
CERTIFICATE OF APPROVAL

No CF 422

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

PROMAT UK LTD

The Sterling Centre, Eastern Road, Bracknell, Berkshire, RG12 2TD
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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 250 board

TECHNICAL SCHEDULE
TS14 Board/Spray Protection
for Steelwork

Signed and sealed for and on behalf of Exova (UK) Limited trading as
Warrington Certification



Sir Ken Knight
Chairman
Impartiality Committee



Paul Duggan
Certification Manager



Issued: 4th May 2006
Reissued: 16th September 2016
Valid to: 15th September 2021

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Promatect 250 board

1. This approval relates to the use of Promatect 250 board for the fire protection of I-shaped and hollow steel sections, structural tees, angles and channels. The precise scope is given in Tables 1 to 18 which show the thickness of Promatect 250 board required to provide fire resistance periods in accordance with BS476: Part 21: 1987 of up to 150 minutes for differing sections and section factors (A/V) at various critical steel temperatures.
2. This certification is designed to demonstrate compliance of the product or system specifically with Approved Document B (England and Wales), Section 2 of the Technical Standards (Scotland), Technical Booklet E (N. Ireland). If compliance is required to other regulatory or guidance documents there may be additional considerations or conflict to be taken into account.'
3. The product is approved on the basis of:
 - i) Initial type testing
 - ii) Audit testing at the frequency specified in TS14
 - iii) A design appraisal against TS14
 - iv) Inspection and surveillance of factory production control
 - v) Production surveillance under ISO 9001:2008
4. The data at a critical steel temperature of 550°C relate to beams and columns with fire exposure on one, two, three or four sides. The data at a critical steel temperature of 620°C relate to beams, supporting concrete floor slabs, with fire exposure on three sides. The data is applicable to Promatect 250 board applied as a box protection to horizontal, vertical, flexural and compression members supporting loads up to the maximum design loads specified in BS449: Part 2. Separate consideration is required where this is not the case.
5. The data at critical steel temperatures of 350°C, 400°C, 450°C, 500°C, 550°C, 600°C, 620°C, 650°C and 700°C relate to beams and columns with fire exposure on one, two, three or four sides. The data is applicable to Promatect 250 board applied as a box protection to horizontal, vertical, flexural and compression members. The critical steel temperature is determined from BS5950: Part 8 depending on the load ratio applied to the member. Separate consideration is required where this is not the case.
6. 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.

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Promatect 250 board

Application technique

For four-sided column casings Promatect 250 soldiers are wedged between the flanges at the top and bottom of the column. The soldiers are 120mm wide x casing thickness. The boards are fixed to the soldiers and to each other using steel staples, 50mm long x 12.5mm wide x 1.6mm thick, at 150mm centres. The end staples are located nominally 40mm from the corner of the board. Soldiers may be fitted behind board joints as an option. Cover strips are not required over joints in the boards covering the flanges. Board to board joints on adjacent sides are staggered by at least 530mm. For single layer boards 12 or 15mm thick the length of the staples may be reduced to 35mm.

For three-sided beam casings the fixing method is the same except that the soldiers are required to be fitted at the ends of the beam and at maximum 1250mm centres and the soffit board is fitted between the side boards. Soldiers must coincide with board joints.

For double-layer casings, the first layer is the thicker of the two layers and is fixed as a single-layer casing. The outer layer is then secured through the first layer into the soldiers and to each other using staples, 50mm long, at 150mm centres. Board joints are staggered between layers by at least 530mm.

On steel sections up to 400mm deep, the soldiers may be cut in half, with the cut sloping by 5mm from side to side, and the two parts tapped together to wedge the soldier in position. For steel sections deeper than 400mm and up to 686mm deep, each soldier is strengthened using a Promatect 250 stiffener to form a T-shaped soldier. The stiffener is the same thickness as the standard soldier and is wedged between the flanges. The standard soldier is stapled to the outer edge of the stiffener to form the T-shaped soldier.

For steel sections deeper than 686mm and up to 1000mm deep, each soldier is strengthened using a Promatect 250 stiffener to form a T-shaped soldier. The stiffener is glued and stapled to the soldier using Vicubond adhesive. The stiffener is the same thickness as the standard soldier. The T-shaped soldiers are glued in position in the steel section using Vicubond adhesive and the Promatect 250 facing boards stapled to the T-shaped soldiers, as per the standard fixing recommendations.

Alternatively, for steel sections up to 1200mm deep, the framed casing arrangement may be used, as detailed below.

The application technique for four-sided beam casings is the same as for three-sided beam casings with the addition of the board protection on top of the beam, fitted between the side boards.

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Promatect 250 board

As an alternative to using Promatect 250 soldiers, for steel sections up to 686mm deep, the side boards may be secured using continuous galvanised steel angles, 32mm x 18mm x 0.8mm thick, or equivalent. The angles are fastened to the steel beam or column with minimum M4 steel screws at 500mm maximum centres. The boards are fastened to the angles with steel drywall screws at 200mm nominal centres. Board to board side panel joints are backed with Promatect 250 cover strips, 120mm wide x 15mm thick, fastened with staples.

3 and 4-sided framed casing to deep web beams greater than 686mm deep

The construction of the framed casings for deep web beams greater than 686mm deep is shown in Figure 1.

Framing: 32mm x 52mm x 32mm x 0.5mm steel channel fixed to the underside of the top flanges and the upper side of the bottom flanges of the steel beam. Vertical steel channels, 32mm x 52mm x 32mm x 0.5mm, are fitted into the horizontal channels at 1250mm centres.

Fixings:

Channel to flange: shot fired 3.7mm x 16mm steel nails (Hilti ENK 16 S12 or equivalent) or self-tapping 9.5mm x No.8 panhead screws at 500mm maximum centres.

Board to channels: No. 8 countersunk self-tapping hardened steel or dry wall screws at nominal 200mm centres. Screw length should allow minimum of 10mm penetration through the channel.

Board to board: steel staples, 50mm long x 12.5mm wide x 1.6mm thick, at 150mm centres. The end staples are located nominally 40mm from the corner of the board. Board to board joints on adjacent sides are staggered by at least 530mm. For single layer boards 12 or 15mm thick the length of the staples may be reduced to 35mm.

Cover strips:

Promatect 250 internal cover strips, 100mm wide x minimum thickness of the side panels, at the position of vertical board joints in the Promatect 250 side panels. The side panels are fastened to the cover strips, on both sides of the joint, with steel staples, 50mm long x 12.5mm wide x 1.6mm thick, at 150mm centres. The soffit panels are fitted between the side panels and fastened with steel staples, 50mm long x 12.5mm wide x 1.6mm thick, at 150mm centres. For single layer boards 12 or 15mm thick the length of the staples may be reduced to 35mm.

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For double-layer casings, the first layer is the thicker of the two layers and is fixed as a single-layer casing. The outer layer is then secured through the first layer into the vertical and top flange channels using No. 8 countersunk self-tapping hardened steel or dry wall screws at nominal 200mm centres. The outer layer is also fastened to the inner layer around the top and side perimeters of each panel using staples, 50mm long, at 150mm centres. The soffit panels of the outer layer are fitted between the side panels in the same way as for the inner layer. Board joints are staggered between layers by at least 530mm.

For beams with lower flange widths over 325mm up to 600mm additional support is provided for the Promatect 250 soffit boards using steel Z-sections at 610mm centres. The fixings for the Z-section to steel flange and for the soffit board to the Z-section are the same as for the channel.

4-sided casing:

The 4-sided casing is the same as for the 3-sided casing except that the side panels extend above the steel beams for the thickness of the board and Promatect 250 boards are fitted between the side panels to protect the top of the beam. The staple fixings are the same as for other board to board joints. No joint cover strips are required.

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Table 1

Beams – critical steel temperature 550°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	177				12
		260	102			15
			135			18
			162	92		20
			192	106		22
			249	129	87	25
			260	176	114	30 or (15 + 15)
				211	132	33 (15 + 18)
				238	146	35 (15 + 20)
				260	168	38 (18 + 20)

Table applies to beams with concrete slabs.

Table 2

Columns – critical steel temperature 550°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	209	82			12
		260	114	68		15
			153	87	61	18
			185	102	70	20
			223	118	80	22
			260	145	96	25
				201	126	30 or (15 + 15)
				243	147	33 (15 + 18)
				260	163	35 (15 + 20)
					190	38 (18 + 20)

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Promatect 250 board

Table 3

Beams – critical steel temperature 620°C						
Section factor A/V – m⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	260				12
			115			15
			173			18
			232	94		20
			260	113		22
				149	85	25
				243	120	30 or (15 + 15)
				260	148	33 (15 + 18)
				171	35 (15 + 20)	
				213	38 (18 + 20)	

Table applies to beams with concrete slabs.

Table 4

Columns – critical steel temperature 620°C						
Section factor A/V – m⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	260	91			12
			142	67		15
			227	92	57	18
			260	112	68	20
				137	79	22
				186	99	25
				260	144	30 or (15 + 15)
					182	33 (15 + 18)
				214	35 (15 + 20)	
				260	38 (18 + 20)	

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Table 5

Beams – critical steel temperature 350°C						
Section factor $A/V - m^{-1}$	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	77				12
		117	55			15
		180	73			18
		245	88	53		20
		260	105	62		22
			138	76	53	25
			221	106	70	30 or (15 + 15)
			260	130	82	33 (15 + 18)
				149	92	35 (15 + 20)
				183	107	38 (18 + 20)

Table applies to beams with concrete slabs.

Table 6

Columns – critical steel temperature 350°C						
Section factor $A/V - m^{-1}$	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	77	40			12
		117	55	36		15
		180	73	46	33	18
		245	88	53	38	20
		260	105	62	44	22
			138	76	53	25
			221	106	70	30 or (15 + 15)
			260	130	82	33 (15 + 18)
				149	92	35 (15 + 20)
				183	107	38 (18 + 20)

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Table 7

Beams – critical steel temperature 400°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
260	96					12
	148	65				15
	232	88				18
	260	105	63			20
		126	73			22
		166	90	62		25
		260	126	82		30 or (15 + 15)
			153	96		33 (15 + 18)
			176	107		35 (15 + 20)
			216	125		38 (18 + 20)

Table applies to beams with concrete slabs.

Table 8

Columns – critical steel temperature 400°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
260	98	48				12
	153	67	43			15
	241	89	55	40		18
	260	108	64	46		20
		130	74	52		22
		171	92	63		25
		260	129	83		30 or (15 + 15)
			157	98		33 (15 + 18)
			181	109		35 (15 + 20)
			223	128		38 (18 + 20)

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Table 9

Beams – critical steel temperature 450°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
260		116				12
		179	76			15
		260	102			18
			122	72		20
			146	83		22
			191	102	70	25
			260	142	92	30 or (15 + 15)
				173	108	33 (15 + 18)
				197	120	35 (15 + 20)
				241	140	38 (18 + 20)

Table applies to beams with concrete slabs.

Table 10

Columns – critical steel temperature 450°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
260		125	58			12
		196	81	51		15
		260	108	65	47	18
			131	76	54	20
			158	88	61	22
			209	109	74	25
			260	153	98	30 or (15 + 15)
				187	115	33 (15 + 18)
				215	128	35 (15 + 20)
				260	151	38 (18 + 20)

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Table 11

Beams – critical steel temperature 500°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
260	138					12
	249	80				15
	260	113				18
		141	75			20
		178	88			22
		258	112	71		25
		260	168	98		30 or (15 + 15)
			218	119		33 (15 + 18)
			260	135		35 (15 + 20)
				163		38 (18 + 20)

Table applies to beams with concrete slabs.

Table 12

Columns – critical steel temperature 500°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
260	164	62				12
	260	90	53			15
		130	70	48		18
		165	83	56		20
		214	99	64		22
		260	128	79		25
			199	111		30 or (15 + 15)
			260	136		33 (15 + 18)
				155		35 (15 + 20)
				192		38 (18 + 20)

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Table 13

Beams – critical steel temperature 600°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	260				12
			108			15
			158			18
			206	91		20
			260	109		22
				141	84	25
				222	117	30 or (15 + 15)
				260	142	33 (15 + 18)
					162	35 (15 + 20)
					200	38 (18 + 20)

Table applies to beams with concrete slabs.

Table 14

Columns – critical steel temperature 600°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	260	86			12
			131	66		15
			201	88	57	18
			260	107	67	20
				129	77	22
				172	97	25
				260	138	30 or (15 + 15)
					172	33 (15 + 18)
					200	35 (15 + 20)
					253	38 (18 + 20)

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Table 15

Beams – critical steel temperature 650°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	260				12
			124			15
			193			18
			260	97		20
				117		22
				157	86	25
				260	123	30 or (15 + 15)
					152	33 (15 + 18)
					177	35 (15 + 20)
					224	38 (18 + 20)

Table applies to beams with concrete slabs.

Table 16

Columns – critical steel temperature 650°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	260	98			12
			158	69		15
			260	95	57	18
				117	68	20
				144	80	22
				201	101	25
				260	150	30 or (15 + 15)
					191	33 (15 + 18)
					228	35 (15 + 20)
					260	38 (18 + 20)

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Table 17

Beams – critical steel temperature 700°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	260				12
			128			15
			212			18
			260	94		20
				114		22
				156	80	25
				260	117	30 or (15 + 15)
					147	33 (15 + 18)
					172	35 (15 + 20)
					222	38 (18 + 20)

Table applies to beams with concrete slabs.

Table 18

Columns – critical steel temperature 700°C						
Section factor A/V – m ⁻¹	Fire resistance period - minutes					Board thickness -mm
	30	60	90	120	150	
	260	260	111			12
			197	70		15
			260	100	57	18
				126	68	20
				160	80	22
				237	103	25
				260	159	30 or (15 + 15)
					211	33 (15 + 18)
					259	35 (15 + 20)
					260	38 (18 + 20)

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Figure 1 3-sided casing to deep web beams over 686mm deep

