



CERTIFICATE OF APPROVAL

No CF 5942

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

Etex Building performance Ltd

Gordano House, Easton-in-Gordano, Marsh Lane, Bristol,
BS20 0NE
Tel: 0800 145 6033

Have been assessed against the requirements of the Technical Schedule(s)
denoted below and are approved for use subject to the conditions
appended hereto:

CERTIFIED PRODUCT
PROMATECT®-XW

TECHNICAL SCHEDULE
TS 14 - Passive Fire Protection
Materials used to provide Fire
Protection to Structural
Steelwork

Signed and sealed for and on behalf of Warringtonfire Testing and Certification Limited

Paul Duggan
Certification Manager



Issued: 22nd January 2021
Valid to: 21st January 2026





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Etex Building Performance Ltd

1. This certification is provided to the client for their own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.
2. This approval relates to the use of PROMATECT®-XW for the fire protection of steel I-shaped beams and columns, and rectangular hollow column sections. The precise scope is given in Tables 1 to 12 which show the total protection thickness of PROMATECT®-XW required to provide fire resistance periods in accordance with BS476: Part 21: 1987 of up to 60 minutes for different sections, section factors and design temperatures.
3. The products are approved on the basis of:
 - i) Initial type testing.
 - ii) A design appraisal against TS14.
 - iii) Certification of quality management system to ISO 9001: 2015.
 - iv) Inspection and surveillance of Factory Production Control.
4. The results for I/H sections can be applied to angles, channels and T-sections for the same section factor with the same fixing method. The data referring to three-sided fire exposure of beams relate to beams supporting concrete floor slabs. The protection thickness shown for I/H columns can be applied to box protected beams exposed on all four sides.
5. It is assumed that the steel surface preparation and fixing method for the protection system will be the same as that used for the tested sections. Specifications of suitably tested and evaluated surface preparations, and protection system are available from Etex Building performance Ltd whose responsibility is to ensure PROMATECT®-XW is compatible for use in respect of both ambient and fire conditions.
6. The data shown is applicable to PROMATECT®-XW applied by the same fixing method for the protection system to horizontal, vertical, flexural and compression members supporting loads up to the maximum design loads specified in BS449: Part 2.
7. The approval relates to ongoing production. Product and/or its immediate packaging is identified with the manufacturers' name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.
8. The data shown in the tables is based on assessments which comply with the criteria for acceptability now incorporated within the CERTIFIRE scheme.

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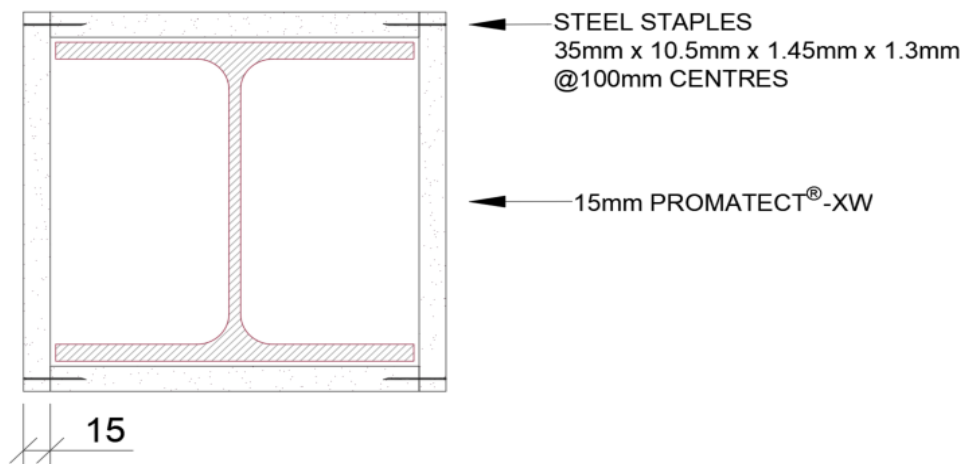
Fitting/Fixing

The Certification is limited to the same fixing method as detailed in the following.

I/H Columns & Rectangular/Square Hollow Columns

The 15mm PROMATECT®-XW boards are fitted together in a box shape around the tested specimen using steel staples 35mm length, 10.5mm crown, 1.5mm wide at 100mm centres.

All boards are squared-edged and butt jointed.

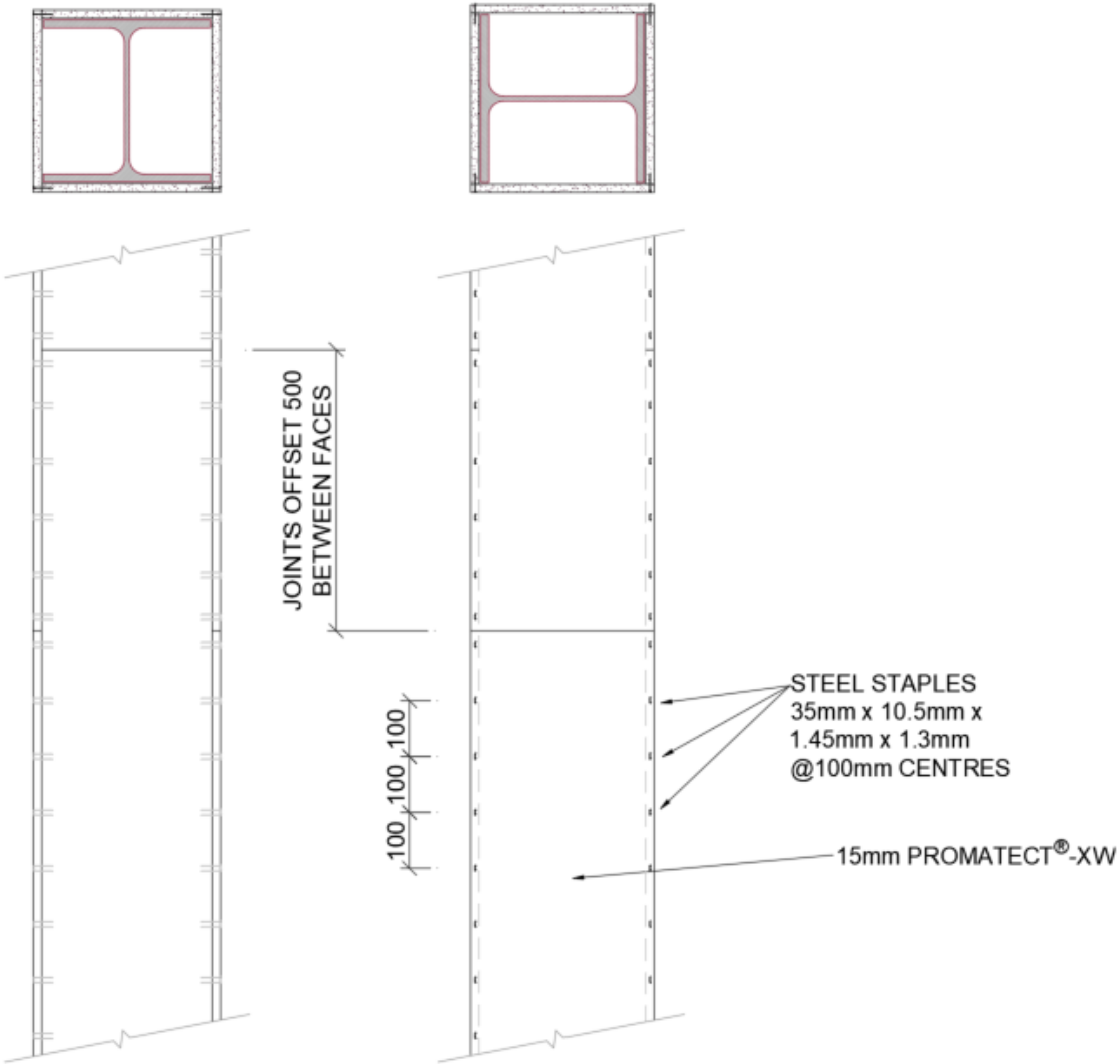


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I/H Beams

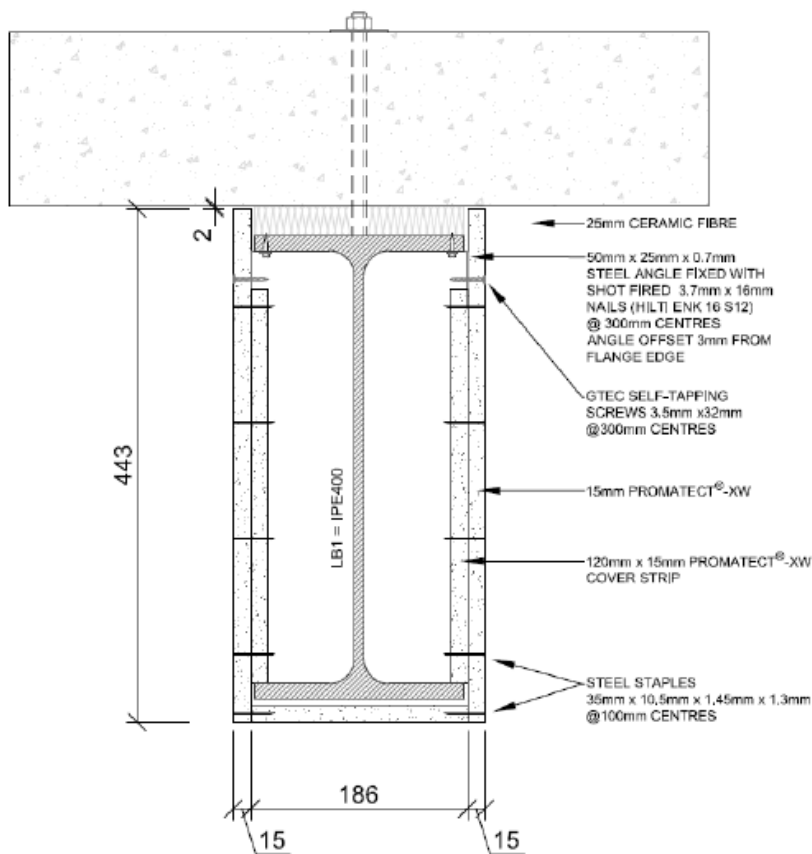
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PROMATECT®-XW cover strips, size 120mm x 15mm at maximum 1200mm centres. The cover strips are inserted behind the vertical joints between the boards and the side of the beam. The cover strips are fitted to the boards by means of Galvanised steel staples 35mm length, 10.5mm crown, 1.45mm wide and 1.3mm thick. at 100mm centres attaching the boards on the bottom of the beam. The boards are screw fixed into steel angles (50 x 25 x 0.7mm) using 32 x 3.5mm self- tapping screws at 300mm nominal centres. The steel angles are fixed to the upper flange by means of shot fired 16 x 3.7mm galvanised nails.

All boards are squared-edged and butt jointed.

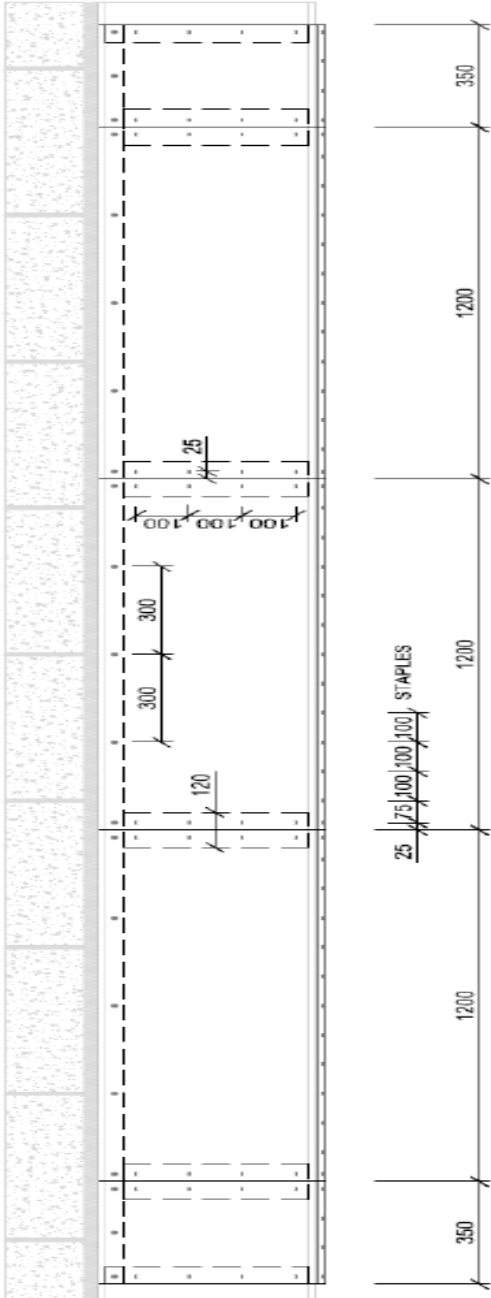


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LB1 = IPE 400 LOADED BEAM - 15mm PROMATECT® -XW

PROMATECT®-XW

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Table 1

I/H Column - 15 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻³)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	15	15	15	15	15	15	15	15
105	15	15	15	15	15	15	15	15
110	15	15	15	15	15	15	15	15
115	15	15	15	15	15	15	15	15
120	15	15	15	15	15	15	15	15
125	15	15	15	15	15	15	15	15
130	15	15	15	15	15	15	15	15
135	15	15	15	15	15	15	15	15
140	15	15	15	15	15	15	15	15
145	15	15	15	15	15	15	15	15
150	15	15	15	15	15	15	15	15
155	15	15	15	15	15	15	15	15
160	15	15	15	15	15	15	15	15
165	15	15	15	15	15	15	15	15
170	15	15	15	15	15	15	15	15
175	15	15	15	15	15	15	15	15
180	15	15	15	15	15	15	15	15
185	15	15	15	15	15	15	15	15
190	15	15	15	15	15	15	15	15
195	15	15	15	15	15	15	15	15
200	15	15	15	15	15	15	15	15
205	15	15	15	15	15	15	15	15
210	15	15	15	15	15	15	15	15
215	15	15	15	15	15	15	15	15
220	15	15	15	15	15	15	15	15
225	15	15	15	15	15	15	15	15
230	15	15	15	15	15	15	15	15
235	15	15	15	15	15	15	15	15
240	15	15	15	15	15	15	15	15
245	15	15	15	15	15	15	15	15
250	15	15	15	15	15	15	15	15
255	15	15	15	15	15	15	15	15
260	15	15	15	15	15	15	15	15
265	15	15	15	15	15	15	15	15
270	15	15	15	15	15	15	15	15
275	15	15	15	15	15	15	15	15
280	15	15	15	15	15	15	15	15
285	15	15	15	15	15	15	15	15
290	15	15	15	15	15	15	15	15
295	15	15	15	15	15	15	15	15
300	15	15	15	15	15	15	15	15
305	15	15	15	15	15	15	15	15
310	15	15	15	15	15	15	15	15
315	15	15	15	15	15	15	15	15
320	15	15	15	15	15	15	15	15
325	15	15	15	15	15	15	15	15
330	15	15	15	15	15	15	15	15
335	15	15	15	15	15	15	15	15
340	15	15	15	15	15	15	15	15
345	15	15	15	15	15	15	15	15
350	15	15	15	15	15	15	15	15
355	15	15	15	15	15	15	15	15
360	15	15	15	15	15	15	15	15
365	15	15	15	15	15	15	15	15

Thickness is board protection only. Applies to four sided box protection only.

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Table 2

I/H Column - 30 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	15	15	15	15	15	15	15	15
105	15	15	15	15	15	15	15	15
110	15	15	15	15	15	15	15	15
115	15	15	15	15	15	15	15	15
120	15	15	15	15	15	15	15	15
125	15	15	15	15	15	15	15	15
130	15	15	15	15	15	15	15	15
135	15	15	15	15	15	15	15	15
140	15	15	15	15	15	15	15	15
145	15	15	15	15	15	15	15	15
150	15	15	15	15	15	15	15	15
155	15	15	15	15	15	15	15	15
160	15	15	15	15	15	15	15	15
165	15	15	15	15	15	15	15	15
170	15	15	15	15	15	15	15	15
175	15	15	15	15	15	15	15	15
180	15	15	15	15	15	15	15	15
185	15	15	15	15	15	15	15	15
190	15	15	15	15	15	15	15	15
195	15	15	15	15	15	15	15	15
200	15	15	15	15	15	15	15	15
205	15	15	15	15	15	15	15	15
210	15	15	15	15	15	15	15	15
215	15	15	15	15	15	15	15	15
220	15	15	15	15	15	15	15	15
225	-	15	15	15	15	15	15	15
230	-	15	15	15	15	15	15	15
235	-	15	15	15	15	15	15	15
240	-	15	15	15	15	15	15	15
245	-	15	15	15	15	15	15	15
250	-	15	15	15	15	15	15	15
255	-	15	15	15	15	15	15	15
260	-	15	15	15	15	15	15	15
265	-	15	15	15	15	15	15	15
270	-	15	15	15	15	15	15	15
275	-	15	15	15	15	15	15	15
280	-	15	15	15	15	15	15	15
285	-	15	15	15	15	15	15	15
290	-	15	15	15	15	15	15	15
295	-	-	15	15	15	15	15	15
300	-	-	15	15	15	15	15	15
305	-	-	15	15	15	15	15	15
310	-	-	15	15	15	15	15	15
315	-	-	15	15	15	15	15	15
320	-	-	15	15	15	15	15	15
325	-	-	15	15	15	15	15	15
330	-	-	15	15	15	15	15	15
335	-	-	15	15	15	15	15	15
340	-	-	15	15	15	15	15	15
345	-	-	15	15	15	15	15	15
350	-	-	15	15	15	15	15	15
355	-	-	15	15	15	15	15	15
360	-	-	15	15	15	15	15	15
365	-	-	15	15	15	15	15	15

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Table 3

I/H Column - 45 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	-	15	15	15	15	15	15	15
105	-	15	15	15	15	15	15	15
110	-	15	15	15	15	15	15	15
115	-	15	15	15	15	15	15	15
120	-	-	15	15	15	15	15	15
125	-	-	15	15	15	15	15	15
130	-	-	15	15	15	15	15	15
135	-	-	15	15	15	15	15	15
140	-	-	15	15	15	15	15	15
145	-	-	15	15	15	15	15	15
150	-	-	-	15	15	15	15	15
155	-	-	-	15	15	15	15	15
160	-	-	-	15	15	15	15	15
165	-	-	-	15	15	15	15	15
170	-	-	-	15	15	15	15	15
175	-	-	-	15	15	15	15	15
180	-	-	-	-	15	15	15	15
185	-	-	-	-	15	15	15	15
190	-	-	-	-	15	15	15	15
195	-	-	-	-	15	15	15	15
200	-	-	-	-	15	15	15	15
205	-	-	-	-	15	15	15	15
210	-	-	-	-	15	15	15	15
215	-	-	-	-	-	15	15	15
220	-	-	-	-	-	15	15	15
225	-	-	-	-	-	15	15	15
230	-	-	-	-	-	15	15	15
235	-	-	-	-	-	15	15	15
240	-	-	-	-	-	15	15	15
245	-	-	-	-	-	15	15	15
250	-	-	-	-	-	-	15	15
255	-	-	-	-	-	-	15	15
260	-	-	-	-	-	-	15	15
265	-	-	-	-	-	-	15	15
270	-	-	-	-	-	-	15	15
275	-	-	-	-	-	-	15	15
280	-	-	-	-	-	-	15	15
285	-	-	-	-	-	-	-	15
290	-	-	-	-	-	-	-	15
295	-	-	-	-	-	-	-	15
300	-	-	-	-	-	-	-	15
305	-	-	-	-	-	-	-	15
310	-	-	-	-	-	-	-	15
315	-	-	-	-	-	-	-	15
320	-	-	-	-	-	-	-	15
325	-	-	-	-	-	-	-	15
330	-	-	-	-	-	-	-	15
335	-	-	-	-	-	-	-	15
340	-	-	-	-	-	-	-	15
345	-	-	-	-	-	-	-	15
350	-	-	-	-	-	-	-	15
355	-	-	-	-	-	-	-	-
360	-	-	-	-	-	-	-	-
365	-	-	-	-	-	-	-	-

Thickness is board protection only. Applies to four sided box protection only.

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Table 4

I/H Column - 60 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	-	15	15	15	15	15	15	15
70	-	15	15	15	15	15	15	15
75	-	-	15	15	15	15	15	15
80	-	-	15	15	15	15	15	15
85	-	-	15	15	15	15	15	15
90	-	-	-	15	15	15	15	15
95	-	-	-	15	15	15	15	15
100	-	-	-	15	15	15	15	15
105	-	-	-	15	15	15	15	15
110	-	-	-	-	15	15	15	15
115	-	-	-	-	15	15	15	15
120	-	-	-	-	15	15	15	15
125	-	-	-	-	-	15	15	15
130	-	-	-	-	-	15	15	15
135	-	-	-	-	-	15	15	15
140	-	-	-	-	-	15	15	15
145	-	-	-	-	-	-	15	15
150	-	-	-	-	-	-	15	15
155	-	-	-	-	-	-	15	15
160	-	-	-	-	-	-	-	15
165	-	-	-	-	-	-	-	15
170	-	-	-	-	-	-	-	15
175	-	-	-	-	-	-	-	15
180	-	-	-	-	-	-	-	15
185	-	-	-	-	-	-	-	-
190	-	-	-	-	-	-	-	-
195	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-
205	-	-	-	-	-	-	-	-
210	-	-	-	-	-	-	-	-
215	-	-	-	-	-	-	-	-
220	-	-	-	-	-	-	-	-
225	-	-	-	-	-	-	-	-
230	-	-	-	-	-	-	-	-
235	-	-	-	-	-	-	-	-
240	-	-	-	-	-	-	-	-
245	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-
255	-	-	-	-	-	-	-	-
260	-	-	-	-	-	-	-	-
265	-	-	-	-	-	-	-	-
270	-	-	-	-	-	-	-	-
275	-	-	-	-	-	-	-	-
280	-	-	-	-	-	-	-	-
285	-	-	-	-	-	-	-	-
290	-	-	-	-	-	-	-	-
295	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-
305	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-
315	-	-	-	-	-	-	-	-
320	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-
330	-	-	-	-	-	-	-	-
335	-	-	-	-	-	-	-	-
340	-	-	-	-	-	-	-	-
345	-	-	-	-	-	-	-	-
350	-	-	-	-	-	-	-	-
355	-	-	-	-	-	-	-	-
360	-	-	-	-	-	-	-	-
365	-	-	-	-	-	-	-	-

Thickness is board protection only. Applies to four sided box protection only.

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Table 5

I/H Beam Assessment - 15 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	15	15	15	15	15	15	15	15
105	15	15	15	15	15	15	15	15
110	15	15	15	15	15	15	15	15
115	15	15	15	15	15	15	15	15
120	15	15	15	15	15	15	15	15
125	15	15	15	15	15	15	15	15
130	15	15	15	15	15	15	15	15
135	15	15	15	15	15	15	15	15
140	15	15	15	15	15	15	15	15
145	15	15	15	15	15	15	15	15
150	15	15	15	15	15	15	15	15
155	15	15	15	15	15	15	15	15
160	15	15	15	15	15	15	15	15
165	15	15	15	15	15	15	15	15
170	15	15	15	15	15	15	15	15
175	15	15	15	15	15	15	15	15
180	15	15	15	15	15	15	15	15
185	15	15	15	15	15	15	15	15
190	15	15	15	15	15	15	15	15
195	15	15	15	15	15	15	15	15
200	15	15	15	15	15	15	15	15
205	15	15	15	15	15	15	15	15
210	15	15	15	15	15	15	15	15
215	15	15	15	15	15	15	15	15
220	15	15	15	15	15	15	15	15
225	15	15	15	15	15	15	15	15
230	15	15	15	15	15	15	15	15
235	15	15	15	15	15	15	15	15
240	15	15	15	15	15	15	15	15
245	15	15	15	15	15	15	15	15
250	15	15	15	15	15	15	15	15
255	15	15	15	15	15	15	15	15
260	15	15	15	15	15	15	15	15
265	15	15	15	15	15	15	15	15
270	15	15	15	15	15	15	15	15
275	15	15	15	15	15	15	15	15
280	15	15	15	15	15	15	15	15
285	15	15	15	15	15	15	15	15
290	15	15	15	15	15	15	15	15
295	15	15	15	15	15	15	15	15
300	15	15	15	15	15	15	15	15
305	15	15	15	15	15	15	15	15
310	15	15	15	15	15	15	15	15
315	15	15	15	15	15	15	15	15
320	15	15	15	15	15	15	15	15
325	15	15	15	15	15	15	15	15
330	15	15	15	15	15	15	15	15
335	15	15	15	15	15	15	15	15
340	15	15	15	15	15	15	15	15
345	15	15	15	15	15	15	15	15
350	15	15	15	15	15	15	15	15
355	15	15	15	15	15	15	15	15
360	15	15	15	15	15	15	15	15
365	15	15	15	15	15	15	15	15

Thickness is boxed board protection only, applied to 3 sided beams with a concrete slab

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Table 6

I/H Beam Assessment - 30 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻²)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	15	15	15	15	15	15	15	15
105	15	15	15	15	15	15	15	15
110	15	15	15	15	15	15	15	15
115	15	15	15	15	15	15	15	15
120	15	15	15	15	15	15	15	15
125	15	15	15	15	15	15	15	15
130	15	15	15	15	15	15	15	15
135	15	15	15	15	15	15	15	15
140	15	15	15	15	15	15	15	15
145	15	15	15	15	15	15	15	15
150	15	15	15	15	15	15	15	15
155	15	15	15	15	15	15	15	15
160	15	15	15	15	15	15	15	15
165	15	15	15	15	15	15	15	15
170	15	15	15	15	15	15	15	15
175	15	15	15	15	15	15	15	15
180	15	15	15	15	15	15	15	15
185	15	15	15	15	15	15	15	15
190	15	15	15	15	15	15	15	15
195	15	15	15	15	15	15	15	15
200	15	15	15	15	15	15	15	15
205	15	15	15	15	15	15	15	15
210	15	15	15	15	15	15	15	15
215	15	15	15	15	15	15	15	15
220	15	15	15	15	15	15	15	15
225	15	15	15	15	15	15	15	15
230	15	15	15	15	15	15	15	15
235	15	15	15	15	15	15	15	15
240	15	15	15	15	15	15	15	15
245	15	15	15	15	15	15	15	15
250	15	15	15	15	15	15	15	15
255	15	15	15	15	15	15	15	15
260	15	15	15	15	15	15	15	15
265	15	15	15	15	15	15	15	15
270	15	15	15	15	15	15	15	15
275	15	15	15	15	15	15	15	15
280	15	15	15	15	15	15	15	15
285	15	15	15	15	15	15	15	15
290	15	15	15	15	15	15	15	15
295	15	15	15	15	15	15	15	15
300	15	15	15	15	15	15	15	15
305	15	15	15	15	15	15	15	15
310	15	15	15	15	15	15	15	15
315	15	15	15	15	15	15	15	15
320	15	15	15	15	15	15	15	15
325	15	15	15	15	15	15	15	15
330	15	15	15	15	15	15	15	15
335	15	15	15	15	15	15	15	15
340	15	15	15	15	15	15	15	15
345	15	15	15	15	15	15	15	15
350	15	15	15	15	15	15	15	15
355	15	15	15	15	15	15	15	15
360	15	15	15	15	15	15	15	15
365	15	15	15	15	15	15	15	15

Thickness is boxed board protection only, applied to 3 sided beams with a concrete slab

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Table 7

I/H Beam Assessment - 45 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	15	15	15	15	15	15	15	15
105	15	15	15	15	15	15	15	15
110	15	15	15	15	15	15	15	15
115	15	15	15	15	15	15	15	15
120	15	15	15	15	15	15	15	15
125	15	15	15	15	15	15	15	15
130	15	15	15	15	15	15	15	15
135	15	15	15	15	15	15	15	15
140	15	15	15	15	15	15	15	15
145	15	15	15	15	15	15	15	15
150	15	15	15	15	15	15	15	15
155	15	15	15	15	15	15	15	15
160	15	15	15	15	15	15	15	15
165	-	15	15	15	15	15	15	15
170	-	15	15	15	15	15	15	15
175	-	15	15	15	15	15	15	15
180	-	15	15	15	15	15	15	15
185	-	15	15	15	15	15	15	15
190	-	15	15	15	15	15	15	15
195	-	-	15	15	15	15	15	15
200	-	-	15	15	15	15	15	15
205	-	-	15	15	15	15	15	15
210	-	-	15	15	15	15	15	15
215	-	-	15	15	15	15	15	15
220	-	-	15	15	15	15	15	15
225	-	-	15	15	15	15	15	15
230	-	-	15	15	15	15	15	15
235	-	-	15	15	15	15	15	15
240	-	-	15	15	15	15	15	15
245	-	-	15	15	15	15	15	15
250	-	-	-	15	15	15	15	15
255	-	-	-	15	15	15	15	15
260	-	-	-	15	15	15	15	15
265	-	-	-	15	15	15	15	15
270	-	-	-	15	15	15	15	15
275	-	-	-	15	15	15	15	15
280	-	-	-	15	15	15	15	15
285	-	-	-	15	15	15	15	15
290	-	-	-	15	15	15	15	15
295	-	-	-	15	15	15	15	15
300	-	-	-	15	15	15	15	15
305	-	-	-	15	15	15	15	15
310	-	-	-	15	15	15	15	15
315	-	-	-	15	15	15	15	15
320	-	-	-	-	15	15	15	15
325	-	-	-	-	15	15	15	15
330	-	-	-	-	15	15	15	15
335	-	-	-	-	15	15	15	15
340	-	-	-	-	15	15	15	15
345	-	-	-	-	15	15	15	15
350	-	-	-	-	15	15	15	15
355	-	-	-	-	15	15	15	15
360	-	-	-	-	15	15	15	15
365	-	-	-	-	15	15	15	15

Thickness is boxed board protection only, applied to 3 sided beams with a concrete slab

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Table 8

I/H Beam Assessment - 60 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	-	15	15	15	15	15	15	15
100	-	15	15	15	15	15	15	15
105	-	15	15	15	15	15	15	15
110	-	-	15	15	15	15	15	15
115	-	-	15	15	15	15	15	15
120	-	-	15	15	15	15	15	15
125	-	-	15	15	15	15	15	15
130	-	-	15	15	15	15	15	15
135	-	-	15	15	15	15	15	15
140	-	-	-	15	15	15	15	15
145	-	-	-	15	15	15	15	15
150	-	-	-	15	15	15	15	15
155	-	-	-	15	15	15	15	15
160	-	-	-	15	15	15	15	15
165	-	-	-	-	15	15	15	15
170	-	-	-	-	15	15	15	15
175	-	-	-	-	15	15	15	15
180	-	-	-	-	15	15	15	15
185	-	-	-	-	15	15	15	15
190	-	-	-	-	15	15	15	15
195	-	-	-	-	15	15	15	15
200	-	-	-	-	15	15	15	15
205	-	-	-	-	-	15	15	15
210	-	-	-	-	-	15	15	15
215	-	-	-	-	-	15	15	15
220	-	-	-	-	-	15	15	15
225	-	-	-	-	-	15	15	15
230	-	-	-	-	-	15	15	15
235	-	-	-	-	-	15	15	15
240	-	-	-	-	-	15	15	15
245	-	-	-	-	-	15	15	15
250	-	-	-	-	-	-	15	15
255	-	-	-	-	-	-	15	15
260	-	-	-	-	-	-	15	15
265	-	-	-	-	-	-	15	15
270	-	-	-	-	-	-	15	15
275	-	-	-	-	-	-	15	15
280	-	-	-	-	-	-	15	15
285	-	-	-	-	-	-	15	15
290	-	-	-	-	-	-	15	15
295	-	-	-	-	-	-	15	15
300	-	-	-	-	-	-	15	15
305	-	-	-	-	-	-	15	15
310	-	-	-	-	-	-	15	15
315	-	-	-	-	-	-	-	15
320	-	-	-	-	-	-	-	15
325	-	-	-	-	-	-	-	15
330	-	-	-	-	-	-	-	15
335	-	-	-	-	-	-	-	15
340	-	-	-	-	-	-	-	15
345	-	-	-	-	-	-	-	15
350	-	-	-	-	-	-	-	15
355	-	-	-	-	-	-	-	15
360	-	-	-	-	-	-	-	15
365	-	-	-	-	-	-	-	15

Thickness is boxed board protection only, applied to 3 sided beams with a concrete slab

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Table 9

Square/Rectangular Hollow Columns - 15 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	15	15	15	15	15	15	15	15
105	15	15	15	15	15	15	15	15
110	15	15	15	15	15	15	15	15
115	15	15	15	15	15	15	15	15
120	15	15	15	15	15	15	15	15
125	15	15	15	15	15	15	15	15
130	15	15	15	15	15	15	15	15
135	15	15	15	15	15	15	15	15
140	15	15	15	15	15	15	15	15
145	15	15	15	15	15	15	15	15
150	15	15	15	15	15	15	15	15
155	15	15	15	15	15	15	15	15
160	15	15	15	15	15	15	15	15
165	15	15	15	15	15	15	15	15
170	15	15	15	15	15	15	15	15
175	15	15	15	15	15	15	15	15
180	15	15	15	15	15	15	15	15
185	15	15	15	15	15	15	15	15
190	15	15	15	15	15	15	15	15
195	15	15	15	15	15	15	15	15
200	15	15	15	15	15	15	15	15
205	15	15	15	15	15	15	15	15
210	15	15	15	15	15	15	15	15
215	15	15	15	15	15	15	15	15
220	15	15	15	15	15	15	15	15
225	15	15	15	15	15	15	15	15
230	15	15	15	15	15	15	15	15
235	15	15	15	15	15	15	15	15
240	15	15	15	15	15	15	15	15
245	15	15	15	15	15	15	15	15
250	15	15	15	15	15	15	15	15
255	15	15	15	15	15	15	15	15
260	15	15	15	15	15	15	15	15
265	15	15	15	15	15	15	15	15
270	15	15	15	15	15	15	15	15
275	15	15	15	15	15	15	15	15
280	15	15	15	15	15	15	15	15
285	15	15	15	15	15	15	15	15
290	15	15	15	15	15	15	15	15
295	15	15	15	15	15	15	15	15
300	15	15	15	15	15	15	15	15
305	15	15	15	15	15	15	15	15
310	15	15	15	15	15	15	15	15
315	15	15	15	15	15	15	15	15
320	15	15	15	15	15	15	15	15
325	15	15	15	15	15	15	15	15
330	15	15	15	15	15	15	15	15
335	15	15	15	15	15	15	15	15
340	15	15	15	15	15	15	15	15
345	15	15	15	15	15	15	15	15
350	15	15	15	15	15	15	15	15
355	15	15	15	15	15	15	15	15
360	15	15	15	15	15	15	15	15
365	15	15	15	15	15	15	15	15

Thickness is board protection only. Applies to four sided box protection only.

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Table 10

Square/Rectangular Hollow Columns - 30 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻³)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	15	15	15	15	15	15	15	15
105	15	15	15	15	15	15	15	15
110	15	15	15	15	15	15	15	15
115	15	15	15	15	15	15	15	15
120	15	15	15	15	15	15	15	15
125	15	15	15	15	15	15	15	15
130	15	15	15	15	15	15	15	15
135	15	15	15	15	15	15	15	15
140	15	15	15	15	15	15	15	15
145	15	15	15	15	15	15	15	15
150	15	15	15	15	15	15	15	15
155	15	15	15	15	15	15	15	15
160	15	15	15	15	15	15	15	15
165	15	15	15	15	15	15	15	15
170	15	15	15	15	15	15	15	15
175	15	15	15	15	15	15	15	15
180	15	15	15	15	15	15	15	15
185	15	15	15	15	15	15	15	15
190	15	15	15	15	15	15	15	15
195	15	15	15	15	15	15	15	15
200	15	15	15	15	15	15	15	15
205	15	15	15	15	15	15	15	15
210	15	15	15	15	15	15	15	15
215	15	15	15	15	15	15	15	15
220	15	15	15	15	15	15	15	15
225	-	15	15	15	15	15	15	15
230	-	15	15	15	15	15	15	15
235	-	15	15	15	15	15	15	15
240	-	15	15	15	15	15	15	15
245	-	15	15	15	15	15	15	15
250	-	15	15	15	15	15	15	15
255	-	15	15	15	15	15	15	15
260	-	15	15	15	15	15	15	15
265	-	15	15	15	15	15	15	15
270	-	15	15	15	15	15	15	15
275	-	15	15	15	15	15	15	15
280	-	15	15	15	15	15	15	15
285	-	15	15	15	15	15	15	15
290	-	15	15	15	15	15	15	15
295	-	-	15	15	15	15	15	15
300	-	-	15	15	15	15	15	15
305	-	-	15	15	15	15	15	15
310	-	-	15	15	15	15	15	15
315	-	-	15	15	15	15	15	15
320	-	-	15	15	15	15	15	15
325	-	-	15	15	15	15	15	15
330	-	-	15	15	15	15	15	15
335	-	-	15	15	15	15	15	15
340	-	-	15	15	15	15	15	15
345	-	-	15	15	15	15	15	15
350	-	-	15	15	15	15	15	15
355	-	-	15	15	15	15	15	15
360	-	-	15	15	15	15	15	15
365	-	-	15	15	15	15	15	15

Thickness is board protection only. Applies to four sided box protection only.

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Table 11

Square/Rectangular Hollow Columns - 45 Minutes Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	15	15	15	15	15	15	15	15
70	15	15	15	15	15	15	15	15
75	15	15	15	15	15	15	15	15
80	15	15	15	15	15	15	15	15
85	15	15	15	15	15	15	15	15
90	15	15	15	15	15	15	15	15
95	15	15	15	15	15	15	15	15
100	-	15	15	15	15	15	15	15
105	-	15	15	15	15	15	15	15
110	-	15	15	15	15	15	15	15
115	-	15	15	15	15	15	15	15
120	-	-	15	15	15	15	15	15
125	-	-	15	15	15	15	15	15
130	-	-	15	15	15	15	15	15
135	-	-	15	15	15	15	15	15
140	-	-	15	15	15	15	15	15
145	-	-	15	15	15	15	15	15
150	-	-	-	15	15	15	15	15
155	-	-	-	15	15	15	15	15
160	-	-	-	15	15	15	15	15
165	-	-	-	15	15	15	15	15
170	-	-	-	15	15	15	15	15
175	-	-	-	15	15	15	15	15
180	-	-	-	-	15	15	15	15
185	-	-	-	-	15	15	15	15
190	-	-	-	-	15	15	15	15
195	-	-	-	-	15	15	15	15
200	-	-	-	-	15	15	15	15
205	-	-	-	-	15	15	15	15
210	-	-	-	-	15	15	15	15
215	-	-	-	-	-	15	15	15
220	-	-	-	-	-	15	15	15
225	-	-	-	-	-	15	15	15
230	-	-	-	-	-	15	15	15
235	-	-	-	-	-	15	15	15
240	-	-	-	-	-	15	15	15
245	-	-	-	-	-	15	15	15
250	-	-	-	-	-	-	15	15
255	-	-	-	-	-	-	15	15
260	-	-	-	-	-	-	15	15
265	-	-	-	-	-	-	15	15
270	-	-	-	-	-	-	15	15
275	-	-	-	-	-	-	15	15
280	-	-	-	-	-	-	15	15
285	-	-	-	-	-	-	-	15
290	-	-	-	-	-	-	-	15
295	-	-	-	-	-	-	-	15
300	-	-	-	-	-	-	-	15
305	-	-	-	-	-	-	-	15
310	-	-	-	-	-	-	-	15
315	-	-	-	-	-	-	-	15
320	-	-	-	-	-	-	-	15
325	-	-	-	-	-	-	-	15
330	-	-	-	-	-	-	-	15
335	-	-	-	-	-	-	-	15
340	-	-	-	-	-	-	-	15
345	-	-	-	-	-	-	-	15
350	-	-	-	-	-	-	-	15
355	-	-	-	-	-	-	-	-
360	-	-	-	-	-	-	-	-
365	-	-	-	-	-	-	-	-

Thickness is board protection only. Applies to four sided box protection only.

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Table 12

Square/Rectangular Hollow Columns - 60 Minutes								
Required Thickness (mm) for a design temperature (°C)								
Section Factor (m ⁻¹)	300	350	400	450	500	550	600	650
55	15	15	15	15	15	15	15	15
60	15	15	15	15	15	15	15	15
65	-	15	15	15	15	15	15	15
70	-	15	15	15	15	15	15	15
75	-	-	15	15	15	15	15	15
80	-	-	15	15	15	15	15	15
85	-	-	15	15	15	15	15	15
90	-	-	-	15	15	15	15	15
95	-	-	-	15	15	15	15	15
100	-	-	-	15	15	15	15	15
105	-	-	-	15	15	15	15	15
110	-	-	-	-	15	15	15	15
115	-	-	-	-	15	15	15	15
120	-	-	-	-	15	15	15	15
125	-	-	-	-	-	15	15	15
130	-	-	-	-	-	15	15	15
135	-	-	-	-	-	15	15	15
140	-	-	-	-	-	15	15	15
145	-	-	-	-	-	-	15	15
150	-	-	-	-	-	-	15	15
155	-	-	-	-	-	-	15	15
160	-	-	-	-	-	-	-	15
165	-	-	-	-	-	-	-	15
170	-	-	-	-	-	-	-	15
175	-	-	-	-	-	-	-	15
180	-	-	-	-	-	-	-	15
185	-	-	-	-	-	-	-	-
190	-	-	-	-	-	-	-	-
195	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-
205	-	-	-	-	-	-	-	-
210	-	-	-	-	-	-	-	-
215	-	-	-	-	-	-	-	-
220	-	-	-	-	-	-	-	-
225	-	-	-	-	-	-	-	-
230	-	-	-	-	-	-	-	-
235	-	-	-	-	-	-	-	-
240	-	-	-	-	-	-	-	-
245	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-
255	-	-	-	-	-	-	-	-
260	-	-	-	-	-	-	-	-
265	-	-	-	-	-	-	-	-
270	-	-	-	-	-	-	-	-
275	-	-	-	-	-	-	-	-
280	-	-	-	-	-	-	-	-
285	-	-	-	-	-	-	-	-
290	-	-	-	-	-	-	-	-
295	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-
305	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-
315	-	-	-	-	-	-	-	-
320	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-
330	-	-	-	-	-	-	-	-
335	-	-	-	-	-	-	-	-
340	-	-	-	-	-	-	-	-
345	-	-	-	-	-	-	-	-
350	-	-	-	-	-	-	-	-
355	-	-	-	-	-	-	-	-
360	-	-	-	-	-	-	-	-
365	-	-	-	-	-	-	-	-

Thickness is board protection only. Applies to four sided box protection only.

Signed
C/039



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Issued: 22nd January 2021
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