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YELLOW BOOK

Fire protection for structural steel in buildings 4th Edition

(Volume 2: Part 1: Boards)

Amendments to Vol 2: Section 10:1 Product Data Sheets – Boards

DATE	SECTION	AMENDMENT SUMMARY	SOURCE
19/07/07	10:1	CAFECO BOARD: Top table add 'Critical temperature 550C' / Bottom table – change heading to 'Columns' and add 'critical temperature 550C'	BP
19/07/07	10:1	FIREPRO BEAMCLAD: Remove extraneous figures from Beams (4-sided) Glued	BP
26/10/08	10.1	CAFECO BOARD Product removed	BP
26/10/08	10.1	PROMALIT Name changed to PROMAT TD BOARD®	BP
07/10/09	10.1	Repagination of section	BP
30/03/10	Cover	New cover for separate volumes	NR
18/06/18	10.1	PAROC LTD Fire Steel Protect Data entry added	AT
26/09/18	10.1	Changes to Promat contact details	AGM

Note 1:

Amendments may only be inserted by ASFP Secretariat with approval of the ASFP Technical Officer.

SECTION 10:1
BOARDS

List of product data sheets

BRITISH GYPSUM GYPLYNER™ ENCASE
COLUMNCLAD
FIREPRO BEAMCLAD SYSTEMS
GLASROC FIRECASE S
KNAUF FIREBOARD
INTUTEC
PAROC LTD
PROMAT TD BOARD®
PROMATECT® 250
ROCKSILK FIRETECH SLAB AND ROCKSILK DRY FIX NOGGIN SLAB
SUPALUX®
VERMICULUX®

This volume should be read in conjunction with Volume 1, available to download from www.asfp.org.uk

BRITISH GYPSUM GYPLYNER™ ENCASE

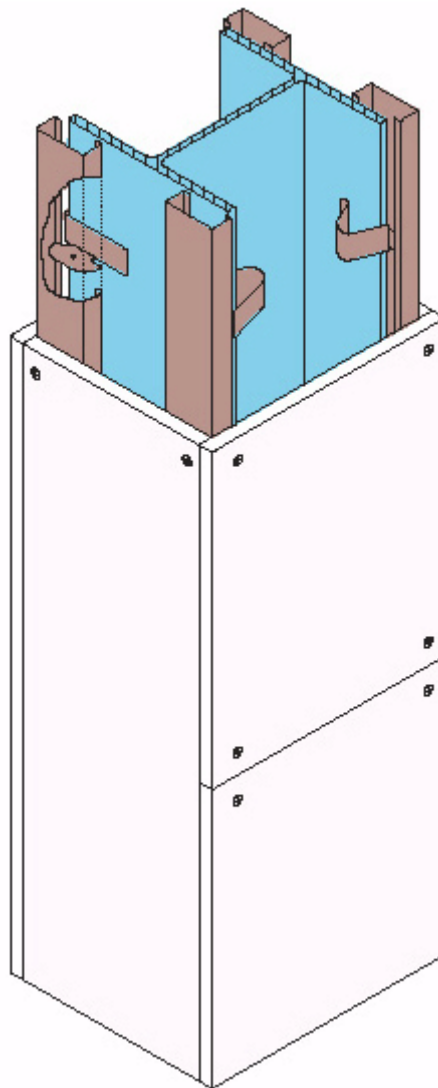
- 1. Product description**
Gyproc FireLine Board - Gypsum plasterboard containing glass fibre and other additives in the core
- 2. Manufacturer**
British Gypsum Limited
East Leake, Loughborough, Leicestershire LE12 6JT
T: 08705 456 123
F: 08705 456 356 W: www.british-gypsum.com
- 3. Availability**
Main stockists and builders merchants
- 4. Protection technique**
Box
- 5. Application technique**
The boards are secured to a galvanised steel framework using Gyproc Drywall Screws. The framework comprises Gyproframe GypLyner GL1 Lining Channels, attached to the steel section using Gyproframe GypLyner GL10 Steel Framing Clips at 800mm centres. Up to three layers of board may be used, all surface joints are filled, reinforced and finished using Gyproc jointing compounds and tapes.
- 6. Steel preparation requirements**
None
- 7. Additional mechanical fixing**
On beams the steel support angles are shot fired on to the beam flange or concrete floor soffit
- 8. Nominal density**
900kg/m²
- 9. Thickness Range**
12.5mm and 15mm
- 10. Fire resistance range**
Up to 2 hours
Hp/A 17 – 260m⁻¹ for compression members
Hp/A 17 – 230m⁻¹ for flexural members
- 11. Constraints for fire resistance**
Minimum thickness – 12.5mm
Maximum thickness – 42.5mm
- 12. Appearance**
Pink paper liner suitable to receive most forms of decoration
- 13. On site use**
For internal applications only
- 14. Durability**
Resistant to vermin and mould growth, minor impact and abrasion
- 15. Performance in other BS fire tests**
BS476-7 – Class 1; BS476-6 – Fire propagation – indices of performance I not exceeding 12 and a sub-index i₁ not exceeding 6.
- 16. Other applications**
Internal lining of buildings (c) Fire protecting ceilings
Fire resisting partition and wall construction (d) Cavity barriers

BRITISH GYPSUM GYPLYNER™ ENCASE

Section factor Hp/A (m-1)	Fire resistance period (minutes) 550 degrees C				Product thickness
	30	60	90	120	
260	165				12.5mm
	195				15mm
	260	200			12.5 + 12.5mm
		260			15 + 12.5mm
			110		15 + 15mm
			190		12.5 + 12.5 + 12.5mm
			225		15 + 12.5 + 12.5mm
			260		15 + 15 + 12.5mm

BS 476: Part 20: 1987

The data provided complies with the principles in Sections 3 and 4 of this Yellow Book



COLUMNCLAD

1. Product description

Gypsum based type 5F, moisture resistant rigid board, reinforced with glass fibre and vermiculite, with a non-combustible mineral tissue surface.

2. Supplier

Rockwool Ltd

Pencoed, Bridgend CF35 6NY

T: 01656 862621

F: 01656 862302

W: www.rockwool.co.uk

3. Availability

National network of Rockwool distributors – contact Supplier for list. Recommended to be fixed by specialist fire protection contractors.

4. Protection technique

Box

5. Application technique

4-sided column encasement – 100mm wide ColumnClad noggins wedged between flanges, behind board joints (at 1.8m maximum centres) and at head and base of column. Facing boards fixed to noggins and each other using 50mm staples at 150mm centres.

3-sided beam encasement – secure 25mm x 25mm steel angles to top flanges of beam.

Insert noggins between flanges at 900mm maximum centres and behind board joints. Screw fix facing boards to metal angles at 300mm centres. Facing boards fixed to noggins and each other using 50mm staples at 150mm centres.

Double layer encasement – Where 15mm and 20mm boards are required, apply 20mm layer first.

6. Steel preparation

None required

7. Maximum density

900kg/m³

8. Thickness available

15 and 20mm

9. Fire resistance range

a) 1½ hours – Hp/A up to 260

b) 2 hours – Columns (critical temperature 550°C) - Hp/A up to 260

Beams (critical temperatures 550°C & 620°C) - Hp/A up to 218

10. Appearance

Flat, white mineral tissue surface which can be decorated directly; or by applying a plaster skim coat prior to decoration.

11. On site use

For internal use only. If subjected to moisture during installation, prior to the building envelope being sealed, the boards will regain their strength and fire resistance when allowed to dry naturally.

12. Durability

Resistant to vermin, mould growth and moisture tolerant.

Impact resistant to BS 5234/2 – 15mm severe duty, 20mm severe duty.

13. Performance in other BS tests

BS 476:Part 4 – Non combustible (Reaction to Fire)

BS EN 13501-1 – Euroclass A1 (Reaction to Fire)

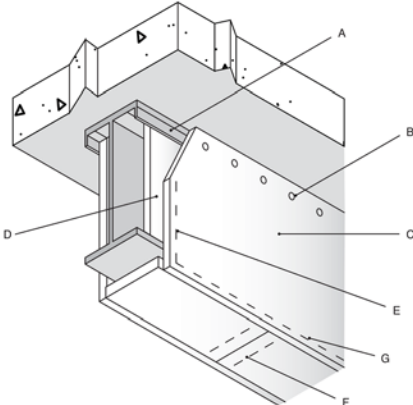
BS EN ISO 9002 – Quality assured

14. Specification of system

Typical specifications available from data sheet – refer to supplier

COLUMNCLAD

	BEAMS								Product thickness
	3 sided protection In contact with, and fixed to, concrete floor decks				3 & 4 sided protection and other configurations				
	Critical temperature: 620°C				Critical temperature: 550°C				
	Fire resistance period (minutes)								
	30	60	90	120	30	60	90	120	
Section factor Hp/A (m ⁻¹)	260	260	-	-	260	260	-	-	15mm
			159	-			148	-	20mm
			260	165			260	157	30mm
				218				218	35mm
Tested and assessed to BS 476:Part 21									



A - Continuous 25x25mm lightweight metal angle, shot fired or spot welded to top flange of beam

B - Encasement board fixed to metal angle at 300mm max. centres using grabber self-tapping screws

C - Columnclad encasement board. Ensure that adjacent board joints are staggered by at least 300mm.

D - 100mm wide (15 or 20mm thick) Columnclad noggings friction fitted into web at max. 900mm centres and behind vertical board joints. Stagger position of noggins on opposite webs.

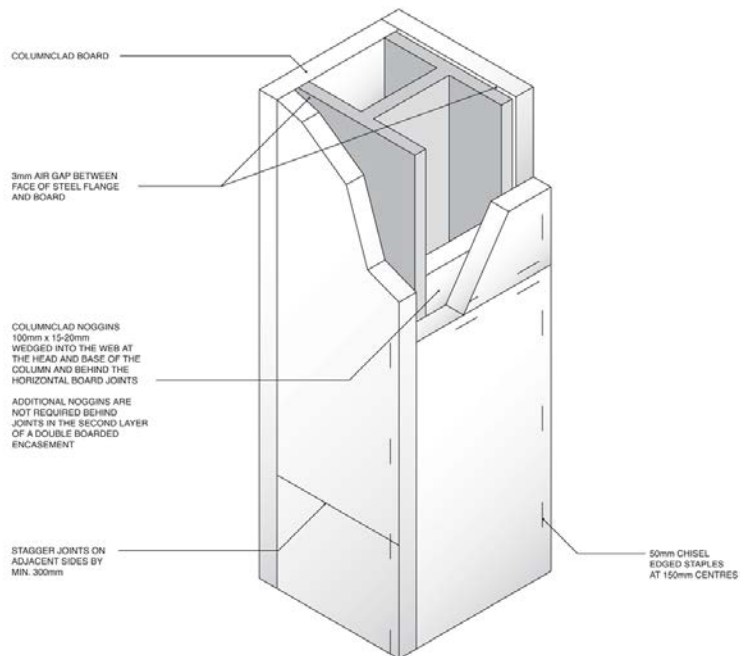
E - Columnclad encasement stable fixed to web noggins at max. 150mm centres

F - 100mm wide Columnclad noggins located at 900mm centres and behind soffit board joints.

G - Board to board fixings using 50mm chisel edged stabiles at max. 150mm centres

Beams – 3 sided Box

	COLUMNS				Product thickness
	3 & 4 sided protection and other configurations				
	Critical temperature: 550°C				
	Fire resistance period (minutes)				
	30	60	90	120	
Section factor Hp/A (m ⁻¹)	260	260	113	63	15mm
			198	96	20mm
			260	206	30mm
				260	35mm
Tested and assessed to BS 476:Part 21					



The data provided complies with the principles in Sections 3 and 4 of this Yellow Book

FIREPRO BEAMCLAD SYSTEMS

1. Product description

Resin bonded rock fibre rigid insulation

2. Manufacture

Rockwool Ltd, Pencoed, Bridgend, Mid Glamorgan CF35 6NY

T: 01656 862621

E: info@rockwool.co.uk

F: 01656 862302

W: www.rockwool.co.uk

3. Availability

Main insulation stockists – contact Manufacturer for list. Fixing by recognised fire protection contractors.

4. Protection technique

Box or profile

5. Application techniques

- a) **Clip fixing and/or stud welded pins, spiral screws with dry joints:** Friction fitted clips or stud welded pins at 600mm maximum centres to top flange / 900mm to bottom flange, and board retained with non-returnable spring washers. Spiral screw fixings applied between web boards and flange soffit boards at 150mm maximum centres.
- b) **Glued noggins with dry joints:** Beamclad noggins (see 7 below) glued into webs at 1000mm maximum centres. Facing boards retained with spiral screw fixings at 100mm maximum centres. Joints between web boards and flange soffit boards sealed with spiral screw fixings at 200mm maximum centres.
- c) **Stud welded pins & glued joints:** Stud welded pins to flange tips at 600mm maximum centres to top flange/900mm to bottom flange, and boards retained with non-returnable spring washers. All board-to-board joints filled with Firepro glue and secured with nails at 400mm maximum centres.
- d) **Glued noggins and glued joints:** Noggins applied as in (b) above. Facing boards to noggins with Firepro glue and nailed at 150mm maximum centres. All board-to-board joints filled with Firepro glue and secured with nails at 400mm maximum centres.

6. Steel preparation requirements

Steel must be degreased and rust or loose scale removed where adhesive is to be applied.

7. Additional mechanical fixing

For all sections deeper than 500mm, and up to 1000mm, with a maximum width of 419mm, T-shaped or full depth (flange tip to web) noggins of Beamclad must be used. Up to, and including 500mm web depths, noggins of 120mm width and the same thickness as the facing board are acceptable.

8. Nominal density

165 – 180kg/m³

9. Thickness range

25 – 100mm

10. Fire resistance range

- (a) Time - up to 4 hours
- (b) Hp/A – up to 260 m⁻¹

11. Constraints for fire resistance

- (a) Dry joint systems up to 2 hours fire resistance
- (b) 110mm maximum overall thickness – ply two boards to achieve

12. Appearance

Three finishes available

- (a) Plain green/brown textured surface – Beamclad (Plain)
- (b) Black or White glass tissue faced - Beamclad (Tissue Faced)
- (c) Reinforced aluminium foil faced - Beamclad (Foil Faced)

13. On site use

For internal and weather protected external surfaces

14. Durability

Water repellent, resistant to vermin and mould growth.

The choice of surface facings provides the opportunity to match other service finishes in the plenum area.

Additional protection may be necessary to provide increased resistance to impact and abrasion.

15. Reaction to Fire performance

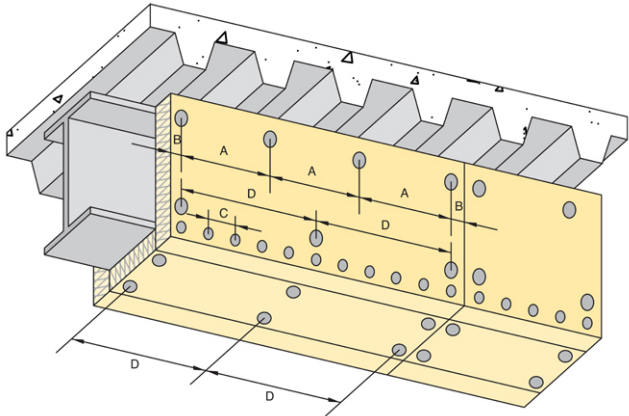
All product versions – Non-combustible and Class 0, as defined in UK and Ireland Building Regulations

FIREPRO BEAMCLAD SYSTEMS

Clips or Stud welded pins, Dry joint system									Glued noggins. Dry joint system								
BEAMS				BEAMS AND COLUMNS				BEAMS				BEAMS AND COLUMNS				Product thickness	
3 sided protection In contact with, and fixed to, concrete floor decks				4 sided protection and other configurations				3 sided protection In contact with, and fixed to, concrete floor decks				4 sided protection and other configurations					
Critical temperature: 620°C				Critical temperature: 550°C				Critical temperature: 620°C				Critical temperature: 550°C					
Fire resistance period (minutes)									Fire resistance period (minutes)								
30				60				90				120				25mm 30mm 35mm 40mm 45mm 50mm 55mm 60mm	
260				260				148				65					
260				260				148				65					
260				260				148				65					
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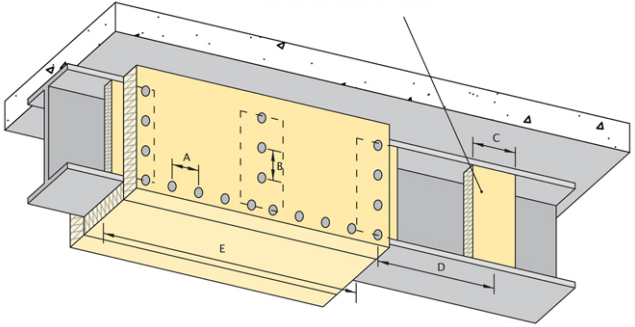
Tested and assessed to BS 476:Part 21

Noggin thickness is 25mm min. or equal to facing board thickness, if this is greater than 25mm use Beamclad offcuts



3 sided box with Beamclad clip fixing

- Dimensions:
- A - Top flange clips at max. 600mm centres for 2000mm boards (and 500mm centres if 1200mm board length used)
 - B - Clips at max 100mm from edge of board (20mm min.)
 - C - Pigtail screws at max. 150mm centres and max 75mm from edge of board
 - D - Bottom flange clips at max. 900mm centres



3-sided box using glued noggins

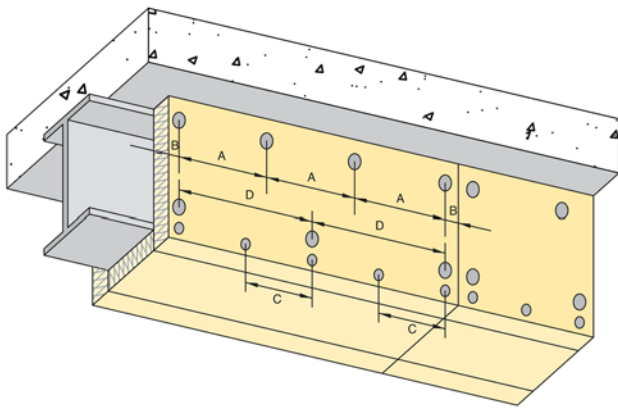
- Dimensions:
- A - Pigtail screws at max. 200mm centres and 50mm max from edge of board
 - B - Pigtail screws at max. 100mm centres into noggins
 - C - Noggins of min. 120mm width
 - D - Noggins of max. 1000mm centres
 - E - Board length 2000mm

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles in Sections 3 and 4 of this Yellow Book

FIREPRO BEAMCLAD SYSTEMS

BEAMCLAD using Stud welded pins or Glued noggins, Glued joint system																			
Section factor - H_p/A (m ⁻¹)	BEAMS						BEAMS						COLUMNS						Product thickness
	3 sided protection In contact with, and fixed to, concrete floor decks						4 sided protection and other configurations						4 sided protection and other configurations						
	Critical temperature: 620°C						Critical temperature: 550°C						Critical temperature: 550°C						
	Fire resistance period (minutes)																		
	30	60	90	120	180	240	30	60	90	120	180	240	30	60	90	120	180	240	
	260	260	260	168	52	-	260	260	260	98	40	-	260	260	149	65	-	-	25mm
			235	65	-				130	50	-			207	83	-	-	30mm	
			260	80	45				168	61	-			260	104	45	-	35mm	
				95	53				216	73	43				128	54	-	40mm	
				113	62				260	85	50				155	62	-	45mm	
				132	70					99	57				187	72	44	50mm	
				154	80					114	65				225	82	50	55mm	
				178	90					131	73				260	92	55	60mm	
				237	112					170	90					116	68	70mm	
				260	136					219	109					143	81	80mm	
					165					260	131					176	96	90mm	
					199						157					214	124	100mm	
					238						186					260	129	110mm	

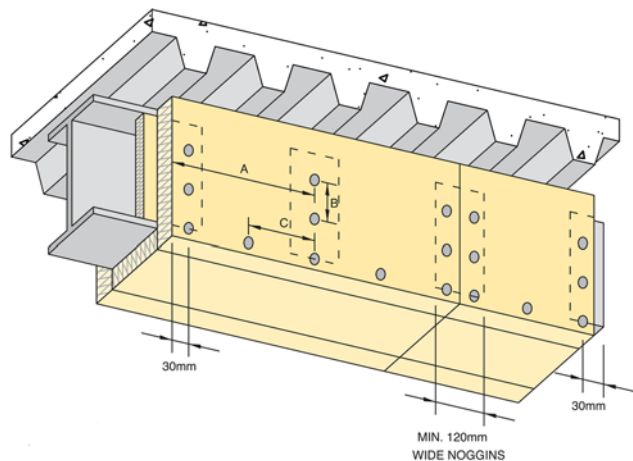
Tested and assessed to BS 476:Part 21



3-sided box with stud welded pins

DIMENSIONS:

- A – Stud welded pins at max. 600mm centres for 2000mm board (500mm centres for 1200mm boards)
- B – Welded pins at max. 100mm centres, 20mm min. from edge of board
- C – Nails at max. 400mm centres
- D – Stud welded pins at max. 900mm centres for 2000mm board on bottom flange (500mm centres for 1200mm boards)



3-sided box with glue

DIMENSIONS:

- A – Noggings at max. 1000mm centre
- B – Nails at max. 150mm centres
- C – Nails at max. 400mm centres (max. 30mm from edge of board joint)

This product is certified by a 3rd Party Certification body accredited to ISO Guide 65
The data provided complies with the principles in Sections 3 and 4 of this Yellow Book

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GLASROC FIRECASE S

- 1. Product description**
Glass fibre reinforced gypsum board incorporating integral glass fibre membranes
- 2. Manufacturer**
BRITISH GYPSUM LIMITED
East Leake, Loughborough, Leicestershire LE12 6JT
T: 08705 456 123
F: 08705 456 356 W: www.british-gypsum.com
- 3. Availability**
Fire protection distributors and builders merchants
- 4. Protection technique**
Box
- 5. Application technique**
The boards are secured with direct screw or staple fixing through abutting boards to 4 sided column protection. On 3 sided columns or beams protection of steel angle sections may be used in conjunction with Glasroc FireCase s backing strips or alternatively Glasroc FireCase s soldiers can be used for fire protection periods up to and including 90 minutes. Jointing and finishing is not a requirement to meet the fire protection levels given, however Gyproc Jointing systems or Thistle plastering systems may be used.
- 6. Steel preparation requirements**
None
- 7. Additional mechanical fixing**
On beams the steel support angles are shot fired to both sides of the section
- 8. Nominal density**
850kg/m²
- 9. Thickness Range**
15mm, 20mm, 25mm and 30mm
- 10. Fire resistance range**
Up to 2 hours
Hp/A 17 – 260m⁻¹
- 11. Constraints for fire resistance**
Minimum thickness - 15mm
Maximum thickness – 35mm
- 12. Appearance**
Smooth gypsum surface suitable for most forms of decoration
- 13. On site use**
For internal and semi-exposed applications
- 14. Durability**
Resistant to vermin and mould growth, minor impact and abrasion
- 15. Performance in other BS fire tests**
BS476-4 – non combustible
- 16. Other applications**
Internal lining of buildings
Fire protecting ceilings
Fire resisting partition and wall construction
Cavity barriers

GLASROC FIRECASE S

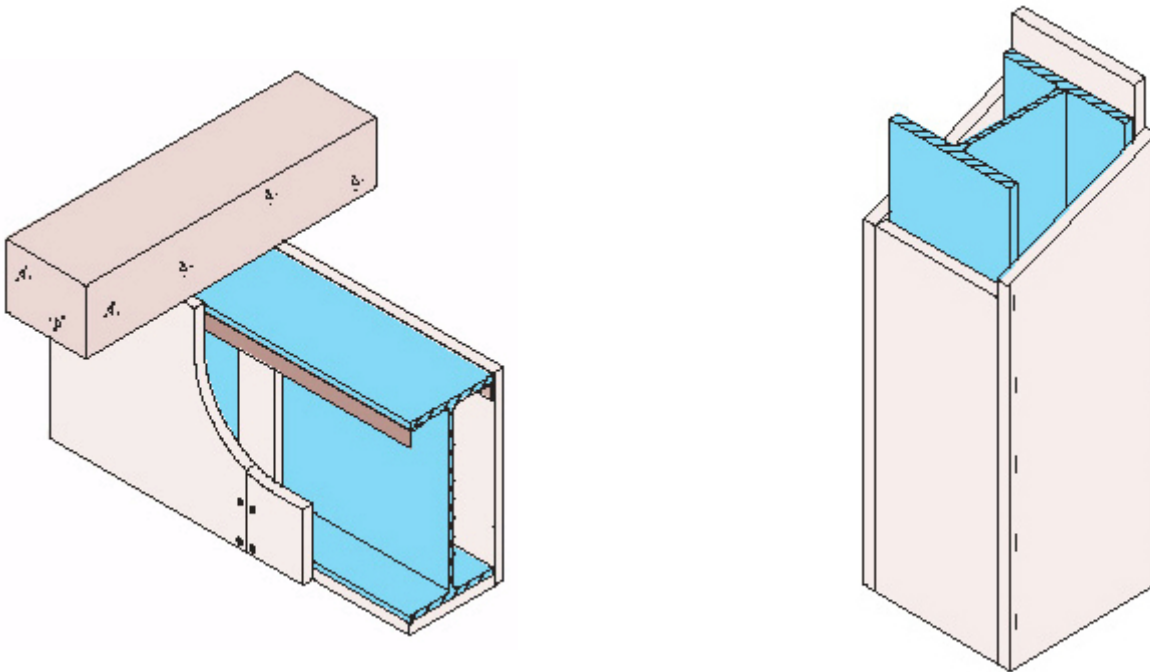
Section factor Hp/A (m-1)	Fire resistance period (minutes)				Product thickness
	550 degrees C				
	30	60	90	120	
	260	260	105	65	15mm
			180	90	20mm
			260	100	25mm
			250	30mm	
			260	35mm	

BS 476: Part 20: 1987

Section factor Hp/A (m-1)	Fire resistance period (minutes)				Product thickness
	620 degrees C				
	30	60	90	120	
	260	260	130	70	15mm
			190	90	20mm
			260	110	25mm
			260	30mm	

BS 476: Part 20: 1987

The data provided complies with the principles of the ASFP/BCF/ICF industry Guidance and Sections 3 and 5 or 6 of this Yellow Book



KNAUF FIREBOARD

1. **Product description**

Knauf Fireboard is a glass fibre reinforced gypsum board specially developed for high performance lining and encasement, providing up to two hours of fire protection. Knauf Fireboard has a high quality off-white smooth surface finish which is ideal for most paint finishes, can be plastered directly, or left undecorated. Knauf Fireboard Gripper Screws are gold passivated screws with spoon tips and 'hi-low' threads. Knauf Uniflott is a specially formulated compound for jointing and filling Knauf Fireboard to help maintain the performance of the system.

2. **Manufacturer**

Knauf Insulation, PO Box 10, Stafford Road, St Helens, Merseyside WA10 3NS
T: 01744 766684 F: 01744 766678 W: www.knaufinsulation.co.uk

3. **Availability**

Main insulation stockists – Fixing recommended by recognised fire protection contractors

4. **Protection technique**

Box or profile

5. **Application technique**

a) Knauf Fireboard Column System

- (i) Four-sided column encasement - Cut two boards to the width of the column flange - Cut another two to the depth of the column plus twice the thickness of the board Adjust the length of adjoining boards to ensure that board joints are staggered by at least 300mm - Edge-fix the boards using either self drilling Knauf Fireboard Gripper Screws at 200mm centres or proprietary staples at 120mm centres
- (ii) Partial column encasement Assuring a typical three-sided encasement where one of the column flanges straddles a wall, follow the same procedure as outlined for four-sided encasement with the following differences: • Fix 25 x 25mm light gauge steel angles, in continuous lengths, to either the abutting wall face or the inner flange of the column. Use appropriate proprietary fixings at 600mm centres.

b) Knauf Fireboard Beam System

Beam encasement Assuming a typical three-sided encasement where a beam is exposed directly below a level soffit, fix light gauge steel angles to either the adjoining soffit or the top flange of the beam. Install continuous lengths of 25 x 25mm angle using appropriate proprietary fixings at 600mm centres. • Fix further lengths of 25 x 25mm angle at any end abutment. • Cut two boards to the depth of the section plus twice the thickness of the board plus 10mm. Screw-fix these to the angles at 200mm centres. • Cut a soffit board to the width of the steel flange. The length of this board must differ from the side boards to ensure adjacent board joints are staggered by at least 300mm. Edgefix this horizontal board to the two vertical boards using either self-drilling Knauf Fireboard Gripper Screws at 150mm centres or staples at 120mm centres. • Cut board offcuts 100mm wide as joint backing strips. Fit these, half-lapped, behind all butt joints at the sides and soffit of the beam fixed with Knauf Fireboard Gripper Screws at maximum 100mm centres.

6. **Site preparation**

Remove oil, grease, loose or foreign matter at contact point with adhesive or pins.

7. **Additional mechanical fixing**

Not Applicable

8. **Nominal density**

800kg/m³

9. **Thickness range**

15 - 30mm

10. **Fire resistance range**

- (a) Up to 2hours
- (b) Hp/A 20 - 260m-1

11. **Constraints for fire resistance**

Minimum thickness - 15mm
Maximum thickness per single layer - 30mm

12. **Appearance**

Off-white gypsum board

13. **On site use**

For internal and protected external applications

KNAUF FIREBOARD

14. Durability

Constant humidity over 95% or subjection to continuous water will reduce the serviceability of the boards.

15. Performance in other BS and EN fire tests

Knauf Fireboard is non-combustible to BS 476: Part 4: 1970 (1984) and Class 1 Surface Spread of Flame to BS 476: Part 7: 1997. Knauf Fireboard complies with the Class 'O' requirements of the Building Regulations.

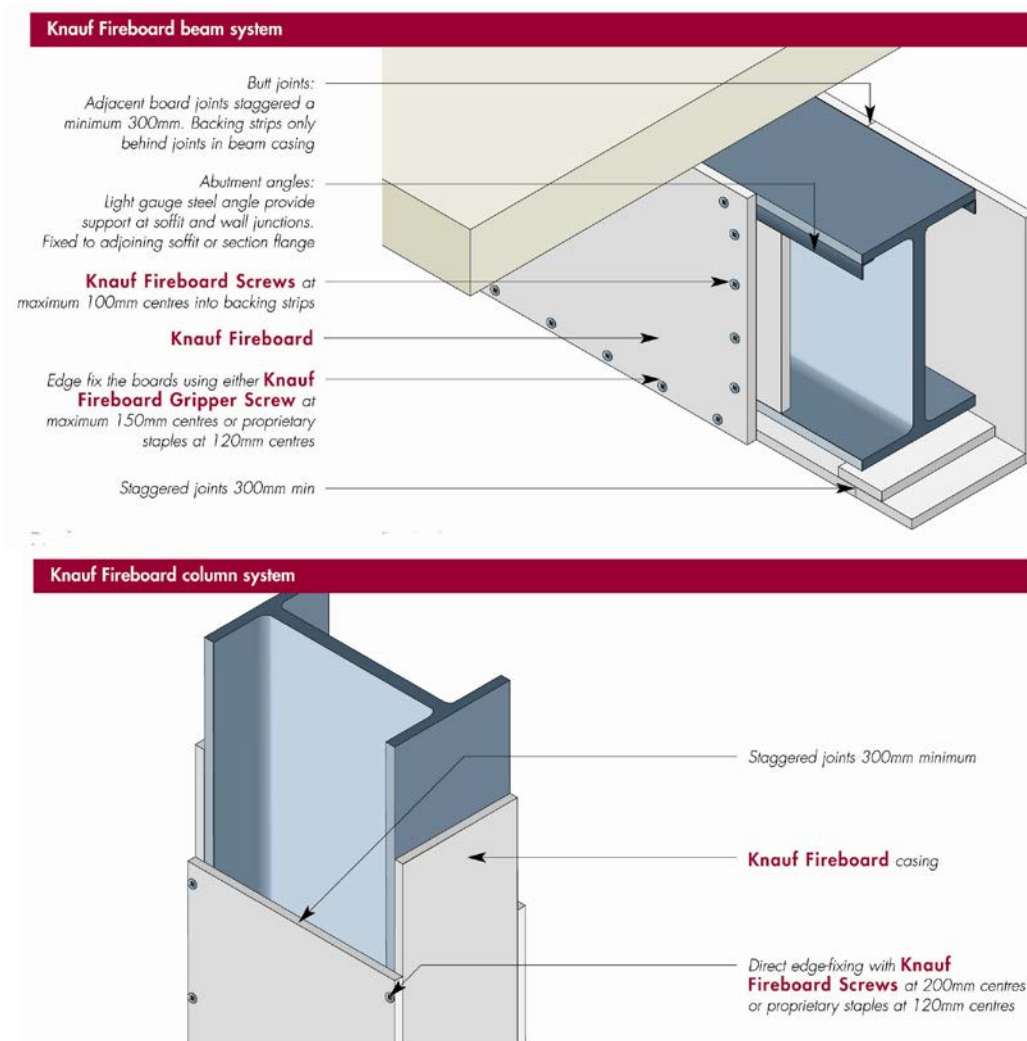
16. Other applications

Not Applicable

Beams and Columns					
	Fire Resistance Period (minutes) critical temperature of 550°C				Product thickness
	30	60	90	120	
Section factor Hp/A _(m⁻¹)	260	260	88		15mm
			146		20mm
			242	95	25mm
			260	131	30mm
				179	35mm
				247	40mm
				260	45mm

Tested to BS 476 part 21 :1987

The data provided complies with the principles in Sections 3 and 4 of this Yellow Book



INTUTEC

- 1. Product description**
Resin bonded rock fibre panels
- 2. Manufacturer**
Firetherm Intumescent & Insulation Supplies Ltd
Unit F, Crayford Road, Crayford, Kent, DA1 4FT
T: 01322 551010
F: 01763 262342 W: www.firetherm.com
- 3. Availability**
Supplied direct from the manufacturers or local distributors.
- 4. Protection Technique**
Box
- 5. Application Technique**
For one-hour box protection, noggins are friction fitted between the flanges or glued using Intutac adhesive for two hours protection. Outer panels are fastened to the noggins and each other using pigtail screw fixings. For 3 and 4 hours structural steel protection, welded pin fixing system is utilised.
- 6. Steel Preparation Requirements**
No special requirement
- 7. Additional Mechanical Fixings**
Where flanges exceed 400mm wide, use welded pins to the centre of the steel to provide additional support, where web exceeds 500mm use a multi-layer or 'T' noggin.
- 8. Nominal Density**
160kg/m³
- 9. Thickness Range**
Nominal thickness: 20mm to 110mm in 5mm increments.
- 10. Fire Resistance Range**
30 minutes to 4 hours
- 11. Constraints For Fire Resistance**
Minimum thickness – 20mm, maximum thickness 110mm
- 12. Appearance**
Brown coloured boards 1800x1200mm. Optionally foil or tissue faced.
- 13. On Site Use**
For internal installations only.
- 14. Durability**
Rot resistant, vermin proof and will not encourage the growth of fungi, mould or bacteria.
- 16. Other Applications**
Thermal insulation

	Fire Resistance Period (minutes) 620°C						Product thickness
	30	60	90	120	180	240	
Section Factor HP/A ^(m-1)	260	260	124	74	-	-	20mm
			187	106	-	-	25mm
			260	164	83	56	30mm
				222	97	65	35mm
				251	112	75	40mm
				260	126	84	45mm
					140	94	50mm
					155	103	55mm
					170	113	60mm
					185	123	65mm
					199	132	70mm
					214	142	75mm
					230	152	80mm
					245	162	85mm
					260	172	90mm
						182	95mm
						192	100mm
						202	105mm
					212	110mm	
Beams Only							

	Fire Resistance Period (minutes) 550°C						Product thickness
	30	60	90	120	180	240	
Section Factor HP/A ^(m-1)	260	260	133	78	-	-	20mm
			170	98	-	-	25mm
			207	119	64	44	30mm
			246	140	75	52	35mm
			260	162	87	59	40mm
				184	98	67	45mm
				207	110	75	50mm
				230	121	82	55mm
				254	133	90	60mm
				260	145	98	65mm
					157	106	70mm
					169	114	75mm
					182	122	80mm
					194	130	85mm
					207	138	90mm
					219	147	95mm
					232	155	100mm
					245	163	105mm
				259	172	110mm	
4 Sided Columns							

The data provided complies with the principles in Sections 3 and 4 of this Yellow Book

PAROC FIRE STEEL PROTECT

1. Product Description

Rigid stone wool slab, for fire protection of loadbearing steel structures.

2. Supplier

Paroc Ltd
70 Tradewinds, Liberty Place, East Village, Liverpool L1 5BG
T: 01706 365568 W: www.paroc.co.uk

3. Availability

Via distribution found on these pages
www.paroc.co.uk/contact-us/dealers-and-contractors

4. Protection technique

Box or profile.

5. Application techniques

Board sizes	1200 mm x 600 mm and 1200 x 900 mm
Glue free fastening:	
Welding pins	Steel welding pins, Ø 2.7 mm, length corresponding to the thickness of the fire protective slab
Washers	Galvanized steel washers for welding pins, Ø 30 mm
Spiral springs	'Fire spring' spiral spring screws made of steel rod, rod diameter 1.6 mm, spring external diameter 8 mm and top diameter 15 mm

6. Steel preparation

None required.

7. Nominal density

The nominal density of the insulation is 160 - 170 kg/m³.

8. Thickness range

20 – 60 mm.

9. Fire resistance range

Time – up to 4 hours.
Beam and columns, maximum depth (h) of the cross-section 600 mm
Three and four-sided fire exposure
I/H sections and rectangular and square closed sections
Section factor, A_m/V from 47 m⁻¹ to 281 m⁻¹
Design temperature 300°C to 700°C

10. Appearance

The stone wool slab PAROC Fire Steel Protect may be delivered with a covering of glass fibre tissue; aluminium foil; or a glass fibre tissue and an aluminium foil. The product is then called PAROC Fire Steel Protect N1, PAROC Fire Steel Protect AluCoat or PAROC Fire Steel Protect N1 AluCoat

11. On site use

Category of intended climatic conditions is Type Z₂: fire protective kit intended for internal use only.

12. Durability

Working life of the board is 25 years.

13. Reaction to Fire performance

PAROC Fire Steel Protect stone wool slab is CE-marked according to harmonised product standard EN 13162 with designation code MW-EN13162-T5-DS(70,-)-WS-WL(P)-MU1/Z(6,0). Reaction to Fire class is A1.

PAROC FIRE STEEL PROTECT FOR STEEL STRUCTURES

PAROC Fire Steel Protect board thickness can be chosen from the design tables as a function of

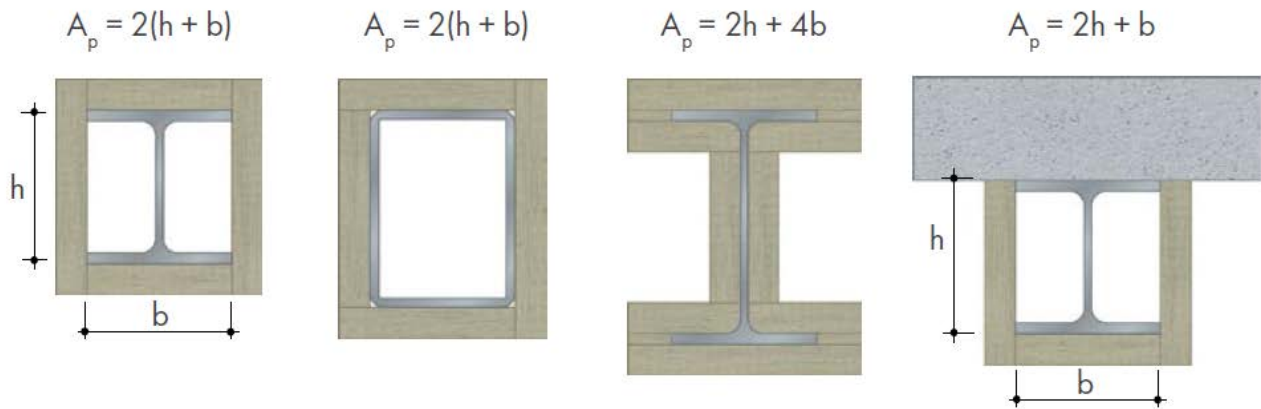
- fire endurance time,
- section factor A/V for the member and
- critical steel temperature ranging from 300–700°C

A_p/V – SECTION FACTOR FOR PROTECTED MEMBERS

Section factor for insulated steel members:

$$(m^{-1}) = A / V$$

When I-profile is higher than 450 mm the insulation shall be installed following the profile. In case of square closed section protection, the surface area is taken as the sum of the inside dimensions of the smallest possible rectangular or square encasement.



DESIGN TABLES R 30 – R 240 / PAROC Fire Steel Protect:

INSULATION THICKNESS FOR R30 STEEL STRUCTURE

Fire resistance period 30 minutes									
Design temperature [°C]	300	350	400	450	500	550	600	650	700
Section factor [m ⁻¹]	Thickness in mm of fire protection material to maintain steel temperature below design temperature								
47	20	20	20	20	20	20	20	20	20
50	20	20	20	20	20	20	20	20	20
55	20	20	20	20	20	20	20	20	20
60	20	20	20	20	20	20	20	20	20
65	20	20	20	20	20	20	20	20	20
70	20	20	20	20	20	20	20	20	20
75	20	20	20	20	20	20	20	20	20
80	20	20	20	20	20	20	20	20	20
85	20	20	20	20	20	20	20	20	20
90	20	20	20	20	20	20	20	20	20
95	20	20	20	20	20	20	20	20	20
100	20	20	20	20	20	20	20	20	20
105	20	20	20	20	20	20	20	20	20
110	20	20	20	20	20	20	20	20	20
115	20	20	20	20	20	20	20	20	20
120	20	20	20	20	20	20	20	20	20
125	20	20	20	20	20	20	20	20	20
130	20	20	20	20	20	20	20	20	20
135	20	20	20	20	20	20	20	20	20
140	20	20	20	20	20	20	20	20	20
145	20	20	20	20	20	20	20	20	20
150	20	20	20	20	20	20	20	20	20
155	20	20	20	20	20	20	20	20	20
160	20	20	20	20	20	20	20	20	20
165	20	20	20	20	20	20	20	20	20
170	20	20	20	20	20	20	20	20	20
175	20	20	20	20	20	20	20	20	20
180	20	20	20	20	20	20	20	20	20
185	20	20	20	20	20	20	20	20	20
190	20	20	20	20	20	20	20	20	20
195	20	20	20	20	20	20	20	20	20
200	25	20	20	20	20	20	20	20	20
205	25	20	20	20	20	20	20	20	20
210	25	20	20	20	20	20	20	20	20
215	25	20	20	20	20	20	20	20	20
220	25	20	20	20	20	20	20	20	20
225	25	20	20	20	20	20	20	20	20
230	25	20	20	20	20	20	20	20	20
235	25	20	20	20	20	20	20	20	20
240	25	20	20	20	20	20	20	20	20
245	30	20	20	20	20	20	20	20	20
250	30	20	20	20	20	20	20	20	20
255	30	20	20	20	20	20	20	20	20
260	30	20	20	20	20	20	20	20	20
265	30	20	20	20	20	20	20	20	20
270	30	20	20	20	20	20	20	20	20
275	30	20	20	20	20	20	20	20	20
280	30	20	20	20	20	20	20	20	20
281	30	25	20	20	20	20	20	20	20

INSULATION THICKNESS FOR R60 STEEL STRUCTURE

Fire resistance period 60 minutes									
Design temperature [°C]	300	350	400	450	500	550	600	650	700
Section factor [m ⁻¹]	Thickness in mm of fire protection material to maintain steel temperature below design temperature								
47	20	20	20	20	20	20	20	20	20
50	20	20	20	20	20	20	20	20	20
55	20	20	20	20	20	20	20	20	20
60	20	20	20	20	20	20	20	20	20
65	20	20	20	20	20	20	20	20	20
70	20	20	20	20	20	20	20	20	20
75	20	20	20	20	20	20	20	20	20
80	20	20	20	20	20	20	20	20	20
85	20	20	20	20	20	20	20	20	20
90	25	20	20	20	20	20	20	20	20
95	25	20	20	20	20	20	20	20	20
100	25	20	20	20	20	20	20	20	20
105	30	20	20	20	20	20	20	20	20
110	30	25	20	20	20	20	20	20	20
115	30	25	20	20	20	20	20	20	20
120	30	25	20	20	20	20	20	20	20
125	40	25	20	20	20	20	20	20	20
130	40	30	20	20	20	20	20	20	20
135	40	30	20	20	20	20	20	20	20
140	40	30	25	20	20	20	20	20	20
145	40	30	25	20	20	20	20	20	20
150	40	30	25	20	20	20	20	20	20
155	40	40	25	20	20	20	20	20	20
160	40	40	30	20	20	20	20	20	20
165	40	40	30	20	20	20	20	20	20
170	50	40	30	25	20	20	20	20	20
175	50	40	30	25	20	20	20	20	20
180	50	40	30	25	20	20	20	20	20
185	50	40	30	25	20	20	20	20	20
190	50	40	30	25	20	20	20	20	20
195	50	40	40	25	20	20	20	20	20
200	50	40	40	25	20	20	20	20	20
205	50	40	40	30	20	20	20	20	20
210	50	40	40	30	25	20	20	20	20
215	50	50	40	30	25	20	20	20	20
220	60	50	40	30	25	20	20	20	20
225	60	50	40	30	25	20	20	20	20
230	60	50	40	30	25	20	20	20	20
235	60	50	40	30	25	20	20	20	20
240	60	50	40	30	25	20	20	20	20
245	60	50	40	30	25	20	20	20	20
250	60	50	40	30	25	20	20	20	20
255	60	50	40	40	25	20	20	20	20
260	60	50	40	40	30	25	20	20	20
265	60	50	40	40	30	25	20	20	20
270	60	50	40	40	30	25	20	20	20
275	0	50	40	40	30	25	20	20	20
280	0	50	40	40	30	25	20	20	20
281	0	50	40	40	30	25	20	20	20

INSULATION THICKNESS FOR R90 STEEL STRUCTURE

Fire resistance period 90 minutes									
Design temperature [°C]	300	350	400	450	500	550	600	650	700
Section factor [m ⁻¹]	Thickness in mm of fire protection material to maintain steel temperature below design temperature								
47	20	20	20	20	20	20	20	20	20
50	20	20	20	20	20	20	20	20	20
55	20	20	20	20	20	20	20	20	20
60	25	20	20	20	20	20	20	20	20
65	25	20	20	20	20	20	20	20	20
70	30	25	20	20	20	20	20	20	20
75	30	25	20	20	20	20	20	20	20
80	40	30	20	20	20	20	20	20	20
85	40	30	25	20	20	20	20	20	20
90	40	30	25	20	20	20	20	20	20
95	40	40	30	20	20	20	20	20	20
100	40	40	30	25	20	20	20	20	20
105	50	40	30	25	20	20	20	20	20
110	50	40	40	30	20	20	20	20	20
115	50	40	40	30	25	20	20	20	20
120	50	50	40	30	25	20	20	20	20
125	50	50	40	30	25	20	20	20	20
130	50	50	40	40	30	20	20	20	20
135	60	50	40	40	30	25	20	20	20
140	60	50	40	40	30	25	20	20	20
145	60	50	50	40	30	25	20	20	20
150	60	50	50	40	40	25	20	20	20
155	60	60	50	40	40	30	25	20	20
160	60	60	50	40	40	30	25	20	20
165	0	60	50	40	40	30	25	20	20
170	0	60	50	40	40	30	25	20	20
175	0	60	50	50	40	30	25	20	20
180	0	60	50	50	40	30	25	25	20
185	0	60	50	50	40	40	30	25	20
190	0	60	50	50	40	40	30	25	20
195	0	60	60	50	40	40	30	25	20
200	0	0	60	50	40	40	30	25	20
205	0	0	60	50	40	40	30	25	20
210	0	0	60	50	40	40	30	25	20
215	0	0	60	50	40	40	30	25	25
220	0	0	60	50	40	40	30	30	25
225	0	0	60	50	50	40	30	30	25
230	0	0	60	50	50	40	40	30	25
235	0	0	60	50	50	40	40	30	25
240	0	0	60	50	50	40	40	30	25
245	0	0	60	50	50	40	40	30	25
250	0	0	60	50	50	40	40	30	25
255	0	0	60	50	50	40	40	30	25
260	0	0	60	50	50	40	40	30	25
265	0	0	60	60	50	40	40	30	25
270	0	0	0	60	50	40	40	30	30
275	0	0	0	60	50	40	40	30	30
280	0	0	0	60	50	40	40	30	30
281	0	0	0	60	50	40	40	30	30

INSULATION THICKNESS FOR R120 STEEL STRUCTURE

Fire resistance period 120 minutes									
Design temperature [°C]	300	350	400	450	500	550	600	650	700
Section factor [m ⁻¹]	Thickness in mm of fire protection material to maintain steel temperature below design temperature								
47	25	20	20	20	20	20	20	20	20
50	30	25	20	20	20	20	20	20	20
55	30	25	20	20	20	20	20	20	20
60	40	30	25	20	20	20	20	20	20
65	40	40	30	20	20	20	20	20	20
70	40	40	30	25	20	20	20	20	20
75	50	40	40	30	25	20	20	20	20
80	50	40	40	30	25	20	20	20	20
85	50	50	40	40	30	20	20	20	20
90	50	50	40	40	30	25	20	20	20
95	60	50	50	40	40	25	20	20	20
100	60	50	50	40	40	30	20	20	20
105	60	60	50	40	40	30	25	20	20
110	60	60	50	50	40	40	25	20	20
115	0	60	50	50	40	40	30	25	20
120	0	60	60	50	40	40	30	25	20
125	0	60	60	50	50	40	30	25	20
130	0	0	60	50	50	40	40	30	25
135	0	0	60	50	50	40	40	30	25
140	0	0	60	60	50	40	40	30	25
145	0	0	60	60	50	40	40	30	25
150	0	0	60	60	50	50	40	40	30
155	0	0	0	60	50	50	40	40	30
160	0	0	0	60	50	50	40	40	30
165	0	0	0	60	50	50	40	40	30
170	0	0	0	60	50	50	40	40	30
175	0	0	0	60	60	50	40	40	30
180	0	0	0	60	60	50	40	40	40
185	0	0	0	60	60	50	50	40	40
190	0	0	0	0	60	50	50	40	40
195	0	0	0	0	60	50	50	40	40
200	0	0	0	0	60	50	50	40	40
205	0	0	0	0	60	50	50	40	40
210	0	0	0	0	60	50	50	40	40
215	0	0	0	0	60	50	50	40	40
220	0	0	0	0	60	50	50	40	40
225	0	0	0	0	60	50	50	40	40
230	0	0	0	0	60	60	50	40	40
235	0	0	0	0	60	60	50	40	40
240	0	0	0	0	60	60	50	50	40
245	0	0	0	0	60	60	50	50	40
250	0	0	0	0	60	60	50	50	40
255	0	0	0	0	60	60	50	50	40
260	0	0	0	0	60	60	50	50	40
265	0	0	0	0	0	60	50	50	40
270	0	0	0	0	0	60	50	50	40
275	0	0	0	0	0	60	50	50	40
280	0	0	0	0	0	60	50	50	40
281	0	0	0	0	0	60	50	50	40

INSULATION THICKNESS FOR R150 STEEL STRUCTURE

Design temperature [°C]	Fire resistance period 150 minutes								
	300	350	400	450	500	550	600	650	700
Section factor [m ⁻¹]	Thickness in mm of fire protection material to maintain steel temperature below design temperature								
47	40	30	25	20	20	20	20	20	20
50	40	30	30	20	20	20	20	20	20
55	40	40	30	25	20	20	20	20	20
60	50	40	40	30	25	20	20	20	20
65	50	50	40	40	30	20	20	20	20
70	50	50	50	40	40	25	20	20	20
75	60	50	50	40	40	30	25	20	20
80	60	60	50	50	40	40	30	20	20
85	60	60	50	50	50	40	30	25	20
90	0	60	60	50	50	40	40	30	20
95	0	60	60	50	50	40	40	30	25
100	0	0	60	60	50	50	40	40	25
105	0	0	60	60	50	50	40	40	30
110	0	0	0	60	60	50	50	40	30
115	0	0	0	60	60	50	50	40	40
120	0	0	0	0	60	50	50	40	40
125	0	0	0	0	60	60	50	40	40
130	0	0	0	0	60	60	50	50	40
135	0	0	0	0	60	60	50	50	40
140	0	0	0	0	60	60	50	50	40
145	0	0	0	0	0	60	50	50	40
150	0	0	0	0	0	60	50	50	40
155	0	0	0	0	0	60	60	50	50
160	0	0	0	0	0	60	60	50	50
165	0	0	0	0	0	60	60	50	50
170	0	0	0	0	0	60	60	50	50
175	0	0	0	0	0	60	60	50	50
180	0	0	0	0	0	0	60	50	50
185	0	0	0	0	0	0	60	50	50
190	0	0	0	0	0	0	60	50	50
195	0	0	0	0	0	0	60	50	50
200	0	0	0	0	0	0	60	60	50
205	0	0	0	0	0	0	60	60	50
210	0	0	0	0	0	0	60	60	50
215	0	0	0	0	0	0	60	60	50
220	0	0	0	0	0	0	60	60	50
225	0	0	0	0	0	0	60	60	50
230	0	0	0	0	0	0	60	60	50
235	0	0	0	0	0	0	60	60	50
240	0	0	0	0	0	0	60	60	50
245	0	0	0	0	0	0	60	60	50
250	0	0	0	0	0	0	60	60	50
255	0	0	0	0	0	0	60	60	50
260	0	0	0	0	0	0	0	60	50
265	0	0	0	0	0	0	0	60	50
270	0	0	0	0	0	0	0	60	50
275	0	0	0	0	0	0	0	60	50
280	0	0	0	0	0	0	0	60	50
281	0	0	0	0	0	0	0	60	50

INSULATION THICKNESS FOR R180 STEEL STRUCTURE

Design temperature [°C]	Fire resistance period 180 minutes									
	300	350	400	450	500	550	600	650	700	
Section factor [m ⁻¹]	Thickness in mm of fire protection material to maintain steel temperature below design temperature									
47	40	40	40	30	20	20	20	20	20	
50	50	40	40	40	25	20	20	20	20	
55	50	50	40	40	40	25	20	20	20	
60	60	50	50	50	40	30	25	20	20	
65	60	60	50	50	50	40	30	20	20	
70	60	60	60	50	50	40	40	30	20	
75	0	60	60	60	50	50	40	40	25	
80	0	0	60	60	60	50	50	40	30	
85	0	0	0	60	60	50	50	40	40	
90	0	0	0	0	60	60	50	50	40	
95	0	0	0	0	60	60	50	50	40	
100	0	0	0	0	0	60	60	50	50	
105	0	0	0	0	0	60	60	50	50	
110	0	0	0	0	0	0	60	50	50	
115	0	0	0	0	0	0	60	60	50	
120	0	0	0	0	0	0	60	60	50	
125	0	0	0	0	0	0	60	60	50	
130	0	0	0	0	0	0	0	60	50	
135	0	0	0	0	0	0	0	60	60	
140	0	0	0	0	0	0	0	60	60	
145	0	0	0	0	0	0	0	60	60	
150	0	0	0	0	0	0	0	0	60	60
155	0	0	0	0	0	0	0	0	60	60
160	0	0	0	0	0	0	0	0	60	60
165	0	0	0	0	0	0	0	0	60	60
170	0	0	0	0	0	0	0	0	0	60
175	0	0	0	0	0	0	0	0	0	60
180	0	0	0	0	0	0	0	0	0	60
185	0	0	0	0	0	0	0	0	0	60
190	0	0	0	0	0	0	0	0	0	60
195	0	0	0	0	0	0	0	0	0	60
200	0	0	0	0	0	0	0	0	0	60
205	0	0	0	0	0	0	0	0	0	60
210	0	0	0	0	0	0	0	0	0	60
215	0	0	0	0	0	0	0	0	0	60
220	0	0	0	0	0	0	0	0	0	60
225	0	0	0	0	0	0	0	0	0	60
230	0	0	0	0	0	0	0	0	0	60
235	0	0	0	0	0	0	0	0	0	60
240	0	0	0	0	0	0	0	0	0	60
245	0	0	0	0	0	0	0	0	0	60
250	0	0	0	0	0	0	0	0	0	60
255	0	0	0	0	0	0	0	0	0	0
260	0	0	0	0	0	0	0	0	0	0
265	0	0	0	0	0	0	0	0	0	0
270	0	0	0	0	0	0	0	0	0	0
275	0	0	0	0	0	0	0	0	0	0
280	0	0	0	0	0	0	0	0	0	0
281	0	0	0	0	0	0	0	0	0	0

INSULATION THICKNESS FOR R210 STEEL STRUCTURE

		Fire resistance period 210 minutes								
Design temperature [°C]		300	350	400	450	500	550	600	650	700
Section factor [m ⁻¹]	Thickness in mm of fire protection material to maintain steel temperature below design temperature									
47	50	50	50	40	40	30	20	20	20	20
50	50	50	50	50	40	40	25	20	20	20
55	60	60	50	50	50	40	40	25	20	20
60	60	60	60	60	50	50	40	40	25	20
65	0	0	60	60	60	50	50	40	40	40
70	0	0	0	0	60	60	50	50	40	40
75	0	0	0	0	0	60	60	50	50	50
80	0	0	0	0	0	0	60	60	50	50
85	0	0	0	0	0	0	60	60	50	50
90	0	0	0	0	0	0	0	60	60	60
95	0	0	0	0	0	0	0	60	60	60
100	0	0	0	0	0	0	0	0	60	60
105	0	0	0	0	0	0	0	0	60	60
110	0	0	0	0	0	0	0	0	60	60
115	0	0	0	0	0	0	0	0	60	60
120	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0

INSULATION THICKNESS FOR R240 STEEL STRUCTURE

		Fire resistance period 240 minutes								
Design temperature [°C]		300	350	400	450	500	550	600	650	700
Section factor [m ⁻¹]	Thickness in mm of fire protection material to maintain steel temperature below design temperature									
47	60	60	50	50	50	50	40	25	20	20
50	60	60	60	60	50	50	50	40	20	20
55	0	0	60	60	60	60	50	50	40	40
60	0	0	0	0	0	60	60	60	50	50
65	0	0	0	0	0	0	0	60	60	60
70	0	0	0	0	0	0	0	0	60	60
75	0	0	0	0	0	0	0	0	60	60
80	0	0	0	0	0	0	0	0	0	60

INSTALLATION OF PAROC® FIRE STEEL PROTECT

PAROC Fire Steel Protect is fixed to the steel structure using welding pins \varnothing 2.7 mm with attached washers \varnothing 30 mm. The pin used is chosen 2-3 mm longer than the insulation thickness. The welding is done by Capacitor Discharge (CD) equipment, or equal.

For the insulation boards between two flanges, the pins are placed max. cc 367 mm in the longitudinal direction, 50 mm in from each joint, with one pin in each side of the board connected to each flange (8 pins / board).

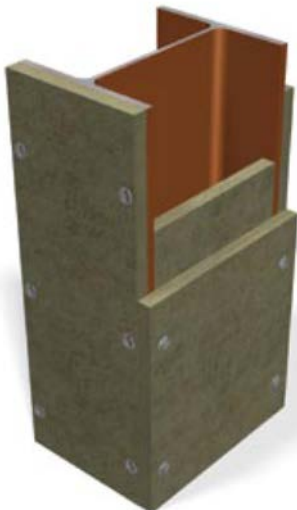
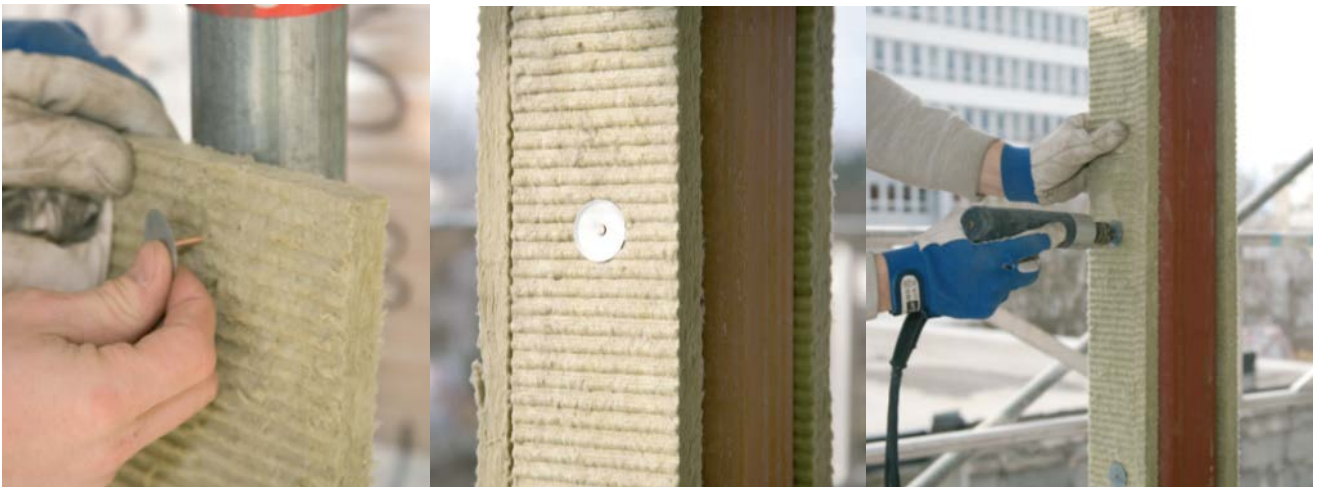
For the insulation boards mounted on flanges (width over 180 mm), the pins are placed max. cc 367 mm in the longitudinal direction, 50 mm in from each joint (8 pins / board). If the width of the flange is 180 mm or less, minimum one pin should be placed in the centre of the board (4 pins / board). For flanges with a width above 180 mm two pins should be used.

Butt joints are supported from behind with 100 mm wide PAROC Fire Steel Protect stone wool strip of the same thickness as the fire protection board.

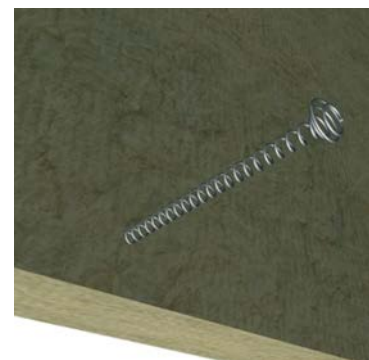
Supporting pieces are cut suitable to the profile with 2-3 mm extra length. Supporting board shall be fixed to the protective board by using fire spring PAROC XFS 001.

All edges of the profile are fully covered by the boards. At installation on beams the boards on the sides shall cover the bottom layer boards and not vice versa. No openings in fire protection are allowed.

Follow the instructions at the welding equipment to install the pins properly. Foresee that the pins are properly fastened. The pins should be possible to bend aside (without insulation) and stay fastened.



Welding pin



Fire spring PAROC XFS 001

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PROMAT TD BOARD®

1. **Product description**

Resin bonded rock fibre panels

2. **Manufacturer**

ETEX BUILDING PERFORMANCE LTD

Gordano House, Marsh Lane, Bristol, BS20 0NE

Technical: T: 0800 145 6033 E: technical.promat@etexbp.co.uk

Sales: T: 0800 373 636 E: orderline@etexbp.co.uk

www.promat.co.uk

3. **Availability**

Supply through nominated distributors, many offering specialist cutting facilities: list of distributors and recommended contractors available from manufacturer

4. **Protection technique**

Box

5. **Application technique**

(a) Clip fix, dry joint board system

Friction fitted clips to top and bottom flanges at maximum 600mm and 900mm centres respectively. PROMAT TD BOARD® impaled over pins and retained with non-return washers. Spiral screws at maximum 150mm centres used to fix web and soffit boards together.

(b) Stud welded pin, dry joint board system

Stud welded pins to top and bottom flanges at maximum 600mm and 900mm centres respectively. PROMAT TD BOARD® impaled over pins and retained with non-return washers. Spiral screws at maximum 150mm centres used to fix web and soffit boards together.

(c) Adhesive fix noggling, dry joint board system

120mm wide PROMAT TD BOARD® noggings (same thickness as casing) wedged and bonded with Vicubond WR adhesive between flanges at 1000mm centres.

PROMAT TD BOARD® fixed to noggings with spiral screws at 100mm centres.

All other board-to-board joints fixed with spiral screws at maximum 200mm centres. Minimum screw length must be 2 x cover board thickness less 5mm.

(d) Adhesive fix noggling or stud welded pin, adhesive joint board system

Adhesive fix noggings or use stud welded pins as for (b) and (c) above.

For (b), PROMAT TD BOARD® impaled over pins and retained with non-return washers. Apply Vicubond WR continuously and liberally to all board interfaces. Offer up flange boards and nail through adhered corner joints at maximum 400mm centres.

For (c) Liberally apply Vicubond WR adhesive to face of noggings, apply vertical boards and secure with nails long enough to pierce full thickness of noggings at maximum 150mm centres. Apply Vicubond WR continuously and liberally to all board interfaces. Offer up flange boards and nail through adhered corner joints at maximum 400mm centres.

(e) Adhesive fix system

120mm wide PROMAT TD BOARD® noggings (same thickness as casing) wedged and bonded with Vicubond WR adhesive between flanges at 1000mm centres.

Liberally apply Vicubond WR adhesive to face of noggings, apply vertical boards and secure with nails long enough to pierce full thickness of noggings at maximum 150mm centres. Apply Vicubond WR continuously and liberally to all board interfaces. Offer up flange boards and nail through adhered corner joints at maximum 400mm centres.

6. **Steel preparation requirements**

None except for regions where soldiers are to be fixed. These must be degreased and have loose scale and rust removed.

7. **Additional mechanical fixing**

For beams sections deeper than 500mm, and up to 1000mm, with a maximum width of 419mm, use either solid noggings or T-noggings made from cover board thickness.

Other constraints apply for each fixing method. Contact Promat Technical Services for advice.

8. **Nominal density**

165 – 180kg/m³

PROMAT TD BOARD®

9. Thickness range

Standard boards – 25, 30, 35, 40, 45, 50, 55 and 60mm

10. Fire resistance range

- (a) Up to 4 hours
- (b) A/V up to 260m⁻¹

Depends on method of fixing used. Contact Promat Technical Services for advice.

For critical steel temperatures other than 550°C or 620°C contact Promat Technical Services for advice.

11. Constraints for fire resistance

- a) Minimum thickness - 20mm
- b) Maximum single layer thickness - 55mm

12. Appearance

Light Green and is available unfaced or faced with glass tissue or reinforced aluminium foil.

13. On site use

For internal and semi exposed applications

14. Durability

Resistant to vermin, mould growth, minor impact and abrasion, odourless and moisture tolerant

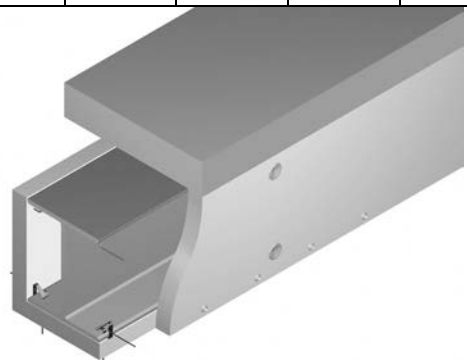
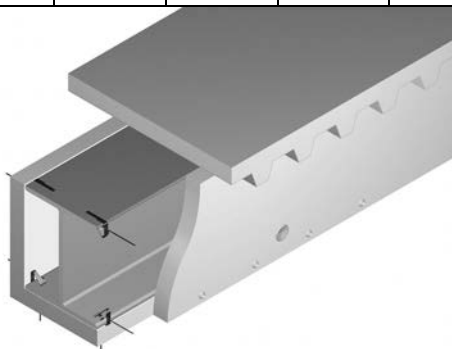
15. Performance in other BS fire tests

Non-combustible in accordance with BS 476: Part 4, Class A1 in accordance with BS EN 13501-1:2002, and therefore is also a Class 0 material as defined in Building Regulations 2000.

16. Other applications

- a) Thermal insulation
- b) Cavity barriers
- c) Cavity fire stops
- d) Core for fire resisting doors

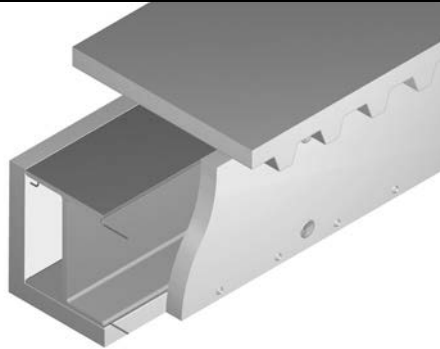
Clip fix, dry joint board system									
Board Thickness (mm)	Critical Temperature 620°C				Board Thickness (mm)	Critical Temperature 550°C			
	Limiting section factor (m ⁻¹) for fire resistance of					Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min		30 min	60 min	90 min	120 min
25	260	260	260	95	25	260	260	148	65
30				124	30			206	84
35				159	35			260	104
40				200	40				128



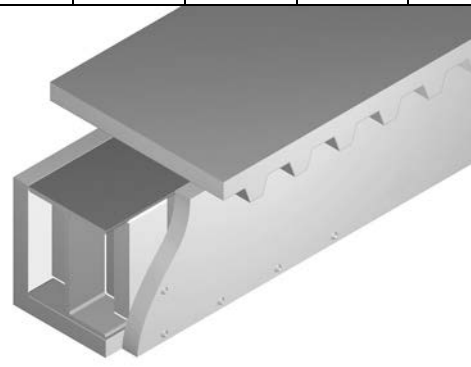
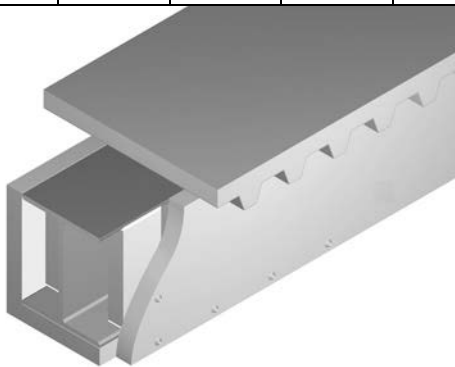
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PROMAT TD BOARD®

Stud welded pin, dry joint board system									
Board Thickness (mm)	Critical Temperature 620°C				Board Thickness (mm)	Critical Temperature 550°C			
	Limiting section factor (m ⁻¹) for fire resistance of					Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	min	90 min	120 min		30 min	60 min	90 min	120 min
25	260	260	260	95	25	260	260	148	65
30				124	30			206	84
35				159	35			260	104
40				200	40				128
45				251	45				155
50				260	50				187
55					55				225
60					60				260



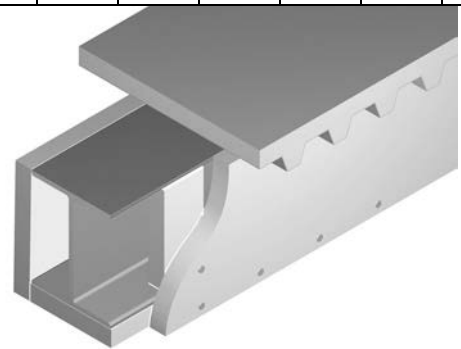
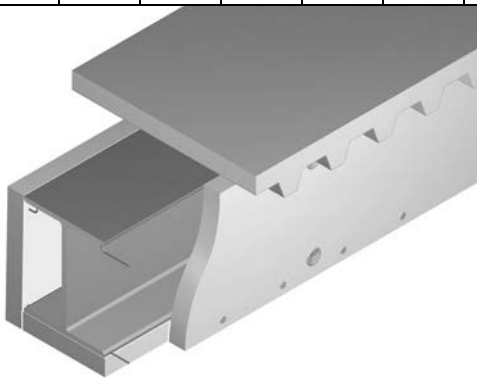
Adhesive fix nogging, dry joint board system									
Board Thickness (mm)	Critical Temperature 620°C				Board Thickness (mm)	Critical Temperature 550°C			
	Limiting section factor (m ⁻¹) for fire resistance of					Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min		30 min	60 min	90 min	120 min
25	260	260	196	73	25	260	260	146	65
30			260	93	30			202	83
35				116	35			260	103
40				143	40				126
45				173	45				153
50				209	50				184
55				252	55				221
60				260	60				260



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PROMAT TD BOARD®

Adhesive fix board system													
Board Thickness (mm)	Critical Temperature 620°C						Board Thickness (mm)	Critical Temperature 550°C					
	Limiting section factor (m ⁻¹) for fire resistance of							Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min		30 min	60 min	90 min	120 min	180 min	240 min
25	260	260	260	168	52	-	25	260	260	260	98	40	-
30				235	65	-	30				130	50	-
35				260	80	45	35				168	61	-
40					95	53	40				216	73	43
45					113	62	45				260	85	50
50					132	70	50					99	57
60					178	90	60					131	73
70					237	112	70					170	90
80					260	136	80					219	109
90						165	90					260	131
100						199	100						157
110						238	110						186



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PROMATECT® 250

1. Product description

Non-combustible mineral bound board. (Quality assurance to BS EN ISO 9001:2000)

2. Manufacturer

ETEX BUILDING PERFORMANCE LTD

Gordano House, Marsh Lane, Bristol, BS20 0NE

Technical: T: 0800 145 6033 E: technical.promat@etexbp.co.uk

Sales: T: 0800 373 636 E: orderline@etexbp.co.uk

www.promat.co.uk

3. Availability

Supply through nominated distributors, many offering specialist cutting facilities: list of distributors and recommended contractors available from manufacturer

4. Protection technique

Box

5. 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 staples, 50mm long, at 150mm centres. Soldiers may be fitted behind web 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 similar 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.

As an alternative to using Promatect 250 soldiers, 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.

6. Steel preparation requirements

None

7. Additional mechanical fixing

For 1,2,3 or 4 sided protection to beams contact Promat Technical Services for advice

For 1,2 and 3-sided protection to columns contact Promat Technical Services for advice

For beams and columns more than 400mm deep, the soldier needs to be strengthened, contact Promat Technical Services for advice.

8. Nominal density

700 kg/m³

9. Thickness range

Standard boards – 12, 15, 18, 20, 22, 25 and 30mm

10. Fire resistance range

a) Up to 2½ hours

b) A/V up to 260m⁻¹

11. Constraints for fire resistance

a) Minimum thickness - 12mm

Maximum single layer thickness - 30mm

Maximum double layer thickness - 38mm

12. Appearance

Off-white, smooth surface suitable to receive most forms of decoration

13. On site use

For internal and semi exposed applications

- 14. Durability**
Resistant to vermin, minor impact and abrasion
- 15. Performance in other BS fire tests**
Non-combustible in accordance with BS 476: Part 4, Class A1 in accordance with BS EN 13501-1:2002, and therefore is also a Class 0 material as defined in Building Regulations 2000.
- 16. Other applications**
 - a) Fire resisting partitions mezzanine floors

Beams - Critical Temperature 550°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	177	-	-	-
15		260	102	-	-
18			135	-	-
20			162	92	-
22			192	106	-
25			249	129	87
30 or (15+15)			260	176	114
33 (15+18)				211	132
35 (15+20)				238	146
38 (18+20)				260	168

Columns - Critical Temperature 550°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	209	82	-	-
15		260	114	68	-
18			153	87	61
20			185	102	70
22			223	118	80
25			260	145	96
30 or (15+15)				201	126
33 (15+18)				243	147
35 (15+20)				260	163
38 (18+20)					190

Beams - Critical Temperature 620°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	260	-	-	-
15			115	-	-
18			173	-	-
20			232	94	-
22			260	113	-
25				149	85
30 or (15+15)				243	120
33 (15+18)				260	148
35 (15+20)					171
38 (18+20)					213

Columns - Critical Temperature 620°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	260	91	-	-
15			142	67	-
18			227	92	57
20			260	112	68
22				137	79
25				186	99
30 or (15+15)				260	144
33 (15+18)					182
35 (15+20)					214
38 (18+20)					260

Beams - Critical Temperature 350°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	77	-	-	-
15		117	55	-	-
18		180	73	-	-
20		245	88	53	-
22		260	105	62	-
25			138	76	53
30 or (15+15)			221	106	70
33 (15+18)			260	130	82
35 (15+20)				149	92
38 (18+20)				183	107

Columns - Critical Temperature 350°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	77	40	-	-
15		117	55	36	-
18		180	73	46	33
20		245	88	53	38
22		260	105	62	44
25			138	76	53
30 or (15+15)			221	106	70
33 (15+18)			260	130	82
35 (15+20)				149	92
38 (18+20)				183	107

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PROMATECT® 250

Beams – Critical Temperature 400°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	96	-	-	-
15		148	65	-	-
18		232	88	-	-
20		260	105	63	-
22			126	73	-
25			166	90	62
30 or (15+15)			260	126	82
33 (15+18)				153	96
35 (15+20)				176	107
38 (18+20)				216	125

Columns – Critical Temperature 400°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	98	48	-	-
15		153	67	43	-
18		241	89	55	40
20		260	108	64	46
22			130	74	52
25			171	92	63
30 or (15+15)			260	129	83
33 (15+18)				157	98
35 (15+20)				181	109
38 (18+20)				223	128

Beams – Critical Temperature 450°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	116	-	-	-
15		179	76	-	-
18		260	102	-	-
20			122	72	-
22			146	83	-
25			191	102	70
30 or (15+15)			260	142	92
33 (15+18)				173	108
35 (15+20)				197	120
38 (18+20)				241	140

Columns – Critical Temperature 450°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	125	58	-	-
15		196	81	51	-
18		260	108	65	47
20			131	76	54
22			158	88	61
25			209	109	74
30 or (15+15)			260	153	98
33 (15+18)				187	115
35 (15+20)				215	128
38 (18+20)				260	151

Beams – Critical Temperature 500°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	138	-	-	-
15		249	80	-	-
18		260	113	-	-
20			141	75	-
22			178	88	-
25			258	112	71
30 or (15+15)			260	168	98
33 (15+18)				218	119
35 (15+20)				260	135
38 (18+20)					163

Columns - Critical Temperature 500°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	164	62	-	-
15		260	90	53	-
18			130	70	48
20			165	83	56
22			214	99	64
25			260	128	79
30 (15+15)				199	111
33 (15+18)				260	136
35 (15+20)					155
38 (18+20)					192

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PROMATECT® 250

Beams - Critical Temperature 600°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	260	-	-	-
15			108	-	-
18			158	-	-
20			206	91	-
22			260	109	-
25				141	84
30 or (15+15)				222	117
33 (15+18)				260	142
35 (15+20)					162
38 (18+20)					200

Columns - Critical Temperature 600°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	260	86	-	-
15			131	66	-
18			201	88	57
20			260	107	67
22				129	77
25				172	97
30 or (15+15)				260	138
33 (15+18)					172
35 (15+20)					200
38 (18+20)					253

Beams - Critical Temperature 650°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	260	-	-	-
15			124	-	-
18			193	-	-
20			260	97	-
22				117	-
25				157	86
30 or (15+15)				260	123
33 (15+18)					152
35 (15+20)					177
38 (18+20)					224

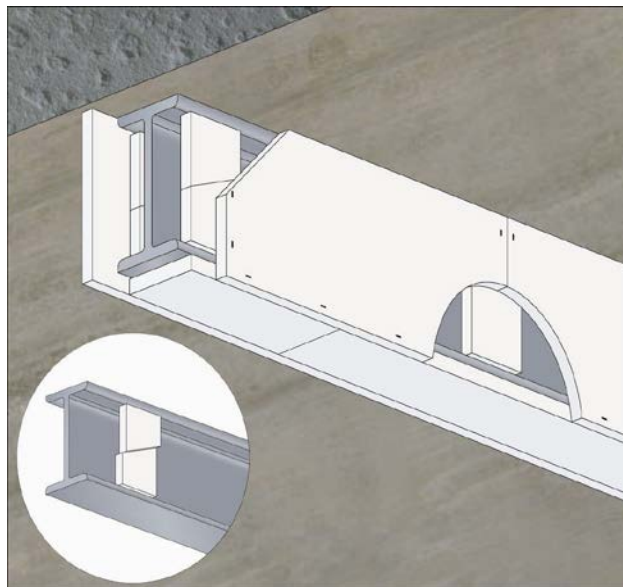
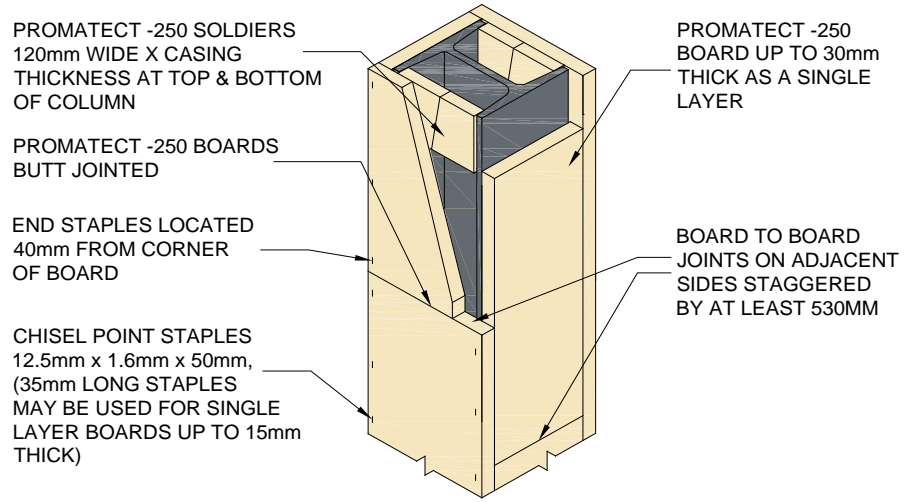
Columns - Critical Temperature 650°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	260	98	-	-
15			158	69	-
18			260	95	57
20				117	68
22				144	80
25				201	101
30 or (15+15)				260	150
33 (15+18)					191
35 (15+20)					228
38 (18+20)					260

Beams - Critical Temperature 700°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	260	-	-	-
15			128	-	-
18			212	-	-
20			260	94	-
22				114	-
25				156	80
30 or (15+15)				260	117
33 (15+18)					147
35 (15+20)					172
38 (18+20)					222

Columns - Critical Temperature 700°C					
Board Thickness (mm)	Limiting section factor (m ⁻¹) for fire resistance of				
	30 min	60 min	90 min	120 min	150 min
12	260	260	111	-	-
15			197	70	-
18			260	100	57
20				126	68
22				160	80
25				237	103
30 or (15+15)				260	159
33 (15+18)					211
35 (15+20)					259
38 (18+20)					260

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PROMATECT® 250



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ROCKSILK FIRETECH SLAB AND ROCKSILK DRY FIX NOGGIN SLAB

1. Product description

Rocksilk FireTech Slab is a high density rock mineral wool slab. It is available unfaced or faced with a Bright Class 'O' reinforced aluminium foil. Unfaced product can receive decorative renders or plaster. It is also available tissue faced, subject to enquiry.

Rocksilk FireTech Dry Fix Noggin Slab is a high density, rock mineral wool slab used in the Rocksilk FireTech Dry Fix system.

2. Manufacturer

KNAUF INSULATION

PO Box 10, Stafford Road, St Helens, Merseyside WA10 3NS

T: 01744 766684

F: 01744 766678

W: www.knaufinsulation.co.uk

3. Availability

Main insulation stockists – Fixing recommended by recognised fire protection contractors

4. Protection technique

Box or profile

5. Application technique

a) **Dry Fix Noggin System - Up to 2 hours fire protection** - Attach web pieces to noggins with Pig Tail Screws at 200mm centres. 100mm wide noggins of Rocksilk Firetech Dry-fix Noggin Board friction fitted between the flanges. Attach flange pieces to web pieces using Pig Tail Screws positioned 25mm in from each end and at 150mm centres.

b) **Adhesive Noggin Fixing System - Up to 2 hours fire protection** - Attach web pieces to noggins with Pig Tail Screws at 100mm centres. 100mm wide noggin of Rocksilk Firetech 160 glued into place using suitable adhesive

Attach flange pieces to web pieces using Pig Tail Screws positioned 25mm in from each end and at 150mm centre.

c) **Combination Fixing System - Up to 3 hours fire protection** - Attach the Rocksilk Firetech 160 web pieces by impaling over 3mm mild steel welded pins and securing in place with 38mm spring steel washers. Attach flange pieces to web pieces using Pig Tail Screws at 150mm centres. Suitable adhesive should be used at the joint between subsequent web pieces.

d) **Welded Pin Fixing System - Up to 4 hours fire protection** - Attach the Rocksilk Firetech 160 web and flange pieces by impaling over the 3mm mild steel welded pins and securing in place with 38mm spring steel washers. Suitable adhesive should be used at the joint between subsequent web pieces.

6. Site preparation

Remove oil, grease, loose or foreign matter at contact point with adhesive or pins.

7. Additional mechanical fixing

For webs over 500mm deep, use T shaped or solid noggin

8. Nominal density

165 kg/m³

9. Thickness range

20 - 110mm

10. Fire resistance range

(a) Up to 4 hours

(b) Hp/A 20 - 260m-1

11. Constraints for fire resistance

Minimum thickness - 20mm

Maximum thickness per single layer - 60mm

12. Appearance

Two finishes are available – Unfaced and Foil Faced

(a) Unfaced - light green textured

(b) Foil faced - bright aluminium skin

13. On site use

For internal and protected external applications

ROCKSILK FIRETECH SLAB AND ROCKSILK DRY FIX NOGGIN SLAB

14. Durability

Are odourless, non-hygroscopic, rot proof, do not sustain vermin and will not encourage the growth of fungi, mould or bacteria. Non-wicking when tested to BS 2972:1989: Section 12

15. Performance in other BS and EN fire tests

Non Combustible, inorganic rock wool defined as mineral wool in BS 3533: 1981 and is manufactured to a Quality Assurance system which complies with BS EN ISO 9001:2000. Fire tested in accordance with BS 476 part 21 :1987.

16. Other applications

Upgrading fire performance of concrete floors

Firetech Slab - Welded Pin Fixing System - Beams and Columns													
	Beams						Columns						Product thickness
	Fire Resistance Period (minutes)												
	Critical temperature of 550°C, and the tests were according to BS 476 part 21 :1987												
	30	60	90	120	180	240	30	60	90	120	180	240	
Section factor $H_p/A^{(m-1)}$	260	260	120	71			260	260	133	78			20mm
			189	107					170	98			25mm
			232	130	69	47			207	119	64	44	30mm
			260	153	81	55			246	140	75	52	35mm
				177	93	63			260	162	87	59	40mm
				260	143	96				254	133	90	60mm
					156	104				260	145	98	65mm
					195	130					182	122	80mm
					250	166					232	155	100mm
				260	184					260	172	110mm	

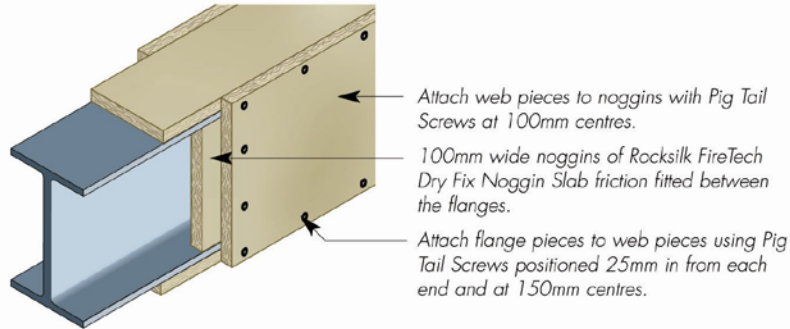
Dry Fix Noggin System and Adhesive Noggin System									
	Beams				Columns				Product thickness
	Fire Resistance Period (minutes)								
	Critical temperature of 550°C, and the tests were according to BS 476 part 21 :1987								
	30	60	90	120	30	60	90	120	
Section factor $H_p/A^{(m-1)}$	260	260	120	71	260	260	133	78	20mm
			189	107			170	98	25mm
			232	130			207	119	30mm
			260	153			246	140	35mm
				177			260	162	40mm
				260				254	60mm
								260	65mm

Combination Fixing System											
	Beams					Columns					Product thickness
	Fire Resistance Period (minutes)										
	Critical temperature of 550°C, and the tests were according to BS 476 part 21 :1987										
	30	60	90	120	180	30	60	90	120	180	
Section factor $H_p/A^{(m-1)}$	260	260	120	71		260	260	133	78		20mm
			189	107				170	98		25mm
			232	130	69			207	119	64	30mm
			260	153	81			246	140	75	35mm
				177	93			260	162	87	40mm
				260	143				254	133	60mm
					156				260	145	65mm
					195					182	80mm
					250					232	100mm
				260					260	110mm	

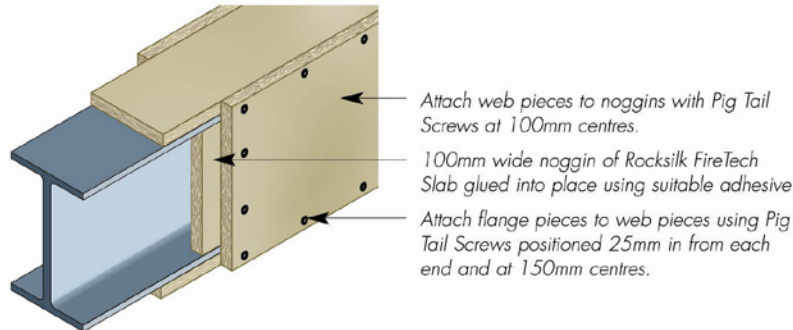
ROCKSILK FIRETECH SLAB AND ROCKSILK DRY FIX NOGGIN SLAB

Rocksilk FireTech – installation

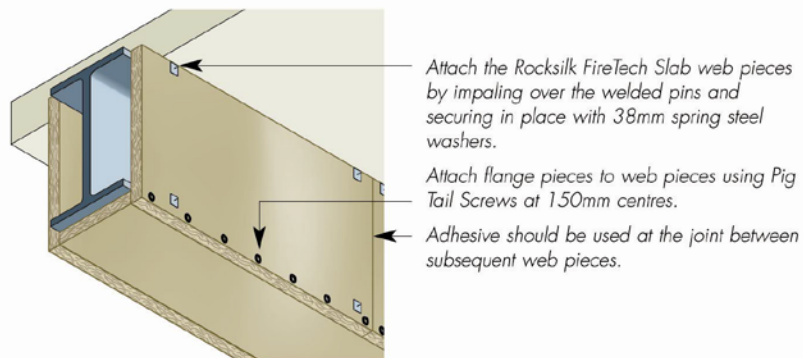
1) Dry Fix Noggin System - Up to 2 hours fire protection



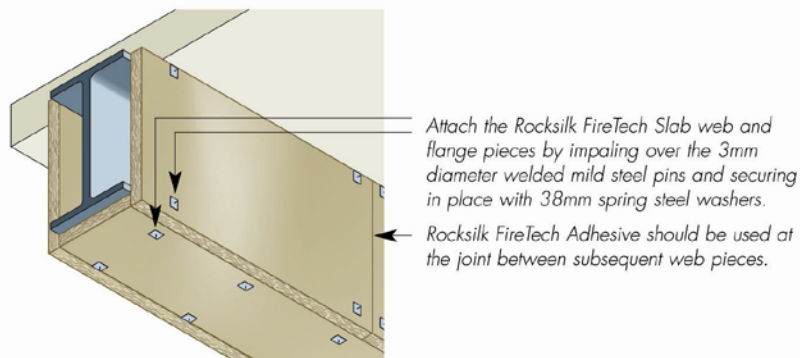
2) Adhesive Noggin Fixing System - Up to 2 hours fire protection



3) Combination Fixing System - Up to 3 hours fire protection



4) Welded Pin Fixing System - Up to 4 hours fire protection



The data provided complies with the principles in Sections 3 and 4 of this Yellow Book

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SUPALUX®

- 1. Product description**
Fibre reinforced calcium silicate insulating board. (Quality assurance to BS EN ISO 9001:2000)
- 2. Manufacturer**
ETEX BUILDING PERFORMANCE LTD
Gordano House, Marsh Lane, Bristol, BS20 0NE
Technical: T: 0800 145 6033 E: technical.promat@etexbp.co.uk
Sales: T: 0800 373 636 E: orderline@etexbp.co.uk

www.promat.co.uk
- 3. Availability**
Supply through nominated distributors, many offering specialist cutting facilities: list of distributors and recommended contractors available from manufacturer
- 4. Protection technique**
Box
- 5. Application technique**
Mechanical fixing to framing of light gauge steel angles
- 6. Steel preparation requirements**
None
- 7. Additional mechanical fixing**
For 3-sided applications, a steel angle is fixed to wall or floor soffit. For information on 1 and 2-sided applications, contact Promat Technical Services
- 8. Nominal density**
950 kg/m³
- 9. Thickness range**
Standard thicknesses are 6, 9, 12 and 15mm
- 10. Fire resistance range**
 - a) up to 2 hours
 - b) A/V up to 260m⁻¹
- 11. Constraints for fire resistance**
 - a) Minimum thickness – 6mm
 - b) Maximum thickness – 15mm
 - c) Single layer protection
- 12. Appearance**
Off-white, smooth surface, suitable to receive most forms of decoration
- 13. On site use**
For internal and semi-exposed applications
- 14. Durability**
High resistance to high humidity and temperature, abrasion, impact, vermin attack and mould growth
- 15. Performance in other BS fire tests**
Non-combustible in accordance with BS 476: Part 4, Class A1 in accordance with BS EN 13501-1:2002, and therefore is also a Class 0 material as defined in Building Regulations 2000.
- 16. Other applications**
 - a) Industrial linings
 - b) Fire resisting partitions
 - c) Fire resisting ceilings
 - d) Upgrade of doors for fire resistance
 - e) Cavity barriers
 - f) Fire protecting membrane ceiling

Board Thickness (mm)	Critical Temperature 300°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	99	33	-	-
9	159	51	30	-
12	228	69	41	29
15	260	89	52	36

Board Thickness (mm)	Critical Temperature 350°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	124	39	-	-
9	200	59	35	-
12	260	81	47	33
15		104	60	42

Board Thickness (mm)	Critical Temperature 400°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	157	44	-	-
9	260	68	39	-
12		94	53	37
15		122	68	47

Board Thickness (mm)	Critical Temperature 450°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	238	48	-	-
9	260	75	41	-
12		105	56	38
15		138	72	49

Board Thickness (mm)	Critical Temperature 500°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	260	55	-	-
9		89	46	-
12		127	64	42
15		170	83	54

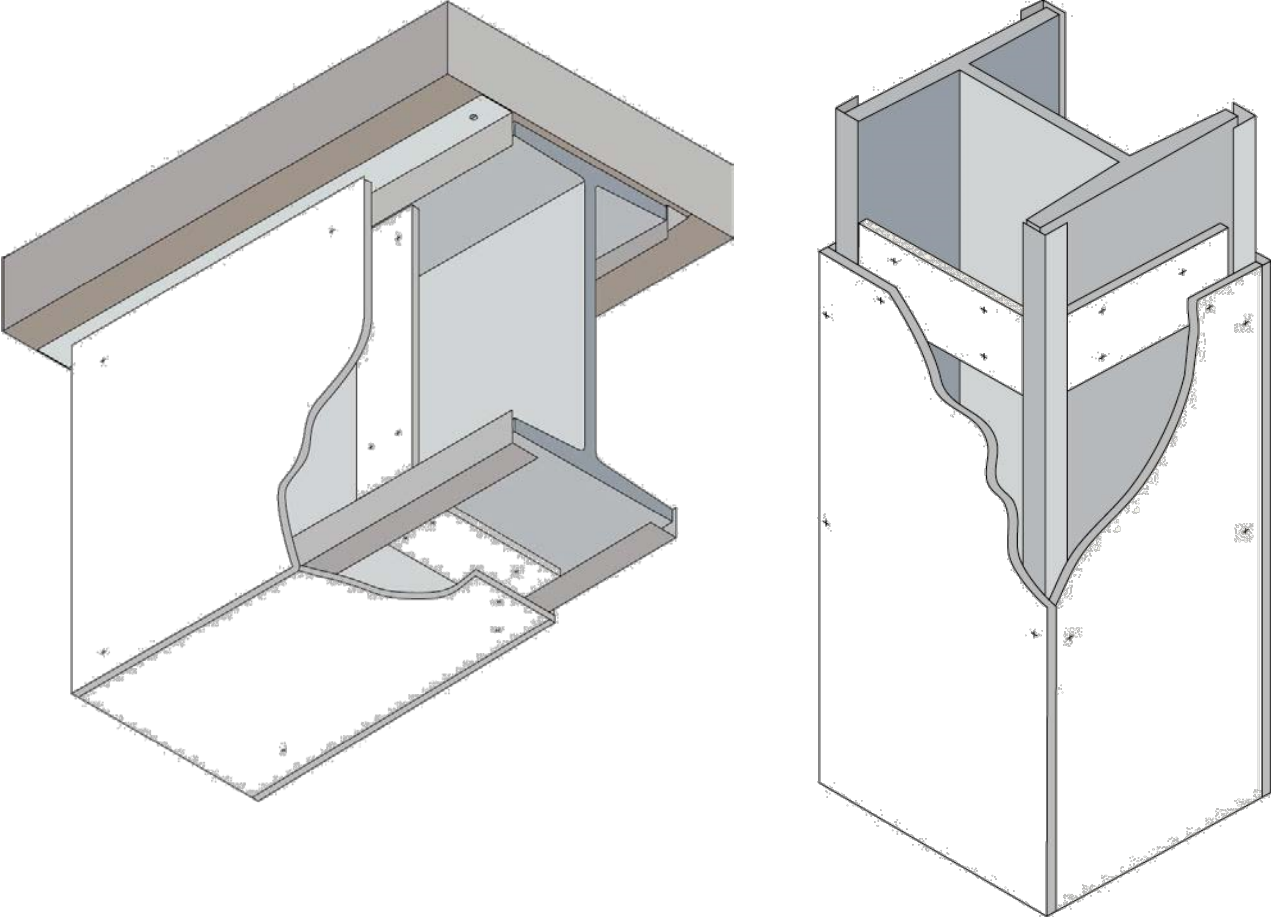
Board Thickness (mm)	Critical Temperature 550°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	260	64	-	-
9		107	52	-
12		158	73	47
15		224	96	61

Board Thickness (mm)	Critical Temperature 600°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	260	77	-	-
9		134	60	-
12		212	86	54
15		260	116	71

Board Thickness (mm)	Critical Temperature 620°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	260	84	-	-
9		149	64	-
12		243	93	57
15		260	128	76

Board Thickness (mm)	Critical Temperature 650°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	260	99	-	-
9		177	74	-
12		260	107	66
15			147	87

Board Thickness (mm)	Critical Temperature 700°C			
	Limiting section factor (m ⁻¹) for fire resistance of			
	30 min	60 min	90 min	120 min
6	260	135	-	-
9		243	95	-
12		260	137	83
15			188	109



The data provided complies with the principles in Sections 3 and 4 of this Yellow Book

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VERMICULUX®

- 1. Product description**
Lightweight reinforced calcium silicate insulating board. (Quality assurance to BS EN ISO 9001:2000)
- 2. Manufacturer**
ETEX BUILDING PERFORMANCE LTD
Gordano House, Marsh Lane, Bristol, BS20 0NE
Technical: T: 0800 145 6033 E: technical.promat@etexbp.co.uk
Sales: T: 0800 373 636 E: orderline@etexbp.co.uk
www.promat.co.uk
- 3. Availability**
Supply through nominated distributors, many offering specialist cutting facilities: list of distributors and recommended contractors available from manufacturer
- 4. Protection technique**
Box
- 5. Application technique**
 - a) Casings assembled by edge screw fix
 - b) Nogging and staple fix option available – contact Promat Technical Services for advise.
Factory formed rebates between panels at circumferential joints - no cover strips required. Web panels are cut to oversail the flange panels.
- 6. Steel preparation requirements**
None
- 7. Additional mechanical fixing**
For 3-sided applications, a steel angle is fixed to wall or floor soffit. For information on 1 and 2-sided applications, contact Promat Technical Services for advice.
- 8. Nominal density**
500 kg/m³
- 9. Thickness range**
20 to 60mm in 5mm increments
- 10. Fire resistance range**
 - a) Up to 4hours (2hours for noggin fix)
 - b) A/V up to 260m⁻¹
- 11. Constraints for fire resistance**
 - a) Single thickness casing system with minimum thickness of 20mm, and maximum thickness of 60mm panels
 - b) Minimum screw penetration – 30mm
- 12. Appearance**
Off-white with smooth sanded surface to both sides.
- 13. On site use**
Internal and semi exposed applications can be installed before building envelope is completed. For external applications contact Promat Technical Services for advice.
- 14. Durability**
High resistance to high humidity and temperature, abrasion, light impact, vermin attack and mould growth.
- 15. Performance in other BS fire tests**
Non-combustible in accordance with BS 476: Part 4, Class A1 in accordance with BS EN 13501-1:2002, and therefore is also a Class 0 material as defined in Building Regulations 2000.
- 16. Other applications**
 - a) Protection to structural concrete
 - b) Protection to structural timber

Board Thickness (mm)	Critical Temperature 300°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	119	61	41	24	-
25		183	84	54	32	22
30		260	112	70	40	28
35			148	88	48	33
40			194	109	58	39
45			255	134	68	46
50			260	163	79	52
55				199	92	60
60				244	106	67

Board Thickness (mm)	Critical Temperature 350°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	160	77	51	30	-
25		252	107	68	39	27
30		260	145	88	49	34
35			193	111	60	41
40			258	138	72	48
45			260	171	85	56
50				211	99	64
55				260	115	73
60					132	83

Board Thickness (mm)	Critical Temperature 400°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	216	97	62	36	-
25		260	136	84	47	33
30			187	109	59	41
35			254	139	73	49
40			260	175	87	58
45				218	103	68
50				260	121	78
55					141	89
60					164	101

Board Thickness (mm)	Critical Temperature 450°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	260	121	76	43	-
25			173	103	57	39
30			243	135	71	48
35			260	174	88	59
40				222	106	69
45				260	126	81
50					149	94
55					175	107
60					204	122

Board Thickness (mm)	Critical Temperature 500°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	260	154	92	51	-
25			225	127	68	46
30			260	169	86	57
35				220	106	69
40				260	128	82
45					154	97
50					183	112
55					216	129
60					255	147

Board Thickness (mm)	Critical Temperature 550°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	260	202	114	61	-
25			260	159	81	54
30				215	103	67
35				260	128	82
40					156	98
45					189	115
50					227	134
55					260	155
60						178

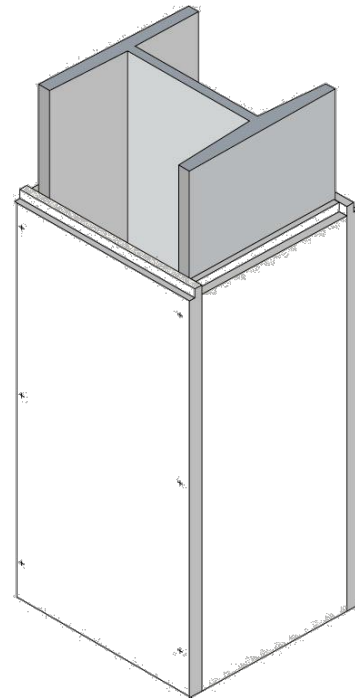
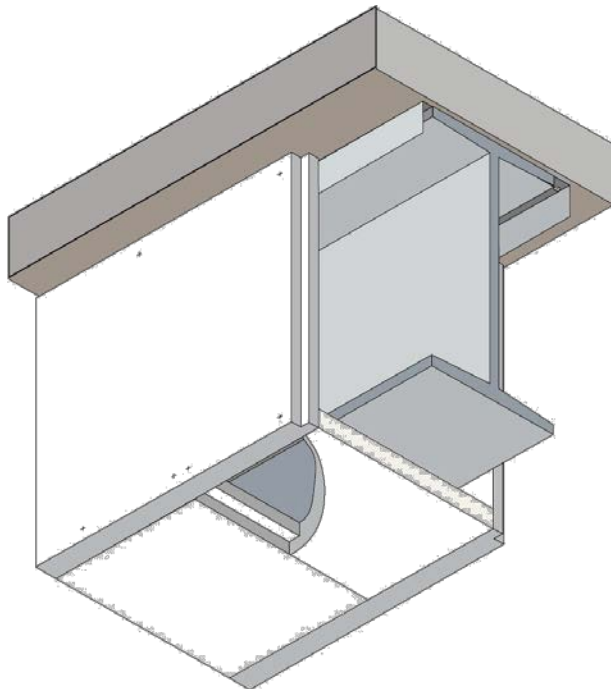
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 The data provided complies with the principles in Sections 3 and 4 of this Yellow Book

Board Thickness (mm)	Critical Temperature 600°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	260	260	145	73	-
25				207	97	63
30				260	125	80
35					157	97
40					194	117
45					237	138
50					260	162
55						188
60						218

Board Thickness (mm)	Critical Temperature 620°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	260	260	162	79	-
25				234	105	68
30				260	136	85
35					171	104
40					213	126
45					260	149
50						175
55						205
60						238

Board Thickness (mm)	Critical Temperature 650°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	260	260	205	89	-
25				260	120	75
30					158	94
35					202	117
40					257	141
45					260	169
50						201
55						238
60						260

Board Thickness (mm)	Critical Temperature 700°C					
	Limiting section factor (m ⁻¹) for fire resistance of					
	30 min	60 min	90 min	120 min	180 min	240 min
20	260	260	260	260	112	-
25					156	89
30					211	114
35					260	142
40						175
45						214
50						259
55						260
60						



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