extended minimum section factor shall be applied. Maximum allowed section factor: 358 m <sup>-1</sup> (325 m <sup>-1</sup> plus 10%).
Thickness of fire protection material (beams)	Minimum thickness tested on a short loaded beam: 25 mm. Maximum thickness tested on a loaded beam: 45 mm.	Minimum allowed thickness: 25 mm (limited to the minimum available thickness of the boards) Maximum allowed thickness: 45 mm (limited to the maximum available thickness of the boards).
Section factor (beams)	Minimum tested section factor on minimum section column: 49 m <sup>-1</sup> . Maximum tested section factor: 325 m <sup>-1</sup> .	Minimum allowed section factor: 49 m <sup>-1</sup> . For section factors below the extended minimum the same protection thickness as that applied to the extended minimum section factor shall be applied. Maximum allowed section factor: 358 m <sup>-1</sup> (325 m <sup>-1</sup> plus 10%)
Type of steel	See test reports and /or clause 2 of current report.	The results of the assessment are applicable to all other grades of steel to that tested and as given in EN 10025-1 as specified in 6.1 of the test standard and with the limitations given therein. The results of the assessment may also be applicable to fabricated sections.
Maximum beam web depth	See test reports and/or clause 2 of current report	It shall be limited to the web depth of the loaded beam plus 50%.
Maximum depth of a column	See test reports and / or clause 2 of current report	It shall be limited to the depth of the loaded beam plus 100%. This is subject to a maximum permitted depth of 600 mm for boxed fire protection systems.
Distance of boards	See test reports and/or clause 2 of current report	Tested distance -5 mm to + 50 mm with no change of fixing
Fixing method	See test reports and /or clause 2 of current report	It is confined to the method used for the test specimens since it may not be suitable for other situations. The suitability of the tested fixing system for different situations shall be demonstrated by appropriate testing.



Digitally signed by  
Daniel Sangorin Burrueco



Digitally signed by  
Albert Ger Castillo

Fire Resistance Technician      Fire Laboratory Responsible  
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We would be very grateful if you would send us any comment you consider appropriate, addressing either to the signatory of this document or to the Applus+ Quality Director, to the direction [satisfaccion.cliente@appluscorp.com](mailto:satisfaccion.cliente@appluscorp.com)

**7.- ANNEXES:**

A.- TABLES OF FIRE RESISTANCE

B.- TECHNICAL SPECIFICATIONS PROVIDED BY THE TEST SPONSOR

Bouwen met Staal  
BRAWVESTAMAT

**A.- TABLES OF FIRE RESISTANCE**

Extrapolated values (according to clause 6 of the current report) have been included.

Bouwen met Staal  
BRAWVESTAMAT

Columns - PROMATECT®-XS 2G - Table for 300°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	27,5	30	32,5	37,5	40
50	25	25	25	25	25	25	25	30	32,5	35	40	45
55	25	25	25	25	25	25	27,5	30	32,5	37,5	40	45
60	25	25	25	25	25	25	27,5	32,5	35	37,5	45	45
65	25	25	25	25	25	25	30	32,5	35	40	45	
70	25	25	25	25	25	27,5	30	32,5	37,5	40	45	
75	25	25	25	25	25	27,5	30	35	37,5	45	45	
80	25	25	25	25	25	27,5	32,5	35	40	45	45	
85	25	25	25	25	25	27,5	32,5	35	40	45		
90	25	25	25	25	25	30	32,5	37,5	40	45		
95	25	25	25	25	25	30	32,5	37,5	40	45		
100	25	25	25	25	25	30	32,5	37,5	45	45		
105	25	25	25	25	27,5	30	35	37,5	45	45		
110	25	25	25	25	27,5	30	35	37,5	45	45		
115	25	25	25	25	27,5	30	35	40	45			
120	25	25	25	25	27,5	32,5	35	40	45			
125	25	25	25	25	27,5	32,5	35	40	45			
130	25	25	25	25	27,5	32,5	35	40	45			
135	25	25	25	25	27,5	32,5	35	40	45			
140	25	25	25	25	27,5	32,5	37,5	40	45			
145	25	25	25	25	27,5	32,5	37,5	40	45			
150	25	25	25	25	30	32,5	37,5	40	45			
155	25	25	25	25	30	32,5	37,5	40	45			
160	25	25	25	25	30	32,5	37,5	45	45			
165	25	25	25	25	30	32,5	37,5	45	45			
170	25	25	25	25	30	32,5	37,5	45	45			
175	25	25	25	25	30	35	37,5	45	45			
180	25	25	25	25	30	35	37,5	45				
185	25	25	25	25	30	35	37,5	45				
190	25	25	25	25	30	35	37,5	45				
195	25	25	25	25	30	35	37,5	45				
200	25	25	25	25	30	35	37,5	45				
205	25	25	25	27,5	30	35	40	45				
210	25	25	25	27,5	30	35	40	45				
215	25	25	25	27,5	30	35	40	45				
220	25	25	25	27,5	30	35	40	45				
225	25	25	25	27,5	30	35	40	45				
230	25	25	25	27,5	30	35	40	45				
235	25	25	25	27,5	30	35	40	45				
240	25	25	25	27,5	30	35	40	45				
245	25	25	25	27,5	32,5	35	40	45				
250	25	25	25	27,5	32,5	35	40	45				
255	25	25	25	27,5	32,5	35	40	45				
260	25	25	25	27,5	32,5	35	40	45				
265	25	25	25	27,5	32,5	35	40	45				
270	25	25	25	27,5	32,5	35	40	45				
275	25	25	25	27,5	32,5	35	40	45				
280	25	25	25	27,5	32,5	35	40	45				
285	25	25	25	27,5	32,5	35	40	45				

290	25	25	25	27,5	32,5	35	40	45				
295	25	25	25	27,5	32,5	37,5	40	45				
300	25	25	25	27,5	32,5	37,5	40	45				
305	25	25	25	27,5	32,5	37,5	40	45				
310	25	25	25	27,5	32,5	37,5	40	45				
315	25	25	25	27,5	32,5	37,5	40	45				
320	25	25	25	27,5	32,5	37,5	40	45				
325	25	25	25	27,5	32,5	37,5	40	45				
330	25	25	25	27,5	32,5	37,5	40	45				
335	25	25	25	27,5	32,5	37,5	40	45				
340	25	25	25	27,5	32,5	37,5	40	45				
345	25	25	25	27,5	32,5	37,5	40	45				
350	25	25	25	27,5	32,5	37,5	40	45				
355	25	25	25	27,5	32,5	37,5	40	45				
358	25	25	25	27,5	32,5	37,5	45	45				

Bouwen met  
BRAWVESTAMMA



Columns - PROMATECT®-XS 2G - Table for 350°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	27,5	30	32,5	37,5
50	25	25	25	25	25	25	25	25	30	32,5	35	40
55	25	25	25	25	25	25	25	27,5	30	35	37,5	40
60	25	25	25	25	25	25	25	27,5	32,5	35	40	45
65	25	25	25	25	25	25	25	30	32,5	37,5	40	45
70	25	25	25	25	25	25	27,5	30	35	37,5	45	45
75	25	25	25	25	25	25	27,5	32,5	35	40	45	45
80	25	25	25	25	25	25	27,5	32,5	35	40	45	
85	25	25	25	25	25	25	30	32,5	37,5	40	45	
90	25	25	25	25	25	25	30	32,5	37,5	45	45	
95	25	25	25	25	25	27,5	30	35	37,5	45	45	
100	25	25	25	25	25	27,5	30	35	37,5	45		
105	25	25	25	25	25	27,5	32,5	35	40	45		
110	25	25	25	25	25	27,5	32,5	35	40	45		
115	25	25	25	25	25	27,5	32,5	37,5	40	45		
120	25	25	25	25	25	30	32,5	37,5	40	45		
125	25	25	25	25	25	30	32,5	37,5	40	45		
130	25	25	25	25	25	30	32,5	37,5	45	45		
135	25	25	25	25	25	30	32,5	37,5	45	45		
140	25	25	25	25	25	30	35	37,5	45	45		
145	25	25	25	25	25	30	35	37,5	45			
150	25	25	25	25	27,5	30	35	37,5	45			
155	25	25	25	25	27,5	30	35	40	45			
160	25	25	25	25	27,5	30	35	40	45			
165	25	25	25	25	27,5	30	35	40	45			
170	25	25	25	25	27,5	32,5	35	40	45			
175	25	25	25	25	27,5	32,5	35	40	45			
180	25	25	25	25	27,5	32,5	35	40	45			
185	25	25	25	25	27,5	32,5	35	40	45			
190	25	25	25	25	27,5	32,5	35	40	45			
195	25	25	25	25	27,5	32,5	37,5	40	45			
200	25	25	25	25	27,5	32,5	37,5	40	45			
205	25	25	25	25	27,5	32,5	37,5	40	45			
210	25	25	25	25	27,5	32,5	37,5	40	45			
215	25	25	25	25	27,5	32,5	37,5	40	45			
220	25	25	25	25	27,5	32,5	37,5	40	45			
225	25	25	25	25	30	32,5	37,5	45	45			
230	25	25	25	25	30	32,5	37,5	45	45			
235	25	25	25	25	30	32,5	37,5	45	45			
240	25	25	25	25	30	32,5	37,5	45	45			
245	25	25	25	25	30	32,5	37,5	45	45			
250	25	25	25	25	30	32,5	37,5	45	45			
255	25	25	25	25	30	32,5	37,5	45	45			
260	25	25	25	25	30	32,5	37,5	45				
265	25	25	25	25	30	32,5	37,5	45				
270	25	25	25	25	30	35	37,5	45				
275	25	25	25	25	30	35	37,5	45				
280	25	25	25	25	30	35	37,5	45				
285	25	25	25	25	30	35	37,5	45				

290	25	25	25	25	30	35	37,5	45				
295	25	25	25	25	30	35	37,5	45				
300	25	25	25	25	30	35	37,5	45				
305	25	25	25	25	30	35	37,5	45				
310	25	25	25	25	30	35	37,5	45				
315	25	25	25	25	30	35	37,5	45				
320	25	25	25	25	30	35	37,5	45				
325	25	25	25	25	30	35	40	45				
330	25	25	25	25	30	35	40	45				
335	25	25	25	25	30	35	40	45				
340	25	25	25	25	30	35	40	45				
345	25	25	25	25	30	35	40	45				
350	25	25	25	25	30	35	40	45				
355	25	25	25	27,5	30	35	40	45				
358	25	25	25	27,5	30	35	40	45				

Bouwen met  
BRAWVESTAMMA

Columns - PROMATECT®-XS 2G - Table for 400°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	25	27,5	30	32,5
50	25	25	25	25	25	25	25	25	25	27,5	32,5	35
55	25	25	25	25	25	25	25	25	27,5	30	35	37,5
60	25	25	25	25	25	25	25	25	27,5	32,5	35	40
65	25	25	25	25	25	25	25	27,5	30	32,5	37,5	40
70	25	25	25	25	25	25	25	27,5	30	35	37,5	45
75	25	25	25	25	25	25	25	27,5	32,5	35	40	45
80	25	25	25	25	25	25	25	30	32,5	37,5	40	45
85	25	25	25	25	25	25	27,5	30	35	37,5	45	45
90	25	25	25	25	25	25	27,5	30	35	37,5	45	
95	25	25	25	25	25	25	27,5	32,5	35	40	45	
100	25	25	25	25	25	25	27,5	32,5	35	40	45	
105	25	25	25	25	25	25	30	32,5	37,5	40	45	
110	25	25	25	25	25	25	30	32,5	37,5	40	45	
115	25	25	25	25	25	25	30	35	37,5	45	45	
120	25	25	25	25	25	27,5	30	35	37,5	45	45	
125	25	25	25	25	25	27,5	30	35	37,5	45		
130	25	25	25	25	25	27,5	30	35	40	45		
135	25	25	25	25	25	27,5	32,5	35	40	45		
140	25	25	25	25	25	27,5	32,5	35	40	45		
145	25	25	25	25	25	27,5	32,5	35	40	45		
150	25	25	25	25	25	27,5	32,5	35	40	45		
155	25	25	25	25	25	27,5	32,5	37,5	40	45		
160	25	25	25	25	25	27,5	32,5	37,5	40	45		
165	25	25	25	25	25	30	32,5	37,5	40	45		
170	25	25	25	25	25	30	32,5	37,5	45	45		
175	25	25	25	25	25	30	32,5	37,5	45	45		
180	25	25	25	25	25	30	32,5	37,5	45	45		
185	25	25	25	25	25	30	32,5	37,5	45	45		
190	25	25	25	25	25	30	35	37,5	45	45		
195	25	25	25	25	25	30	35	37,5	45			
200	25	25	25	25	25	30	35	37,5	45			
205	25	25	25	25	25	30	35	37,5	45			
210	25	25	25	25	27,5	30	35	37,5	45			
215	25	25	25	25	27,5	30	35	40	45			
220	25	25	25	25	27,5	30	35	40	45			
225	25	25	25	25	27,5	30	35	40	45			
230	25	25	25	25	27,5	30	35	40	45			
235	25	25	25	25	27,5	30	35	40	45			
240	25	25	25	25	27,5	30	35	40	45			
245	25	25	25	25	27,5	32,5	35	40	45			
250	25	25	25	25	27,5	32,5	35	40	45			
255	25	25	25	25	27,5	32,5	35	40	45			
260	25	25	25	25	27,5	32,5	35	40	45			
265	25	25	25	25	27,5	32,5	35	40	45			
270	25	25	25	25	27,5	32,5	35	40	45			
275	25	25	25	25	27,5	32,5	35	40	45			
280	25	25	25	25	27,5	32,5	35	40	45			
285	25	25	25	25	27,5	32,5	35	40	45			

290	25	25	25	25	27,5	32,5	35	40	45			
295	25	25	25	25	27,5	32,5	37,5	40	45			
300	25	25	25	25	27,5	32,5	37,5	40	45			
305	25	25	25	25	27,5	32,5	37,5	40	45			
310	25	25	25	25	27,5	32,5	37,5	40	45			
315	25	25	25	25	27,5	32,5	37,5	40	45			
320	25	25	25	25	27,5	32,5	37,5	40	45			
325	25	25	25	25	27,5	32,5	37,5	40	45			
330	25	25	25	25	27,5	32,5	37,5	40	45			
335	25	25	25	25	27,5	32,5	37,5	40	45			
340	25	25	25	25	27,5	32,5	37,5	40	45			
345	25	25	25	25	27,5	32,5	37,5	40	45			
350	25	25	25	25	27,5	32,5	37,5	40	45			
355	25	25	25	25	27,5	32,5	37,5	45	45			
358	25	25	25	25	27,5	32,5	37,5	45	45			

Bouwen met  
BRAWVESTAMPA

Columns - PROMATECT®-XS 2G - Table for 450°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	25	25	25	30
50	25	25	25	25	25	25	25	25	25	25	27,5	32,5
55	25	25	25	25	25	25	25	25	25	27,5	30	35
60	25	25	25	25	25	25	25	25	25	30	32,5	37,5
65	25	25	25	25	25	25	25	25	27,5	30	35	37,5
70	25	25	25	25	25	25	25	25	27,5	32,5	35	40
75	25	25	25	25	25	25	25	25	30	32,5	37,5	40
80	25	25	25	25	25	25	25	27,5	30	35	37,5	45
85	25	25	25	25	25	25	25	27,5	30	35	40	45
90	25	25	25	25	25	25	25	27,5	32,5	35	40	45
95	25	25	25	25	25	25	25	30	32,5	37,5	40	45
100	25	25	25	25	25	25	25	30	32,5	37,5	45	45
105	25	25	25	25	25	25	25	30	35	37,5	45	45
110	25	25	25	25	25	25	27,5	30	35	37,5	45	
115	25	25	25	25	25	25	27,5	30	35	40	45	
120	25	25	25	25	25	25	27,5	32,5	35	40	45	
125	25	25	25	25	25	25	27,5	32,5	35	40	45	
130	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
135	25	25	25	25	25	25	30	32,5	37,5	40	45	
140	25	25	25	25	25	25	30	32,5	37,5	45	45	
145	25	25	25	25	25	25	30	32,5	37,5	45	45	
150	25	25	25	25	25	25	30	35	37,5	45	45	
155	25	25	25	25	25	25	30	35	37,5	45		
160	25	25	25	25	25	27,5	30	35	37,5	45		
165	25	25	25	25	25	27,5	30	35	40	45		
170	25	25	25	25	25	27,5	30	35	40	45		
175	25	25	25	25	25	27,5	30	35	40	45		
180	25	25	25	25	25	27,5	32,5	35	40	45		
185	25	25	25	25	25	27,5	32,5	35	40	45		
190	25	25	25	25	25	27,5	32,5	35	40	45		
195	25	25	25	25	25	27,5	32,5	35	40	45		
200	25	25	25	25	25	27,5	32,5	35	40	45		
205	25	25	25	25	25	27,5	32,5	37,5	40	45		
210	25	25	25	25	25	27,5	32,5	37,5	40	45		
215	25	25	25	25	25	27,5	32,5	37,5	40	45		
220	25	25	25	25	25	27,5	32,5	37,5	40	45		
225	25	25	25	25	25	27,5	32,5	37,5	40	45		
230	25	25	25	25	25	30	32,5	37,5	40	45		
235	25	25	25	25	25	30	32,5	37,5	45	45		
240	25	25	25	25	25	30	32,5	37,5	45	45		
245	25	25	25	25	25	30	32,5	37,5	45	45		
250	25	25	25	25	25	30	32,5	37,5	45	45		
255	25	25	25	25	25	30	32,5	37,5	45	45		
260	25	25	25	25	25	30	32,5	37,5	45	45		
265	25	25	25	25	25	30	32,5	37,5	45	45		
270	25	25	25	25	25	30	35	37,5	45	45		
275	25	25	25	25	25	30	35	37,5	45			
280	25	25	25	25	25	30	35	37,5	45			
285	25	25	25	25	25	30	35	37,5	45			

290	25	25	25	25	25	30	35	37,5	45			
295	25	25	25	25	25	30	35	37,5	45			
300	25	25	25	25	25	30	35	37,5	45			
305	25	25	25	25	25	30	35	37,5	45			
310	25	25	25	25	25	30	35	37,5	45			
315	25	25	25	25	25	30	35	37,5	45			
320	25	25	25	25	27,5	30	35	40	45			
325	25	25	25	25	27,5	30	35	40	45			
330	25	25	25	25	27,5	30	35	40	45			
335	25	25	25	25	27,5	30	35	40	45			
340	25	25	25	25	27,5	30	35	40	45			
345	25	25	25	25	27,5	30	35	40	45			
350	25	25	25	25	27,5	30	35	40	45			
355	25	25	25	25	27,5	30	35	40	45			
358	25	25	25	25	27,5	30	35	40	45			

Bouwen met  
BRAWVESTAMPA

Columns - PROMATECT®-XS 2G - Table for 500°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	27,5
55	25	25	25	25	25	25	25	25	25	25	27,5	30
60	25	25	25	25	25	25	25	25	25	25	30	32,5
65	25	25	25	25	25	25	25	25	25	27,5	30	35
70	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
75	25	25	25	25	25	25	25	25	25	30	35	37,5
80	25	25	25	25	25	25	25	25	27,5	30	35	40
85	25	25	25	25	25	25	25	25	27,5	32,5	35	40
90	25	25	25	25	25	25	25	25	30	32,5	37,5	40
95	25	25	25	25	25	25	25	25	30	35	37,5	45
100	25	25	25	25	25	25	25	27,5	30	35	37,5	45
105	25	25	25	25	25	25	25	27,5	32,5	35	40	45
110	25	25	25	25	25	25	25	27,5	32,5	35	40	45
115	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
120	25	25	25	25	25	25	25	30	32,5	37,5	40	45
125	25	25	25	25	25	25	25	30	32,5	37,5	45	45
130	25	25	25	25	25	25	25	30	35	37,5	45	45
135	25	25	25	25	25	25	27,5	30	35	37,5	45	
140	25	25	25	25	25	25	27,5	30	35	40	45	
145	25	25	25	25	25	25	27,5	30	35	40	45	
150	25	25	25	25	25	25	27,5	32,5	35	40	45	
155	25	25	25	25	25	25	27,5	32,5	35	40	45	
160	25	25	25	25	25	25	27,5	32,5	35	40	45	
165	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
170	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
175	25	25	25	25	25	25	30	32,5	37,5	40	45	
180	25	25	25	25	25	25	30	32,5	37,5	45	45	
185	25	25	25	25	25	25	30	32,5	37,5	45	45	
190	25	25	25	25	25	25	30	32,5	37,5	45	45	
195	25	25	25	25	25	25	30	35	37,5	45	45	
200	25	25	25	25	25	25	30	35	37,5	45	45	
205	25	25	25	25	25	25	30	35	37,5	45		
210	25	25	25	25	25	25	30	35	37,5	45		
215	25	25	25	25	25	27,5	30	35	37,5	45		
220	25	25	25	25	25	27,5	30	35	37,5	45		
225	25	25	25	25	25	27,5	30	35	40	45		
230	25	25	25	25	25	27,5	30	35	40	45		
235	25	25	25	25	25	27,5	30	35	40	45		
240	25	25	25	25	25	27,5	30	35	40	45		
245	25	25	25	25	25	27,5	30	35	40	45		
250	25	25	25	25	25	27,5	32,5	35	40	45		
255	25	25	25	25	25	27,5	32,5	35	40	45		
260	25	25	25	25	25	27,5	32,5	35	40	45		
265	25	25	25	25	25	27,5	32,5	35	40	45		
270	25	25	25	25	25	27,5	32,5	35	40	45		
275	25	25	25	25	25	27,5	32,5	35	40	45		
280	25	25	25	25	25	27,5	32,5	35	40	45		
285	25	25	25	25	25	27,5	32,5	35	40	45		

290	25	25	25	25	25	27,5	32,5	37,5	40	45		
295	25	25	25	25	25	27,5	32,5	37,5	40	45		
300	25	25	25	25	25	27,5	32,5	37,5	40	45		
305	25	25	25	25	25	27,5	32,5	37,5	40	45		
310	25	25	25	25	25	27,5	32,5	37,5	40	45		
315	25	25	25	25	25	27,5	32,5	37,5	40	45		
320	25	25	25	25	25	27,5	32,5	37,5	40	45		
325	25	25	25	25	25	27,5	32,5	37,5	40	45		
330	25	25	25	25	25	27,5	32,5	37,5	40	45		
335	25	25	25	25	25	27,5	32,5	37,5	40	45		
340	25	25	25	25	25	30	32,5	37,5	40	45		
345	25	25	25	25	25	30	32,5	37,5	40	45		
350	25	25	25	25	25	30	32,5	37,5	45	45		
355	25	25	25	25	25	30	32,5	37,5	45	45		
358	25	25	25	25	25	30	32,5	37,5	45	45		

Bouwen met  
BRAWVESTAMP



Columns - PROMATECT®-XS 2G - Table for 550°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	27,5
60	25	25	25	25	25	25	25	25	25	25	25	30
65	25	25	25	25	25	25	25	25	25	25	27,5	32,5
70	25	25	25	25	25	25	25	25	25	25	30	32,5
75	25	25	25	25	25	25	25	25	25	27,5	30	35
80	25	25	25	25	25	25	25	25	25	27,5	32,5	35
85	25	25	25	25	25	25	25	25	25	30	32,5	37,5
90	25	25	25	25	25	25	25	25	27,5	30	35	37,5
95	25	25	25	25	25	25	25	25	27,5	30	35	40
100	25	25	25	25	25	25	25	25	27,5	32,5	35	40
105	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
110	25	25	25	25	25	25	25	25	30	32,5	37,5	45
115	25	25	25	25	25	25	25	25	30	35	37,5	45
120	25	25	25	25	25	25	25	27,5	30	35	37,5	45
125	25	25	25	25	25	25	25	27,5	30	35	40	45
130	25	25	25	25	25	25	25	27,5	32,5	35	40	45
135	25	25	25	25	25	25	25	27,5	32,5	35	40	45
140	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
145	25	25	25	25	25	25	25	30	32,5	37,5	40	45
150	25	25	25	25	25	25	25	30	32,5	37,5	45	45
155	25	25	25	25	25	25	25	30	32,5	37,5	45	45
160	25	25	25	25	25	25	25	30	35	37,5	45	45
165	25	25	25	25	25	25	25	30	35	37,5	45	
170	25	25	25	25	25	25	27,5	30	35	37,5	45	
175	25	25	25	25	25	25	27,5	30	35	37,5	45	
180	25	25	25	25	25	25	27,5	30	35	40	45	
185	25	25	25	25	25	25	27,5	30	35	40	45	
190	25	25	25	25	25	25	27,5	32,5	35	40	45	
195	25	25	25	25	25	25	27,5	32,5	35	40	45	
200	25	25	25	25	25	25	27,5	32,5	35	40	45	
205	25	25	25	25	25	25	27,5	32,5	35	40	45	
210	25	25	25	25	25	25	27,5	32,5	35	40	45	
215	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
220	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
225	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
230	25	25	25	25	25	25	30	32,5	37,5	40	45	
235	25	25	25	25	25	25	30	32,5	37,5	40	45	
240	25	25	25	25	25	25	30	32,5	37,5	40	45	
245	25	25	25	25	25	25	30	32,5	37,5	45	45	
250	25	25	25	25	25	25	30	32,5	37,5	45	45	
255	25	25	25	25	25	25	30	32,5	37,5	45	45	
260	25	25	25	25	25	25	30	32,5	37,5	45	45	
265	25	25	25	25	25	25	30	32,5	37,5	45	45	
270	25	25	25	25	25	25	30	35	37,5	45	45	
275	25	25	25	25	25	25	30	35	37,5	45	45	
280	25	25	25	25	25	25	30	35	37,5	45	45	
285	25	25	25	25	25	25	30	35	37,5	45		

290	25	25	25	25	25	25	30	35	37,5	45		
295	25	25	25	25	25	25	30	35	37,5	45		
300	25	25	25	25	25	27,5	30	35	37,5	45		
305	25	25	25	25	25	27,5	30	35	37,5	45		
310	25	25	25	25	25	27,5	30	35	37,5	45		
315	25	25	25	25	25	27,5	30	35	37,5	45		
320	25	25	25	25	25	27,5	30	35	40	45		
325	25	25	25	25	25	27,5	30	35	40	45		
330	25	25	25	25	25	27,5	30	35	40	45		
335	25	25	25	25	25	27,5	30	35	40	45		
340	25	25	25	25	25	27,5	30	35	40	45		
345	25	25	25	25	25	27,5	30	35	40	45		
350	25	25	25	25	25	27,5	30	35	40	45		
355	25	25	25	25	25	27,5	30	35	40	45		
358	25	25	25	25	25	27,5	30	35	40	45		

Bouwen met  
BRAWVESTAMP

Columns - PROMATECT®-XS 2G - Table for 600°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	25
60	25	25	25	25	25	25	25	25	25	25	25	25
65	25	25	25	25	25	25	25	25	25	25	25	27,5
70	25	25	25	25	25	25	25	25	25	25	25	30
75	25	25	25	25	25	25	25	25	25	25	27,5	32,5
80	25	25	25	25	25	25	25	25	25	25	30	32,5
85	25	25	25	25	25	25	25	25	25	25	30	35
90	25	25	25	25	25	25	25	25	25	27,5	32,5	35
95	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
100	25	25	25	25	25	25	25	25	25	30	32,5	37,5
105	25	25	25	25	25	25	25	25	25	30	35	37,5
110	25	25	25	25	25	25	25	25	27,5	30	35	40
115	25	25	25	25	25	25	25	25	27,5	32,5	35	40
120	25	25	25	25	25	25	25	25	27,5	32,5	35	40
125	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
130	25	25	25	25	25	25	25	25	30	32,5	37,5	40
135	25	25	25	25	25	25	25	25	30	32,5	37,5	45
140	25	25	25	25	25	25	25	25	30	35	37,5	45
145	25	25	25	25	25	25	25	27,5	30	35	37,5	45
150	25	25	25	25	25	25	25	27,5	30	35	40	45
155	25	25	25	25	25	25	25	27,5	30	35	40	45
160	25	25	25	25	25	25	25	27,5	32,5	35	40	45
165	25	25	25	25	25	25	25	27,5	32,5	35	40	45
170	25	25	25	25	25	25	25	27,5	32,5	35	40	45
175	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
180	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
185	25	25	25	25	25	25	25	30	32,5	37,5	40	45
190	25	25	25	25	25	25	25	30	32,5	37,5	45	45
195	25	25	25	25	25	25	25	30	32,5	37,5	45	45
200	25	25	25	25	25	25	25	30	32,5	37,5	45	45
205	25	25	25	25	25	25	25	30	35	37,5	45	45
210	25	25	25	25	25	25	25	30	35	37,5	45	45
215	25	25	25	25	25	25	25	30	35	37,5	45	
220	25	25	25	25	25	25	27,5	30	35	37,5	45	
225	25	25	25	25	25	25	27,5	30	35	37,5	45	
230	25	25	25	25	25	25	27,5	30	35	40	45	
235	25	25	25	25	25	25	27,5	30	35	40	45	
240	25	25	25	25	25	25	27,5	30	35	40	45	
245	25	25	25	25	25	25	27,5	30	35	40	45	
250	25	25	25	25	25	25	27,5	32,5	35	40	45	
255	25	25	25	25	25	25	27,5	32,5	35	40	45	
260	25	25	25	25	25	25	27,5	32,5	35	40	45	
265	25	25	25	25	25	25	27,5	32,5	35	40	45	
270	25	25	25	25	25	25	27,5	32,5	35	40	45	
275	25	25	25	25	25	25	27,5	32,5	35	40	45	
280	25	25	25	25	25	25	27,5	32,5	35	40	45	
285	25	25	25	25	25	25	27,5	32,5	35	40	45	

290	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
295	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
300	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
305	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
310	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
315	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
320	25	25	25	25	25	25	30	32,5	37,5	40	45	
325	25	25	25	25	25	25	30	32,5	37,5	40	45	
330	25	25	25	25	25	25	30	32,5	37,5	40	45	
335	25	25	25	25	25	25	30	32,5	37,5	40	45	
340	25	25	25	25	25	25	30	32,5	37,5	40	45	
345	25	25	25	25	25	25	30	32,5	37,5	40	45	
350	25	25	25	25	25	25	30	32,5	37,5	45	45	
355	25	25	25	25	25	25	30	32,5	37,5	45	45	
358	25	25	25	25	25	25	30	32,5	37,5	45	45	

Bouwen met  
BRAWVESTAM

Columns - PROMATECT®-XS 2G - Table for 650°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	25
60	25	25	25	25	25	25	25	25	25	25	25	25
65	25	25	25	25	25	25	25	25	25	25	25	25
70	25	25	25	25	25	25	25	25	25	25	25	27,5
75	25	25	25	25	25	25	25	25	25	25	25	27,5
80	25	25	25	25	25	25	25	25	25	25	25	30
85	25	25	25	25	25	25	25	25	25	25	27,5	32,5
90	25	25	25	25	25	25	25	25	25	25	27,5	32,5
95	25	25	25	25	25	25	25	25	25	25	30	32,5
100	25	25	25	25	25	25	25	25	25	27,5	30	35
105	25	25	25	25	25	25	25	25	25	27,5	32,5	35
110	25	25	25	25	25	25	25	25	25	27,5	32,5	35
115	25	25	25	25	25	25	25	25	25	30	32,5	37,5
120	25	25	25	25	25	25	25	25	25	30	32,5	37,5
125	25	25	25	25	25	25	25	25	25	30	35	37,5
130	25	25	25	25	25	25	25	25	27,5	30	35	37,5
135	25	25	25	25	25	25	25	25	27,5	30	35	40
140	25	25	25	25	25	25	25	25	27,5	32,5	35	40
145	25	25	25	25	25	25	25	25	27,5	32,5	35	40
150	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
155	25	25	25	25	25	25	25	25	30	32,5	37,5	40
160	25	25	25	25	25	25	25	25	30	32,5	37,5	45
165	25	25	25	25	25	25	25	25	30	32,5	37,5	45
170	25	25	25	25	25	25	25	25	30	35	37,5	45
175	25	25	25	25	25	25	25	27,5	30	35	37,5	45
180	25	25	25	25	25	25	25	27,5	30	35	37,5	45
185	25	25	25	25	25	25	25	27,5	30	35	40	45
190	25	25	25	25	25	25	25	27,5	30	35	40	45
195	25	25	25	25	25	25	25	27,5	32,5	35	40	45
200	25	25	25	25	25	25	25	27,5	32,5	35	40	45
205	25	25	25	25	25	25	25	27,5	32,5	35	40	45
210	25	25	25	25	25	25	25	27,5	32,5	35	40	45
215	25	25	25	25	25	25	25	27,5	32,5	35	40	45
220	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
225	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
230	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
235	25	25	25	25	25	25	25	30	32,5	37,5	40	45
240	25	25	25	25	25	25	25	30	32,5	37,5	40	45
245	25	25	25	25	25	25	25	30	32,5	37,5	40	45
250	25	25	25	25	25	25	25	30	32,5	37,5	45	45
255	25	25	25	25	25	25	25	30	32,5	37,5	45	45
260	25	25	25	25	25	25	25	30	32,5	37,5	45	45
265	25	25	25	25	25	25	25	30	32,5	37,5	45	45
270	25	25	25	25	25	25	25	30	35	37,5	45	45
275	25	25	25	25	25	25	25	30	35	37,5	45	45
280	25	25	25	25	25	25	25	30	35	37,5	45	45
285	25	25	25	25	25	25	27,5	30	35	37,5	45	45

290	25	25	25	25	25	25	27,5	30	35	37,5	45	45
295	25	25	25	25	25	25	27,5	30	35	37,5	45	
300	25	25	25	25	25	25	27,5	30	35	37,5	45	
305	25	25	25	25	25	25	27,5	30	35	37,5	45	
310	25	25	25	25	25	25	27,5	30	35	37,5	45	
315	25	25	25	25	25	25	27,5	30	35	40	45	
320	25	25	25	25	25	25	27,5	30	35	40	45	
325	25	25	25	25	25	25	27,5	30	35	40	45	
330	25	25	25	25	25	25	27,5	30	35	40	45	
335	25	25	25	25	25	25	27,5	30	35	40	45	
340	25	25	25	25	25	25	27,5	32,5	35	40	45	
345	25	25	25	25	25	25	27,5	32,5	35	40	45	
350	25	25	25	25	25	25	27,5	32,5	35	40	45	
355	25	25	25	25	25	25	27,5	32,5	35	40	45	
358	25	25	25	25	25	25	27,5	32,5	35	40	45	

Bouwen met  
BRAWVESTAMP

Columns - PROMATECT®-XS 2G - Table for 700°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	25
60	25	25	25	25	25	25	25	25	25	25	25	25
65	25	25	25	25	25	25	25	25	25	25	25	25
70	25	25	25	25	25	25	25	25	25	25	25	25
75	25	25	25	25	25	25	25	25	25	25	25	25
80	25	25	25	25	25	25	25	25	25	25	25	27,5
85	25	25	25	25	25	25	25	25	25	25	25	27,5
90	25	25	25	25	25	25	25	25	25	25	25	30
95	25	25	25	25	25	25	25	25	25	25	27,5	30
100	25	25	25	25	25	25	25	25	25	25	27,5	32,5
105	25	25	25	25	25	25	25	25	25	25	27,5	32,5
110	25	25	25	25	25	25	25	25	25	25	30	32,5
115	25	25	25	25	25	25	25	25	25	25	30	35
120	25	25	25	25	25	25	25	25	25	27,5	30	35
125	25	25	25	25	25	25	25	25	25	27,5	32,5	35
130	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
135	25	25	25	25	25	25	25	25	25	30	32,5	37,5
140	25	25	25	25	25	25	25	25	25	30	32,5	37,5
145	25	25	25	25	25	25	25	25	25	30	35	37,5
150	25	25	25	25	25	25	25	25	25	30	35	37,5
155	25	25	25	25	25	25	25	25	27,5	30	35	37,5
160	25	25	25	25	25	25	25	25	27,5	30	35	40
165	25	25	25	25	25	25	25	25	27,5	32,5	35	40
170	25	25	25	25	25	25	25	25	27,5	32,5	35	40
175	25	25	25	25	25	25	25	25	27,5	32,5	35	40
180	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
185	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
190	25	25	25	25	25	25	25	25	30	32,5	37,5	40
195	25	25	25	25	25	25	25	25	30	32,5	37,5	40
200	25	25	25	25	25	25	25	25	30	32,5	37,5	45
205	25	25	25	25	25	25	25	25	30	32,5	37,5	45
210	25	25	25	25	25	25	25	25	30	35	37,5	45
215	25	25	25	25	25	25	25	25	30	35	37,5	45
220	25	25	25	25	25	25	25	27,5	30	35	37,5	45
225	25	25	25	25	25	25	25	27,5	30	35	37,5	45
230	25	25	25	25	25	25	25	27,5	30	35	37,5	45
235	25	25	25	25	25	25	25	27,5	30	35	37,5	45
240	25	25	25	25	25	25	25	27,5	30	35	40	45
245	25	25	25	25	25	25	25	27,5	30	35	40	45
250	25	25	25	25	25	25	25	27,5	32,5	35	40	45
255	25	25	25	25	25	25	25	27,5	32,5	35	40	45
260	25	25	25	25	25	25	25	27,5	32,5	35	40	45
265	25	25	25	25	25	25	25	27,5	32,5	35	40	45
270	25	25	25	25	25	25	25	27,5	32,5	35	40	45
275	25	25	25	25	25	25	25	27,5	32,5	35	40	45
280	25	25	25	25	25	25	25	27,5	32,5	35	40	45
285	25	25	25	25	25	25	25	27,5	32,5	35	40	45

290	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
295	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
300	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
305	25	25	25	25	25	25	25	30	32,5	37,5	40	45
310	25	25	25	25	25	25	25	30	32,5	37,5	40	45
315	25	25	25	25	25	25	25	30	32,5	37,5	40	45
320	25	25	25	25	25	25	25	30	32,5	37,5	40	45
325	25	25	25	25	25	25	25	30	32,5	37,5	40	45
330	25	25	25	25	25	25	25	30	32,5	37,5	40	45
335	25	25	25	25	25	25	25	30	32,5	37,5	40	45
340	25	25	25	25	25	25	25	30	32,5	37,5	40	45
345	25	25	25	25	25	25	25	30	32,5	37,5	40	45
350	25	25	25	25	25	25	25	30	32,5	37,5	45	45
355	25	25	25	25	25	25	25	30	32,5	37,5	45	45
358	25	25	25	25	25	25	25	30	32,5	37,5	45	45

Bouwen met  
BRAWVESTAM



Columns - PROMATECT®-XS 2G - Table for 750°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
45	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	25
60	25	25	25	25	25	25	25	25	25	25	25	25
65	25	25	25	25	25	25	25	25	25	25	25	25
70	25	25	25	25	25	25	25	25	25	25	25	25
75	25	25	25	25	25	25	25	25	25	25	25	25
80	25	25	25	25	25	25	25	25	25	25	25	25
85	25	25	25	25	25	25	25	25	25	25	25	25
90	25	25	25	25	25	25	25	25	25	25	25	27,5
95	25	25	25	25	25	25	25	25	25	25	25	27,5
100	25	25	25	25	25	25	25	25	25	25	25	30
105	25	25	25	25	25	25	25	25	25	25	25	30
110	25	25	25	25	25	25	25	25	25	25	27,5	30
115	25	25	25	25	25	25	25	25	25	25	27,5	32,5
120	25	25	25	25	25	25	25	25	25	25	27,5	32,5
125	25	25	25	25	25	25	25	25	25	25	30	32,5
130	25	25	25	25	25	25	25	25	25	25	30	35
135	25	25	25	25	25	25	25	25	25	27,5	30	35
140	25	25	25	25	25	25	25	25	25	27,5	30	35
145	25	25	25	25	25	25	25	25	25	27,5	32,5	35
150	25	25	25	25	25	25	25	25	25	27,5	32,5	35
155	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
160	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
165	25	25	25	25	25	25	25	25	25	30	32,5	37,5
170	25	25	25	25	25	25	25	25	25	30	32,5	37,5
175	25	25	25	25	25	25	25	25	25	30	35	37,5
180	25	25	25	25	25	25	25	25	25	30	35	37,5
185	25	25	25	25	25	25	25	25	27,5	30	35	37,5
190	25	25	25	25	25	25	25	25	27,5	30	35	37,5
195	25	25	25	25	25	25	25	25	27,5	30	35	40
200	25	25	25	25	25	25	25	25	27,5	32,5	35	40
205	25	25	25	25	25	25	25	25	27,5	32,5	35	40
210	25	25	25	25	25	25	25	25	27,5	32,5	35	40
215	25	25	25	25	25	25	25	25	27,5	32,5	35	40
220	25	25	25	25	25	25	25	25	27,5	32,5	35	40
225	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
230	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
235	25	25	25	25	25	25	25	25	30	32,5	37,5	40
240	25	25	25	25	25	25	25	25	30	32,5	37,5	40
245	25	25	25	25	25	25	25	25	30	32,5	37,5	40
250	25	25	25	25	25	25	25	25	30	32,5	37,5	40
255	25	25	25	25	25	25	25	25	30	32,5	37,5	40
260	25	25	25	25	25	25	25	25	30	32,5	37,5	45
265	25	25	25	25	25	25	25	25	30	32,5	37,5	45
270	25	25	25	25	25	25	25	25	30	35	37,5	45
275	25	25	25	25	25	25	25	25	30	35	37,5	45
280	25	25	25	25	25	25	25	27,5	30	35	37,5	45
285	25	25	25	25	25	25	25	27,5	30	35	37,5	45

290	25	25	25	25	25	25	25	27,5	30	35	37,5	45
295	25	25	25	25	25	25	25	27,5	30	35	37,5	45
300	25	25	25	25	25	25	25	27,5	30	35	37,5	45
305	25	25	25	25	25	25	25	27,5	30	35	37,5	45
310	25	25	25	25	25	25	25	27,5	30	35	37,5	45
315	25	25	25	25	25	25	25	27,5	30	35	40	45
320	25	25	25	25	25	25	25	27,5	30	35	40	45
325	25	25	25	25	25	25	25	27,5	30	35	40	45
330	25	25	25	25	25	25	25	27,5	32,5	35	40	45
335	25	25	25	25	25	25	25	27,5	32,5	35	40	45
340	25	25	25	25	25	25	25	27,5	32,5	35	40	45
345	25	25	25	25	25	25	25	27,5	32,5	35	40	45
350	25	25	25	25	25	25	25	27,5	32,5	35	40	45
355	25	25	25	25	25	25	25	27,5	32,5	35	40	45
358	25	25	25	25	25	25	25	27,5	32,5	35	40	45

Bouwen met  
BRAWVESTAM

Beams - PROMATECT®-XS 2G - Table for 300°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	27,5	32,5	35	37,5	45
50	25	25	25	25	25	25	25	30	32,5	35	40	45
55	25	25	25	25	25	25	27,5	30	32,5	37,5	40	45
60	25	25	25	25	25	25	27,5	32,5	35	37,5	45	45
65	25	25	25	25	25	25	30	32,5	35	40	45	
70	25	25	25	25	25	27,5	30	32,5	37,5	40	45	
75	25	25	25	25	25	27,5	30	35	37,5	45	45	
80	25	25	25	25	25	27,5	32,5	35	40	45	45	
85	25	25	25	25	25	27,5	32,5	35	40	45		
90	25	25	25	25	25	30	32,5	37,5	40	45		
95	25	25	25	25	25	30	32,5	37,5	40	45		
100	25	25	25	25	25	30	32,5	37,5	45	45		
105	25	25	25	25	27,5	30	35	37,5	45	45		
110	25	25	25	25	27,5	30	35	37,5	45	45		
115	25	25	25	25	27,5	30	35	40	45			
120	25	25	25	25	27,5	32,5	35	40	45			
125	25	25	25	25	27,5	32,5	35	40	45			
130	25	25	25	25	27,5	32,5	35	40	45			
135	25	25	25	25	27,5	32,5	35	40	45			
140	25	25	25	25	27,5	32,5	37,5	40	45			
145	25	25	25	25	27,5	32,5	37,5	40	45			
150	25	25	25	25	30	32,5	37,5	40	45			
155	25	25	25	25	30	32,5	37,5	40	45			
160	25	25	25	25	30	32,5	37,5	45	45			
165	25	25	25	25	30	32,5	37,5	45	45			
170	25	25	25	25	30	32,5	37,5	45	45			
175	25	25	25	25	30	35	37,5	45	45			
180	25	25	25	25	30	35	37,5	45				
185	25	25	25	25	30	35	37,5	45				
190	25	25	25	25	30	35	37,5	45				
195	25	25	25	25	30	35	37,5	45				
200	25	25	25	25	30	35	37,5	45				
205	25	25	25	27,5	30	35	40	45				
210	25	25	25	27,5	30	35	40	45				
215	25	25	25	27,5	30	35	40	45				
220	25	25	25	27,5	30	35	40	45				
225	25	25	25	27,5	30	35	40	45				
230	25	25	25	27,5	30	35	40	45				
235	25	25	25	27,5	30	35	40	45				
240	25	25	25	27,5	30	35	40	45				
245	25	25	25	27,5	32,5	35	40	45				
250	25	25	25	27,5	32,5	35	40	45				
255	25	25	25	27,5	32,5	35	40	45				
260	25	25	25	27,5	32,5	35	40	45				
265	25	25	25	27,5	32,5	35	40	45				
270	25	25	25	27,5	32,5	35	40	45				
275	25	25	25	27,5	32,5	35	40	45				
280	25	25	25	27,5	32,5	35	40	45				
285	25	25	25	27,5	32,5	35	40	45				

290	25	25	25	27,5	32,5	35	40	45				
295	25	25	25	27,5	32,5	37,5	40	45				
300	25	25	25	27,5	32,5	37,5	40	45				
305	25	25	25	27,5	32,5	37,5	40	45				
310	25	25	25	27,5	32,5	37,5	40	45				
315	25	25	25	27,5	32,5	37,5	40	45				
320	25	25	25	27,5	32,5	37,5	40	45				
325	25	25	25	27,5	32,5	37,5	40	45				
330	25	25	25	27,5	32,5	37,5	40	45				
335	25	25	25	27,5	32,5	37,5	40	45				
340	25	25	25	27,5	32,5	37,5	40	45				
345	25	25	25	27,5	32,5	37,5	40	45				
350	25	25	25	27,5	32,5	37,5	40	45				
355	25	25	25	27,5	32,5	37,5	40	45				
358	25	25	25	27,5	32,5	37,5	45	45				

Bouwen met  
BRAWVESTAMMA

Beams - PROMATECT®-XS 2G - Table for 350°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	27,5	32,5	35	37,5
50	25	25	25	25	25	25	25	25	30	32,5	35	40
55	25	25	25	25	25	25	25	27,5	30	35	37,5	40
60	25	25	25	25	25	25	25	27,5	32,5	35	40	45
65	25	25	25	25	25	25	25	30	32,5	37,5	40	45
70	25	25	25	25	25	25	27,5	30	35	37,5	45	45
75	25	25	25	25	25	25	27,5	32,5	35	40	45	45
80	25	25	25	25	25	25	27,5	32,5	35	40	45	
85	25	25	25	25	25	25	30	32,5	37,5	40	45	
90	25	25	25	25	25	25	30	32,5	37,5	45	45	
95	25	25	25	25	25	27,5	30	35	37,5	45	45	
100	25	25	25	25	25	27,5	30	35	37,5	45		
105	25	25	25	25	25	27,5	32,5	35	40	45		
110	25	25	25	25	25	27,5	32,5	35	40	45		
115	25	25	25	25	25	27,5	32,5	37,5	40	45		
120	25	25	25	25	25	30	32,5	37,5	40	45		
125	25	25	25	25	25	30	32,5	37,5	40	45		
130	25	25	25	25	25	30	32,5	37,5	45	45		
135	25	25	25	25	25	30	32,5	37,5	45	45		
140	25	25	25	25	25	30	35	37,5	45	45		
145	25	25	25	25	25	30	35	37,5	45			
150	25	25	25	25	27,5	30	35	37,5	45			
155	25	25	25	25	27,5	30	35	40	45			
160	25	25	25	25	27,5	30	35	40	45			
165	25	25	25	25	27,5	30	35	40	45			
170	25	25	25	25	27,5	32,5	35	40	45			
175	25	25	25	25	27,5	32,5	35	40	45			
180	25	25	25	25	27,5	32,5	35	40	45			
185	25	25	25	25	27,5	32,5	35	40	45			
190	25	25	25	25	27,5	32,5	35	40	45			
195	25	25	25	25	27,5	32,5	37,5	40	45			
200	25	25	25	25	27,5	32,5	37,5	40	45			
205	25	25	25	25	27,5	32,5	37,5	40	45			
210	25	25	25	25	27,5	32,5	37,5	40	45			
215	25	25	25	25	27,5	32,5	37,5	40	45			
220	25	25	25	25	27,5	32,5	37,5	40	45			
225	25	25	25	25	30	32,5	37,5	45	45			
230	25	25	25	25	30	32,5	37,5	45	45			
235	25	25	25	25	30	32,5	37,5	45	45			
240	25	25	25	25	30	32,5	37,5	45	45			
245	25	25	25	25	30	32,5	37,5	45	45			
250	25	25	25	25	30	32,5	37,5	45	45			
255	25	25	25	25	30	32,5	37,5	45	45			
260	25	25	25	25	30	32,5	37,5	45				
265	25	25	25	25	30	32,5	37,5	45				
270	25	25	25	25	30	35	37,5	45				
275	25	25	25	25	30	35	37,5	45				
280	25	25	25	25	30	35	37,5	45				
285	25	25	25	25	30	35	37,5	45				

290	25	25	25	25	30	35	37,5	45				
295	25	25	25	25	30	35	37,5	45				
300	25	25	25	25	30	35	37,5	45				
305	25	25	25	25	30	35	37,5	45				
310	25	25	25	25	30	35	37,5	45				
315	25	25	25	25	30	35	37,5	45				
320	25	25	25	25	30	35	37,5	45				
325	25	25	25	25	30	35	40	45				
330	25	25	25	25	30	35	40	45				
335	25	25	25	25	30	35	40	45				
340	25	25	25	25	30	35	40	45				
345	25	25	25	25	30	35	40	45				
350	25	25	25	25	30	35	40	45				
355	25	25	25	27,5	30	35	40	45				
358	25	25	25	27,5	30	35	40	45				

Bouwen met  
BRAWVESTAMMA

Beams - PROMATECT®-XS 2G - Table for 400°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	25	27,5	32,5	35
50	25	25	25	25	25	25	25	25	25	27,5	32,5	35
55	25	25	25	25	25	25	25	25	27,5	30	35	37,5
60	25	25	25	25	25	25	25	25	27,5	32,5	35	40
65	25	25	25	25	25	25	25	27,5	30	32,5	37,5	40
70	25	25	25	25	25	25	25	27,5	30	35	37,5	45
75	25	25	25	25	25	25	25	27,5	32,5	35	40	45
80	25	25	25	25	25	25	25	30	32,5	37,5	40	45
85	25	25	25	25	25	25	27,5	30	35	37,5	45	45
90	25	25	25	25	25	25	27,5	30	35	37,5	45	
95	25	25	25	25	25	25	27,5	32,5	35	40	45	
100	25	25	25	25	25	25	27,5	32,5	35	40	45	
105	25	25	25	25	25	25	30	32,5	37,5	40	45	
110	25	25	25	25	25	25	30	32,5	37,5	40	45	
115	25	25	25	25	25	25	30	35	37,5	45	45	
120	25	25	25	25	25	27,5	30	35	37,5	45	45	
125	25	25	25	25	25	27,5	30	35	37,5	45		
130	25	25	25	25	25	27,5	30	35	40	45		
135	25	25	25	25	25	27,5	32,5	35	40	45		
140	25	25	25	25	25	27,5	32,5	35	40	45		
145	25	25	25	25	25	27,5	32,5	35	40	45		
150	25	25	25	25	25	27,5	32,5	35	40	45		
155	25	25	25	25	25	27,5	32,5	37,5	40	45		
160	25	25	25	25	25	27,5	32,5	37,5	40	45		
165	25	25	25	25	25	30	32,5	37,5	40	45		
170	25	25	25	25	25	30	32,5	37,5	45	45		
175	25	25	25	25	25	30	32,5	37,5	45	45		
180	25	25	25	25	25	30	32,5	37,5	45	45		
185	25	25	25	25	25	30	32,5	37,5	45	45		
190	25	25	25	25	25	30	35	37,5	45	45		
195	25	25	25	25	25	30	35	37,5	45			
200	25	25	25	25	25	30	35	37,5	45			
205	25	25	25	25	25	30	35	37,5	45			
210	25	25	25	25	27,5	30	35	37,5	45			
215	25	25	25	25	27,5	30	35	40	45			
220	25	25	25	25	27,5	30	35	40	45			
225	25	25	25	25	27,5	30	35	40	45			
230	25	25	25	25	27,5	30	35	40	45			
235	25	25	25	25	27,5	30	35	40	45			
240	25	25	25	25	27,5	30	35	40	45			
245	25	25	25	25	27,5	32,5	35	40	45			
250	25	25	25	25	27,5	32,5	35	40	45			
255	25	25	25	25	27,5	32,5	35	40	45			
260	25	25	25	25	27,5	32,5	35	40	45			
265	25	25	25	25	27,5	32,5	35	40	45			
270	25	25	25	25	27,5	32,5	35	40	45			
275	25	25	25	25	27,5	32,5	35	40	45			
280	25	25	25	25	27,5	32,5	35	40	45			
285	25	25	25	25	27,5	32,5	35	40	45			

290	25	25	25	25	27,5	32,5	35	40	45			
295	25	25	25	25	27,5	32,5	37,5	40	45			
300	25	25	25	25	27,5	32,5	37,5	40	45			
305	25	25	25	25	27,5	32,5	37,5	40	45			
310	25	25	25	25	27,5	32,5	37,5	40	45			
315	25	25	25	25	27,5	32,5	37,5	40	45			
320	25	25	25	25	27,5	32,5	37,5	40	45			
325	25	25	25	25	27,5	32,5	37,5	40	45			
330	25	25	25	25	27,5	32,5	37,5	40	45			
335	25	25	25	25	27,5	32,5	37,5	40	45			
340	25	25	25	25	27,5	32,5	37,5	40	45			
345	25	25	25	25	27,5	32,5	37,5	40	45			
350	25	25	25	25	27,5	32,5	37,5	40	45			
355	25	25	25	25	27,5	32,5	37,5	45	45			
358	25	25	25	25	27,5	32,5	37,5	45	45			

Bouwen met  
BRAWVESTAMPA



Beams - PROMATECT®-XS 2G - Table for 450°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	25	27,5	30	32,5
50	25	25	25	25	25	25	25	25	25	27,5	30	32,5
55	25	25	25	25	25	25	25	25	25	27,5	30	35
60	25	25	25	25	25	25	25	25	25	30	32,5	37,5
65	25	25	25	25	25	25	25	25	27,5	30	35	37,5
70	25	25	25	25	25	25	25	25	27,5	32,5	35	40
75	25	25	25	25	25	25	25	25	30	32,5	37,5	40
80	25	25	25	25	25	25	25	27,5	30	35	37,5	45
85	25	25	25	25	25	25	25	27,5	30	35	40	45
90	25	25	25	25	25	25	25	27,5	32,5	35	40	45
95	25	25	25	25	25	25	25	30	32,5	37,5	40	45
100	25	25	25	25	25	25	25	30	32,5	37,5	45	45
105	25	25	25	25	25	25	25	30	35	37,5	45	45
110	25	25	25	25	25	25	27,5	30	35	37,5	45	
115	25	25	25	25	25	25	27,5	30	35	40	45	
120	25	25	25	25	25	25	27,5	32,5	35	40	45	
125	25	25	25	25	25	25	27,5	32,5	35	40	45	
130	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
135	25	25	25	25	25	25	30	32,5	37,5	40	45	
140	25	25	25	25	25	25	30	32,5	37,5	45	45	
145	25	25	25	25	25	25	30	32,5	37,5	45	45	
150	25	25	25	25	25	25	30	35	37,5	45	45	
155	25	25	25	25	25	25	30	35	37,5	45		
160	25	25	25	25	25	27,5	30	35	37,5	45		
165	25	25	25	25	25	27,5	30	35	40	45		
170	25	25	25	25	25	27,5	30	35	40	45		
175	25	25	25	25	25	27,5	30	35	40	45		
180	25	25	25	25	25	27,5	32,5	35	40	45		
185	25	25	25	25	25	27,5	32,5	35	40	45		
190	25	25	25	25	25	27,5	32,5	35	40	45		
195	25	25	25	25	25	27,5	32,5	35	40	45		
200	25	25	25	25	25	27,5	32,5	35	40	45		
205	25	25	25	25	25	27,5	32,5	37,5	40	45		
210	25	25	25	25	25	27,5	32,5	37,5	40	45		
215	25	25	25	25	25	27,5	32,5	37,5	40	45		
220	25	25	25	25	25	27,5	32,5	37,5	40	45		
225	25	25	25	25	25	27,5	32,5	37,5	40	45		
230	25	25	25	25	25	30	32,5	37,5	40	45		
235	25	25	25	25	25	30	32,5	37,5	45	45		
240	25	25	25	25	25	30	32,5	37,5	45	45		
245	25	25	25	25	25	30	32,5	37,5	45	45		
250	25	25	25	25	25	30	32,5	37,5	45	45		
255	25	25	25	25	25	30	32,5	37,5	45	45		
260	25	25	25	25	25	30	32,5	37,5	45	45		
265	25	25	25	25	25	30	32,5	37,5	45	45		
270	25	25	25	25	25	30	35	37,5	45	45		
275	25	25	25	25	25	30	35	37,5	45			
280	25	25	25	25	25	30	35	37,5	45			
285	25	25	25	25	25	30	35	37,5	45			

290	25	25	25	25	25	30	35	37,5	45			
295	25	25	25	25	25	30	35	37,5	45			
300	25	25	25	25	25	30	35	37,5	45			
305	25	25	25	25	25	30	35	37,5	45			
310	25	25	25	25	25	30	35	37,5	45			
315	25	25	25	25	25	30	35	37,5	45			
320	25	25	25	25	27,5	30	35	40	45			
325	25	25	25	25	27,5	30	35	40	45			
330	25	25	25	25	27,5	30	35	40	45			
335	25	25	25	25	27,5	30	35	40	45			
340	25	25	25	25	27,5	30	35	40	45			
345	25	25	25	25	27,5	30	35	40	45			
350	25	25	25	25	27,5	30	35	40	45			
355	25	25	25	25	27,5	30	35	40	45			
358	25	25	25	25	27,5	30	35	40	45			

Bouwen met  
BRAWVESTAMPA

Beams - PROMATECT®-XS 2G - Table for 500°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	25	25	25	27,5
50	25	25	25	25	25	25	25	25	25	25	25	27,5
55	25	25	25	25	25	25	25	25	25	25	27,5	30
60	25	25	25	25	25	25	25	25	25	25	30	32,5
65	25	25	25	25	25	25	25	25	25	27,5	30	35
70	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
75	25	25	25	25	25	25	25	25	25	30	35	37,5
80	25	25	25	25	25	25	25	25	27,5	30	35	40
85	25	25	25	25	25	25	25	25	27,5	32,5	35	40
90	25	25	25	25	25	25	25	25	30	32,5	37,5	40
95	25	25	25	25	25	25	25	25	30	35	37,5	45
100	25	25	25	25	25	25	25	27,5	30	35	37,5	45
105	25	25	25	25	25	25	25	27,5	32,5	35	40	45
110	25	25	25	25	25	25	25	27,5	32,5	35	40	45
115	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
120	25	25	25	25	25	25	25	30	32,5	37,5	40	45
125	25	25	25	25	25	25	25	30	32,5	37,5	45	45
130	25	25	25	25	25	25	25	30	35	37,5	45	45
135	25	25	25	25	25	25	27,5	30	35	37,5	45	
140	25	25	25	25	25	25	27,5	30	35	40	45	
145	25	25	25	25	25	25	27,5	30	35	40	45	
150	25	25	25	25	25	25	27,5	32,5	35	40	45	
155	25	25	25	25	25	25	27,5	32,5	35	40	45	
160	25	25	25	25	25	25	27,5	32,5	35	40	45	
165	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
170	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
175	25	25	25	25	25	25	30	32,5	37,5	40	45	
180	25	25	25	25	25	25	30	32,5	37,5	45	45	
185	25	25	25	25	25	25	30	32,5	37,5	45	45	
190	25	25	25	25	25	25	30	32,5	37,5	45	45	
195	25	25	25	25	25	25	30	35	37,5	45	45	
200	25	25	25	25	25	25	30	35	37,5	45	45	
205	25	25	25	25	25	25	30	35	37,5	45		
210	25	25	25	25	25	25	30	35	37,5	45		
215	25	25	25	25	25	27,5	30	35	37,5	45		
220	25	25	25	25	25	27,5	30	35	37,5	45		
225	25	25	25	25	25	27,5	30	35	40	45		
230	25	25	25	25	25	27,5	30	35	40	45		
235	25	25	25	25	25	27,5	30	35	40	45		
240	25	25	25	25	25	27,5	30	35	40	45		
245	25	25	25	25	25	27,5	30	35	40	45		
250	25	25	25	25	25	27,5	32,5	35	40	45		
255	25	25	25	25	25	27,5	32,5	35	40	45		
260	25	25	25	25	25	27,5	32,5	35	40	45		
265	25	25	25	25	25	27,5	32,5	35	40	45		
270	25	25	25	25	25	27,5	32,5	35	40	45		
275	25	25	25	25	25	27,5	32,5	35	40	45		
280	25	25	25	25	25	27,5	32,5	35	40	45		
285	25	25	25	25	25	27,5	32,5	35	40	45		

290	25	25	25	25	25	27,5	32,5	37,5	40	45		
295	25	25	25	25	25	27,5	32,5	37,5	40	45		
300	25	25	25	25	25	27,5	32,5	37,5	40	45		
305	25	25	25	25	25	27,5	32,5	37,5	40	45		
310	25	25	25	25	25	27,5	32,5	37,5	40	45		
315	25	25	25	25	25	27,5	32,5	37,5	40	45		
320	25	25	25	25	25	27,5	32,5	37,5	40	45		
325	25	25	25	25	25	27,5	32,5	37,5	40	45		
330	25	25	25	25	25	27,5	32,5	37,5	40	45		
335	25	25	25	25	25	27,5	32,5	37,5	40	45		
340	25	25	25	25	25	30	32,5	37,5	40	45		
345	25	25	25	25	25	30	32,5	37,5	40	45		
350	25	25	25	25	25	30	32,5	37,5	45	45		
355	25	25	25	25	25	30	32,5	37,5	45	45		
358	25	25	25	25	25	30	32,5	37,5	45	45		

Bouwen met  
BRAWVESTAMP

Beams - PROMATECT®-XS 2G - Table for 550°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	27,5
60	25	25	25	25	25	25	25	25	25	25	25	30
65	25	25	25	25	25	25	25	25	25	25	27,5	32,5
70	25	25	25	25	25	25	25	25	25	25	30	32,5
75	25	25	25	25	25	25	25	25	25	27,5	30	35
80	25	25	25	25	25	25	25	25	25	27,5	32,5	35
85	25	25	25	25	25	25	25	25	25	30	32,5	37,5
90	25	25	25	25	25	25	25	25	27,5	30	35	37,5
95	25	25	25	25	25	25	25	25	27,5	30	35	40
100	25	25	25	25	25	25	25	25	27,5	32,5	35	40
105	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
110	25	25	25	25	25	25	25	25	30	32,5	37,5	45
115	25	25	25	25	25	25	25	25	30	35	37,5	45
120	25	25	25	25	25	25	25	27,5	30	35	37,5	45
125	25	25	25	25	25	25	25	27,5	30	35	40	45
130	25	25	25	25	25	25	25	27,5	32,5	35	40	45
135	25	25	25	25	25	25	25	27,5	32,5	35	40	45
140	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
145	25	25	25	25	25	25	25	30	32,5	37,5	40	45
150	25	25	25	25	25	25	25	30	32,5	37,5	45	45
155	25	25	25	25	25	25	25	30	32,5	37,5	45	45
160	25	25	25	25	25	25	25	30	35	37,5	45	45
165	25	25	25	25	25	25	25	30	35	37,5	45	
170	25	25	25	25	25	25	27,5	30	35	37,5	45	
175	25	25	25	25	25	25	27,5	30	35	37,5	45	
180	25	25	25	25	25	25	27,5	30	35	40	45	
185	25	25	25	25	25	25	27,5	30	35	40	45	
190	25	25	25	25	25	25	27,5	32,5	35	40	45	
195	25	25	25	25	25	25	27,5	32,5	35	40	45	
200	25	25	25	25	25	25	27,5	32,5	35	40	45	
205	25	25	25	25	25	25	27,5	32,5	35	40	45	
210	25	25	25	25	25	25	27,5	32,5	35	40	45	
215	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
220	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
225	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
230	25	25	25	25	25	25	30	32,5	37,5	40	45	
235	25	25	25	25	25	25	30	32,5	37,5	40	45	
240	25	25	25	25	25	25	30	32,5	37,5	40	45	
245	25	25	25	25	25	25	30	32,5	37,5	45	45	
250	25	25	25	25	25	25	30	32,5	37,5	45	45	
255	25	25	25	25	25	25	30	32,5	37,5	45	45	
260	25	25	25	25	25	25	30	32,5	37,5	45	45	
265	25	25	25	25	25	25	30	32,5	37,5	45	45	
270	25	25	25	25	25	25	30	35	37,5	45	45	
275	25	25	25	25	25	25	30	35	37,5	45	45	
280	25	25	25	25	25	25	30	35	37,5	45	45	
285	25	25	25	25	25	25	30	35	37,5	45		

290	25	25	25	25	25	25	30	35	37,5	45		
295	25	25	25	25	25	25	30	35	37,5	45		
300	25	25	25	25	25	27,5	30	35	37,5	45		
305	25	25	25	25	25	27,5	30	35	37,5	45		
310	25	25	25	25	25	27,5	30	35	37,5	45		
315	25	25	25	25	25	27,5	30	35	37,5	45		
320	25	25	25	25	25	27,5	30	35	40	45		
325	25	25	25	25	25	27,5	30	35	40	45		
330	25	25	25	25	25	27,5	30	35	40	45		
335	25	25	25	25	25	27,5	30	35	40	45		
340	25	25	25	25	25	27,5	30	35	40	45		
345	25	25	25	25	25	27,5	30	35	40	45		
350	25	25	25	25	25	27,5	30	35	40	45		
355	25	25	25	25	25	27,5	30	35	40	45		
358	25	25	25	25	25	27,5	30	35	40	45		

Bouwen met  
BRAWVESTAMP

Beams - PROMATECT®-XS 2G - Table for 600°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	25
60	25	25	25	25	25	25	25	25	25	25	25	25
65	25	25	25	25	25	25	25	25	25	25	25	27,5
70	25	25	25	25	25	25	25	25	25	25	25	30
75	25	25	25	25	25	25	25	25	25	25	27,5	32,5
80	25	25	25	25	25	25	25	25	25	25	30	32,5
85	25	25	25	25	25	25	25	25	25	25	30	35
90	25	25	25	25	25	25	25	25	25	27,5	32,5	35
95	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
100	25	25	25	25	25	25	25	25	25	30	32,5	37,5
105	25	25	25	25	25	25	25	25	25	30	35	37,5
110	25	25	25	25	25	25	25	25	27,5	30	35	40
115	25	25	25	25	25	25	25	25	27,5	32,5	35	40
120	25	25	25	25	25	25	25	25	27,5	32,5	35	40
125	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
130	25	25	25	25	25	25	25	25	30	32,5	37,5	40
135	25	25	25	25	25	25	25	25	30	32,5	37,5	45
140	25	25	25	25	25	25	25	25	30	35	37,5	45
145	25	25	25	25	25	25	25	27,5	30	35	37,5	45
150	25	25	25	25	25	25	25	27,5	30	35	40	45
155	25	25	25	25	25	25	25	27,5	30	35	40	45
160	25	25	25	25	25	25	25	27,5	32,5	35	40	45
165	25	25	25	25	25	25	25	27,5	32,5	35	40	45
170	25	25	25	25	25	25	25	27,5	32,5	35	40	45
175	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
180	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
185	25	25	25	25	25	25	25	30	32,5	37,5	40	45
190	25	25	25	25	25	25	25	30	32,5	37,5	45	45
195	25	25	25	25	25	25	25	30	32,5	37,5	45	45
200	25	25	25	25	25	25	25	30	32,5	37,5	45	45
205	25	25	25	25	25	25	25	30	35	37,5	45	45
210	25	25	25	25	25	25	25	30	35	37,5	45	45
215	25	25	25	25	25	25	25	30	35	37,5	45	
220	25	25	25	25	25	25	27,5	30	35	37,5	45	
225	25	25	25	25	25	25	27,5	30	35	37,5	45	
230	25	25	25	25	25	25	27,5	30	35	40	45	
235	25	25	25	25	25	25	27,5	30	35	40	45	
240	25	25	25	25	25	25	27,5	30	35	40	45	
245	25	25	25	25	25	25	27,5	30	35	40	45	
250	25	25	25	25	25	25	27,5	32,5	35	40	45	
255	25	25	25	25	25	25	27,5	32,5	35	40	45	
260	25	25	25	25	25	25	27,5	32,5	35	40	45	
265	25	25	25	25	25	25	27,5	32,5	35	40	45	
270	25	25	25	25	25	25	27,5	32,5	35	40	45	
275	25	25	25	25	25	25	27,5	32,5	35	40	45	
280	25	25	25	25	25	25	27,5	32,5	35	40	45	
285	25	25	25	25	25	25	27,5	32,5	35	40	45	

290	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
295	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
300	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
305	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
310	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
315	25	25	25	25	25	25	27,5	32,5	37,5	40	45	
320	25	25	25	25	25	25	30	32,5	37,5	40	45	
325	25	25	25	25	25	25	30	32,5	37,5	40	45	
330	25	25	25	25	25	25	30	32,5	37,5	40	45	
335	25	25	25	25	25	25	30	32,5	37,5	40	45	
340	25	25	25	25	25	25	30	32,5	37,5	40	45	
345	25	25	25	25	25	25	30	32,5	37,5	40	45	
350	25	25	25	25	25	25	30	32,5	37,5	45	45	
355	25	25	25	25	25	25	30	32,5	37,5	45	45	
358	25	25	25	25	25	25	30	32,5	37,5	45	45	

Bouwen met  
BRAWVESTAMP



Beams - PROMATECT®-XS 2G - Table for 650°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	25
60	25	25	25	25	25	25	25	25	25	25	25	25
65	25	25	25	25	25	25	25	25	25	25	25	25
70	25	25	25	25	25	25	25	25	25	25	25	27,5
75	25	25	25	25	25	25	25	25	25	25	25	27,5
80	25	25	25	25	25	25	25	25	25	25	25	30
85	25	25	25	25	25	25	25	25	25	25	27,5	32,5
90	25	25	25	25	25	25	25	25	25	25	27,5	32,5
95	25	25	25	25	25	25	25	25	25	25	30	32,5
100	25	25	25	25	25	25	25	25	25	27,5	30	35
105	25	25	25	25	25	25	25	25	25	27,5	32,5	35
110	25	25	25	25	25	25	25	25	25	27,5	32,5	35
115	25	25	25	25	25	25	25	25	25	30	32,5	37,5
120	25	25	25	25	25	25	25	25	25	30	32,5	37,5
125	25	25	25	25	25	25	25	25	25	30	35	37,5
130	25	25	25	25	25	25	25	25	27,5	30	35	37,5
135	25	25	25	25	25	25	25	25	27,5	30	35	40
140	25	25	25	25	25	25	25	25	27,5	32,5	35	40
145	25	25	25	25	25	25	25	25	27,5	32,5	35	40
150	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
155	25	25	25	25	25	25	25	25	30	32,5	37,5	40
160	25	25	25	25	25	25	25	25	30	32,5	37,5	45
165	25	25	25	25	25	25	25	25	30	32,5	37,5	45
170	25	25	25	25	25	25	25	25	30	35	37,5	45
175	25	25	25	25	25	25	25	27,5	30	35	37,5	45
180	25	25	25	25	25	25	25	27,5	30	35	37,5	45
185	25	25	25	25	25	25	25	27,5	30	35	40	45
190	25	25	25	25	25	25	25	27,5	30	35	40	45
195	25	25	25	25	25	25	25	27,5	32,5	35	40	45
200	25	25	25	25	25	25	25	27,5	32,5	35	40	45
205	25	25	25	25	25	25	25	27,5	32,5	35	40	45
210	25	25	25	25	25	25	25	27,5	32,5	35	40	45
215	25	25	25	25	25	25	25	27,5	32,5	35	40	45
220	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
225	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
230	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
235	25	25	25	25	25	25	25	30	32,5	37,5	40	45
240	25	25	25	25	25	25	25	30	32,5	37,5	40	45
245	25	25	25	25	25	25	25	30	32,5	37,5	40	45
250	25	25	25	25	25	25	25	30	32,5	37,5	45	45
255	25	25	25	25	25	25	25	30	32,5	37,5	45	45
260	25	25	25	25	25	25	25	30	32,5	37,5	45	45
265	25	25	25	25	25	25	25	30	32,5	37,5	45	45
270	25	25	25	25	25	25	25	30	35	37,5	45	45
275	25	25	25	25	25	25	25	30	35	37,5	45	45
280	25	25	25	25	25	25	25	30	35	37,5	45	45
285	25	25	25	25	25	25	27,5	30	35	37,5	45	45

290	25	25	25	25	25	25	27,5	30	35	37,5	45	45
295	25	25	25	25	25	25	27,5	30	35	37,5	45	
300	25	25	25	25	25	25	27,5	30	35	37,5	45	
305	25	25	25	25	25	25	27,5	30	35	37,5	45	
310	25	25	25	25	25	25	27,5	30	35	37,5	45	
315	25	25	25	25	25	25	27,5	30	35	40	45	
320	25	25	25	25	25	25	27,5	30	35	40	45	
325	25	25	25	25	25	25	27,5	30	35	40	45	
330	25	25	25	25	25	25	27,5	30	35	40	45	
335	25	25	25	25	25	25	27,5	30	35	40	45	
340	25	25	25	25	25	25	27,5	32,5	35	40	45	
345	25	25	25	25	25	25	27,5	32,5	35	40	45	
350	25	25	25	25	25	25	27,5	32,5	35	40	45	
355	25	25	25	25	25	25	27,5	32,5	35	40	45	
358	25	25	25	25	25	25	27,5	32,5	35	40	45	

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Beams - PROMATECT®-XS 2G - Table for 700°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	25
60	25	25	25	25	25	25	25	25	25	25	25	25
65	25	25	25	25	25	25	25	25	25	25	25	25
70	25	25	25	25	25	25	25	25	25	25	25	25
75	25	25	25	25	25	25	25	25	25	25	25	25
80	25	25	25	25	25	25	25	25	25	25	25	27,5
85	25	25	25	25	25	25	25	25	25	25	25	27,5
90	25	25	25	25	25	25	25	25	25	25	25	30
95	25	25	25	25	25	25	25	25	25	25	27,5	30
100	25	25	25	25	25	25	25	25	25	25	27,5	32,5
105	25	25	25	25	25	25	25	25	25	25	27,5	32,5
110	25	25	25	25	25	25	25	25	25	25	30	32,5
115	25	25	25	25	25	25	25	25	25	25	30	35
120	25	25	25	25	25	25	25	25	25	27,5	30	35
125	25	25	25	25	25	25	25	25	25	27,5	32,5	35
130	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
135	25	25	25	25	25	25	25	25	25	30	32,5	37,5
140	25	25	25	25	25	25	25	25	25	30	32,5	37,5
145	25	25	25	25	25	25	25	25	25	30	35	37,5
150	25	25	25	25	25	25	25	25	25	30	35	37,5
155	25	25	25	25	25	25	25	25	27,5	30	35	37,5
160	25	25	25	25	25	25	25	25	27,5	30	35	40
165	25	25	25	25	25	25	25	25	27,5	32,5	35	40
170	25	25	25	25	25	25	25	25	27,5	32,5	35	40
175	25	25	25	25	25	25	25	25	27,5	32,5	35	40
180	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
185	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
190	25	25	25	25	25	25	25	25	30	32,5	37,5	40
195	25	25	25	25	25	25	25	25	30	32,5	37,5	40
200	25	25	25	25	25	25	25	25	30	32,5	37,5	45
205	25	25	25	25	25	25	25	25	30	32,5	37,5	45
210	25	25	25	25	25	25	25	25	30	35	37,5	45
215	25	25	25	25	25	25	25	25	30	35	37,5	45
220	25	25	25	25	25	25	25	27,5	30	35	37,5	45
225	25	25	25	25	25	25	25	27,5	30	35	37,5	45
230	25	25	25	25	25	25	25	27,5	30	35	37,5	45
235	25	25	25	25	25	25	25	27,5	30	35	37,5	45
240	25	25	25	25	25	25	25	27,5	30	35	40	45
245	25	25	25	25	25	25	25	27,5	30	35	40	45
250	25	25	25	25	25	25	25	27,5	32,5	35	40	45
255	25	25	25	25	25	25	25	27,5	32,5	35	40	45
260	25	25	25	25	25	25	25	27,5	32,5	35	40	45
265	25	25	25	25	25	25	25	27,5	32,5	35	40	45
270	25	25	25	25	25	25	25	27,5	32,5	35	40	45
275	25	25	25	25	25	25	25	27,5	32,5	35	40	45
280	25	25	25	25	25	25	25	27,5	32,5	35	40	45
285	25	25	25	25	25	25	25	27,5	32,5	35	40	45

290	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
295	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
300	25	25	25	25	25	25	25	27,5	32,5	37,5	40	45
305	25	25	25	25	25	25	25	30	32,5	37,5	40	45
310	25	25	25	25	25	25	25	30	32,5	37,5	40	45
315	25	25	25	25	25	25	25	30	32,5	37,5	40	45
320	25	25	25	25	25	25	25	30	32,5	37,5	40	45
325	25	25	25	25	25	25	25	30	32,5	37,5	40	45
330	25	25	25	25	25	25	25	30	32,5	37,5	40	45
335	25	25	25	25	25	25	25	30	32,5	37,5	40	45
340	25	25	25	25	25	25	25	30	32,5	37,5	40	45
345	25	25	25	25	25	25	25	30	32,5	37,5	40	45
350	25	25	25	25	25	25	25	30	32,5	37,5	45	45
355	25	25	25	25	25	25	25	30	32,5	37,5	45	45
358	25	25	25	25	25	25	25	30	32,5	37,5	45	45

Bouwen met  
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Beams - PROMATECT®-XS 2G - Table for 750°C												
Section Factor	Double layer fire protection board system - Thickness of fire protection system (mm)											
m <sup>-1</sup>	15 min	30 min	45 min	60 min	75 min	90 min	105 min	120 min	135 min	150 min	165 min	180 min
49	25	25	25	25	25	25	25	25	25	25	25	25
50	25	25	25	25	25	25	25	25	25	25	25	25
55	25	25	25	25	25	25	25	25	25	25	25	25
60	25	25	25	25	25	25	25	25	25	25	25	25
65	25	25	25	25	25	25	25	25	25	25	25	25
70	25	25	25	25	25	25	25	25	25	25	25	25
75	25	25	25	25	25	25	25	25	25	25	25	25
80	25	25	25	25	25	25	25	25	25	25	25	25
85	25	25	25	25	25	25	25	25	25	25	25	25
90	25	25	25	25	25	25	25	25	25	25	25	27,5
95	25	25	25	25	25	25	25	25	25	25	25	27,5
100	25	25	25	25	25	25	25	25	25	25	25	30
105	25	25	25	25	25	25	25	25	25	25	25	30
110	25	25	25	25	25	25	25	25	25	25	27,5	30
115	25	25	25	25	25	25	25	25	25	25	27,5	32,5
120	25	25	25	25	25	25	25	25	25	25	27,5	32,5
125	25	25	25	25	25	25	25	25	25	25	30	32,5
130	25	25	25	25	25	25	25	25	25	25	30	35
135	25	25	25	25	25	25	25	25	25	27,5	30	35
140	25	25	25	25	25	25	25	25	25	27,5	30	35
145	25	25	25	25	25	25	25	25	25	27,5	32,5	35
150	25	25	25	25	25	25	25	25	25	27,5	32,5	35
155	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
160	25	25	25	25	25	25	25	25	25	27,5	32,5	37,5
165	25	25	25	25	25	25	25	25	25	30	32,5	37,5
170	25	25	25	25	25	25	25	25	25	30	32,5	37,5
175	25	25	25	25	25	25	25	25	25	30	35	37,5
180	25	25	25	25	25	25	25	25	25	30	35	37,5
185	25	25	25	25	25	25	25	25	27,5	30	35	37,5
190	25	25	25	25	25	25	25	25	27,5	30	35	37,5
195	25	25	25	25	25	25	25	25	27,5	30	35	40
200	25	25	25	25	25	25	25	25	27,5	32,5	35	40
205	25	25	25	25	25	25	25	25	27,5	32,5	35	40
210	25	25	25	25	25	25	25	25	27,5	32,5	35	40
215	25	25	25	25	25	25	25	25	27,5	32,5	35	40
220	25	25	25	25	25	25	25	25	27,5	32,5	35	40
225	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
230	25	25	25	25	25	25	25	25	27,5	32,5	37,5	40
235	25	25	25	25	25	25	25	25	30	32,5	37,5	40
240	25	25	25	25	25	25	25	25	30	32,5	37,5	40
245	25	25	25	25	25	25	25	25	30	32,5	37,5	40
250	25	25	25	25	25	25	25	25	30	32,5	37,5	40
255	25	25	25	25	25	25	25	25	30	32,5	37,5	40
260	25	25	25	25	25	25	25	25	30	32,5	37,5	45
265	25	25	25	25	25	25	25	25	30	32,5	37,5	45
270	25	25	25	25	25	25	25	25	30	35	37,5	45
275	25	25	25	25	25	25	25	25	30	35	37,5	45
280	25	25	25	25	25	25	25	27,5	30	35	37,5	45
285	25	25	25	25	25	25	25	27,5	30	35	37,5	45

290	25	25	25	25	25	25	25	27,5	30	35	37,5	45
295	25	25	25	25	25	25	25	27,5	30	35	37,5	45
300	25	25	25	25	25	25	25	27,5	30	35	37,5	45
305	25	25	25	25	25	25	25	27,5	30	35	37,5	45
310	25	25	25	25	25	25	25	27,5	30	35	37,5	45
315	25	25	25	25	25	25	25	27,5	30	35	40	45
320	25	25	25	25	25	25	25	27,5	30	35	40	45
325	25	25	25	25	25	25	25	27,5	30	35	40	45
330	25	25	25	25	25	25	25	27,5	32,5	35	40	45
335	25	25	25	25	25	25	25	27,5	32,5	35	40	45
340	25	25	25	25	25	25	25	27,5	32,5	35	40	45
345	25	25	25	25	25	25	25	27,5	32,5	35	40	45
350	25	25	25	25	25	25	25	27,5	32,5	35	40	45
355	25	25	25	25	25	25	25	27,5	32,5	35	40	45
358	25	25	25	25	25	25	25	27,5	32,5	35	40	45

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**B.- TECHNICAL SPECIFICATIONS PROVIDED BY THE TEST SPONSOR**

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Promat

TECHNICAL DATA SHEET

# PROMATECT®-XS 2G

Second Generation Fire Protective Board



### General description

PROMATECT®-XS Second Generation is the successor of PROMATECT®-XS.

PROMATECT®-XS 2G combines efficient fire protection with great ease of installation and is specifically designed for fire protection of structural steelwork.

### Field of application

- Steel beams
- Steel columns

### System advantage / customer benefit

- Non-combustible
- Solutions with thin board thicknesses for fire protection of any steel structure
- Strong and durable
- Easy cutting, even with a knife
- Fast and simple installation with staples, without the need for glue or joint filler

### Installation and finishing

PROMATECT®-XS 2G can be easily cut with a knife. For sawing of large quantities an electric saw with dust extraction is recommended. Also when cutting with a knife a tight corner connection can be achieved.

PROMATECT®-XS 2G fire protective boards can be easily installed with staples and do not require the use of glue or a joint filler.

### Storage requirements

- Always store the boards on a flat surface.
- Store the boards under cover in a well ventilated space.
- Don't expose the boards to temperatures below 0°C when wet.

### Safety instructions

- Please refer to the safety data sheet for additional advice.

### Technical data and properties

	PROMATECT®-XS 2G
Volumetric mass (50% RH, 23°C)	915 kg/m <sup>3</sup> ± 8%
Thermal conductivity λ (20°C)	0.275 W/mK
Colour	white
Surface finish	smooth, lightly textured
Compression strength	≥ 6 N/mm <sup>2</sup>
Reaction to fire	Class A1 (non-combustible)

### Dimensions

Thickness (mm)	Length (mm)	Width (mm)	Edge	Boards/pallet	Nominal weight /m <sup>2</sup> (kg)
12.5	2500	1200	Square	40	11.4
15	2500	1200	Square	32	13.7
20	2500	1200	Square	24	18.3
25	2000*	1200	Square	24	22.9

\* Note that the length of the 25mm thickness boards is not 2500mm but 2000mm

The product must be applied in accordance with regulations for construction material in general and passive fire protection in particular, with the applicable national test certificates and approvals and in accordance with applicable national building regulations. Products may only be applied by trained professionals with adequate knowledge and only after thorough review of the installation guidelines, safety data sheets, national test certificates and approvals. For additional information on how and where to use this product please refer to the Promat handbook or contact your local Promat office. All the relevant documents can be obtained free of charge from the local Promat office. For Non-European Union countries separate guidelines are relevant. If required please contact your local Promat office.

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[www.promat.com](http://www.promat.com)

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