

Uniclass L6611:N3235	EPIC F521: Y423
Cl/SfB	Ry (K3)

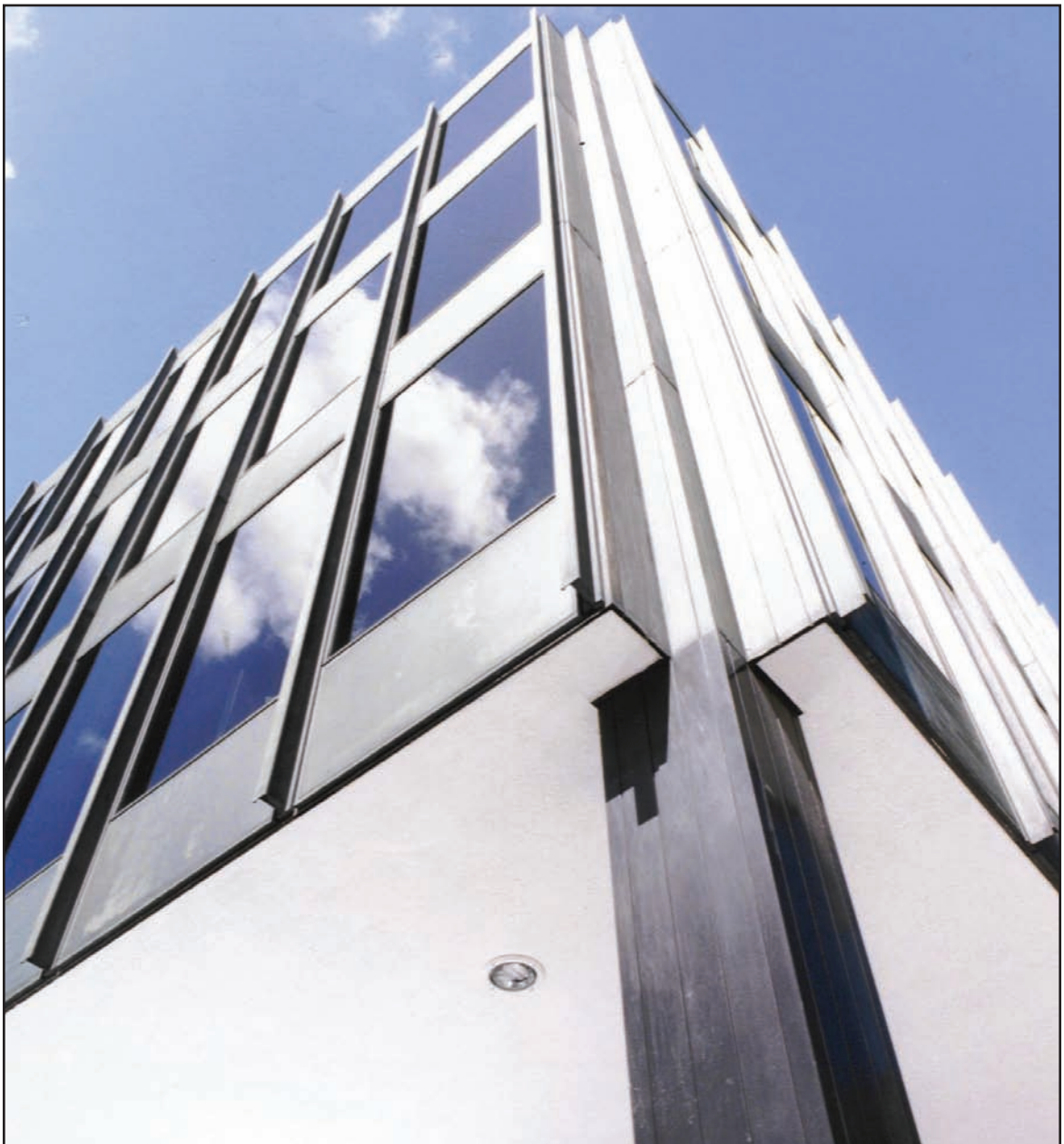
July 2007

**Promat**



# Promat PROMATECT®-B

*The high performance exterior substrate board*



## Promat PROMATECT®-B Exterior Substrate Board

### Contents

Introduction	3
Performance Characteristics	4/5
Constructions: Timber frame; Metal frame; Soffits; Promat PROMASEAL®-RSB	6/9
Working, Fixing and Decorating	10/11





# Promat PROMATECT®-B Exterior Substrate Board

## Introduction

Promat PROMATECT®-B is a Class 0 building board which has outstanding dimensional stability. It can be used as a substrate for a variety of thin coat polymeric renders, textured finishes and other surface coatings. Promat PROMATECT®-B can also be used to provide a seamless finish system. It is easy to cut on site with standard wood working tools.

## DESCRIPTION

Promat PROMATECT®-B is a medium density fibre reinforced calcium silicate board which has been formulated without inorganic fibres. Available in a standard 10mm thickness, it is off-white in colour and has a smooth surface on the front face and textured on the reverse. The smooth face is for painting and the textured face for thin coat polymeric renders. Boards are pre-treated with a water repellent on both faces. This reduces water uptake and enhances the compatibility with the coating system, which may eliminate the need for further priming.

Coating manufacturers' recommendations must be sought and followed at all times.

When used for exterior applications Promat PROMATECT®-B must be decorated but it can be left exposed for up to 6 months prior to decoration. Boards can be used as a component of an external rainscreen cladding system either as the external decorated board, which will protect the thermal insulation, or as a support for the insulation which would then be finished with a thin coat polymeric render.

Promat PROMATECT®-B is water vapour permeable which helps to eliminate condensation or water trapped behind the board. It has Class 0 fire performance, Class 1 Spread of Flame and is classified as a material of limited combustibility. Boards can also be used in external wall constructions to provide 60 minutes fire resistance (see details on page 4).

The base board contains no soluble additives and performance is not degraded with age. Boards are fixed using nails or screws, with no requirement for pre-drilling.

## PRODUCT BENEFITS

- High dimensional stability
- Excellent coating compatibility
- Seamless finish
- Fire resistant construction
- Class 0
- Resistance to effects of moisture
- Easy to cut, work and fix
- Impact resistance

General Technical Data	
Thickness (mm)	10
Length (mm)	2500
Width (mm)	1200
Approximate weight (kg/m <sup>2</sup> )	12.0
Designation	Calcium silicate
Material Class	Limited combustibility
Surface spread of flame	Class 1
Building Regulations classification	Class 0
Nominal dry density (average) Kg/m <sup>3</sup>	1100 (dry)
Alkalinity (approximately) pH	7-10
Thermal conductivity (approximately) at 20°C W/mK	0.19
Coefficient of expansion (20-100°C) m/mK	7.5 x 10 <sup>-6</sup>
Nominal moisture content, ambient %	6
Moisture movement (ambient to saturated) %	≤ 0.1
Water vapour resistivity (MNs/gm)	112
Water vapour permeability (gm/MNs)	0.0089
Thickness tolerance of standard boards mm	± 0.5
Length x Width tolerance of standard boards mm	± 3.0
Surface condition	Front face: Smooth, Back face: unsanded

## Promat PROMATECT®-B Exterior Substrate Board

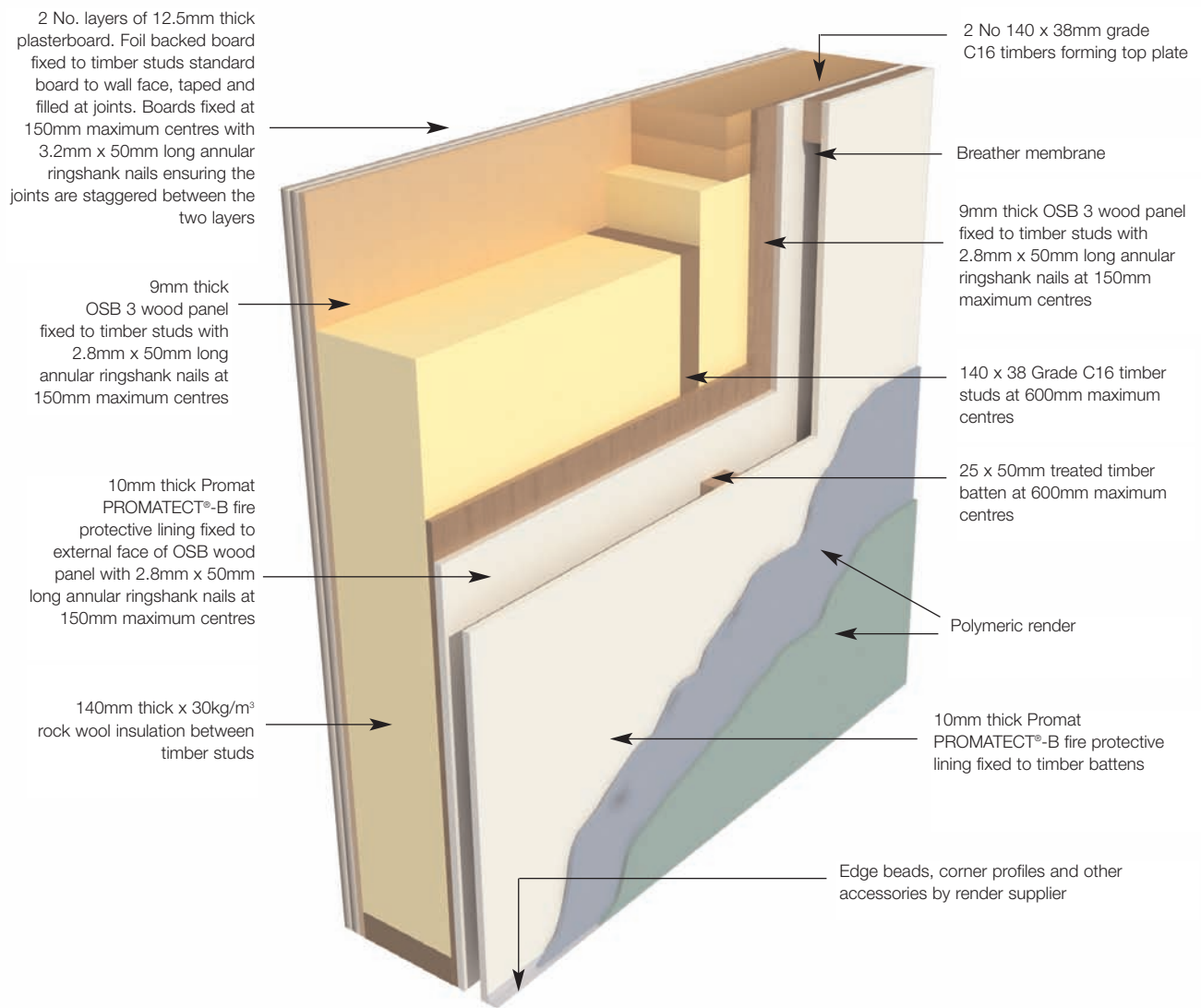
### Performance Characteristics

#### FIRE

The external surfaces of the external wall constructions should be tested in accordance with BRE Fire Note 9, Assessing the Fire Performance of External Cladding Systems. In the case of the outer cladding of rainscreen construction (with a drained and ventilated cavity) the surface of the outer cladding which faces the cavity must also meet these requirements.

Promat PROMATECT®-B has been tested in accordance with BS 476: Part 21: 1987 achieving 60 minutes fire resistance as part of a load bearing timber frame external wall (see detail).

The timber frame should be designed in accordance with the requirements of BS 5268.



60 minutes fire rated loadbearing external wall

Thermal Performance  
U-value: 0.25 W/m²K

Acoustic Performance  
Rw: 53-56 dB



## Promat PROMATECT®-B Exterior Substrate Board

### Performance Characteristics

#### IMPACT TEST

##### **BS 5234 Part 2: 1992 Annex A to E and G.**

External cladding systems have to withstand different levels of impact. This depends on where they are situated in the building and whether they will be subject to special circumstances.

Tests include impact of hard and soft bodies and crowd pressure on a complete construction. Promat PROMATECT®-B has been independently tested and successfully passed all the above tests. Refer to test reference number: SGCN 63, March 2005.

#### WIND LOADING

External cladding has to withstand wind loadings. The imposed load relates to the height of the building, geographical location and the general topography. All these factors are taken into consideration in BS 6399: Part 2: 1997. The wind loading performance of a cladding system is determined by factors including:

- Pull out strength and spacing of wall anchors.
- The spanning characteristics and the spacing of the studs/rails.
- The number and arrangement of the fasteners.
- The strength, thickness and stiffness of the cladding panel.

Refer to fixing recommendations on page 10. For further advice, please contact the Promat UK Technical Services Department.

#### LONG TERM DURABILITY

An external cladding system should be resistant to the effects of natural weathering due to heat and UV radiation from the sun and the effects of rain, frost and environmental pollutants e.g. carbon dioxide. The cladding must also withstand the effects of mould growth and lichens. For certain situations e.g. coastal areas, there is also the need to withstand the effects of salt.

Promat PROMATECT®-B has been successfully subjected to frost resistance and accelerated ageing tests in accordance with BS EN 12467: 2004. When rendered with an acrylic polymer system, Promat PROMATECT®-B has successfully passed 30 year accelerated ageing tests.

#### RACKING PERFORMANCE

**Facing:** 10mm Promat PROMATECT®-B.

**Framing:** 90mm x 40mm timber studs at 600mm centres. Cross noggings required at board joints.

**External lining:** 2500mm x 1200mm x 10mm Promat PROMATECT®-B, butt jointed and fixed with 50mm long, 3.35mm diameter nails at 150mm centres around the perimeter and 300mm centres on intermediate studs.

This construction achieved a basic racking resistance (BRR) of 1.93kN/m when tested to BS 5268: Section 6.1 (University of Surrey, February 1994). For the purpose of load calculations, this figure is only applicable for use with vertical load factors in the range up to 2.5kN/stud.

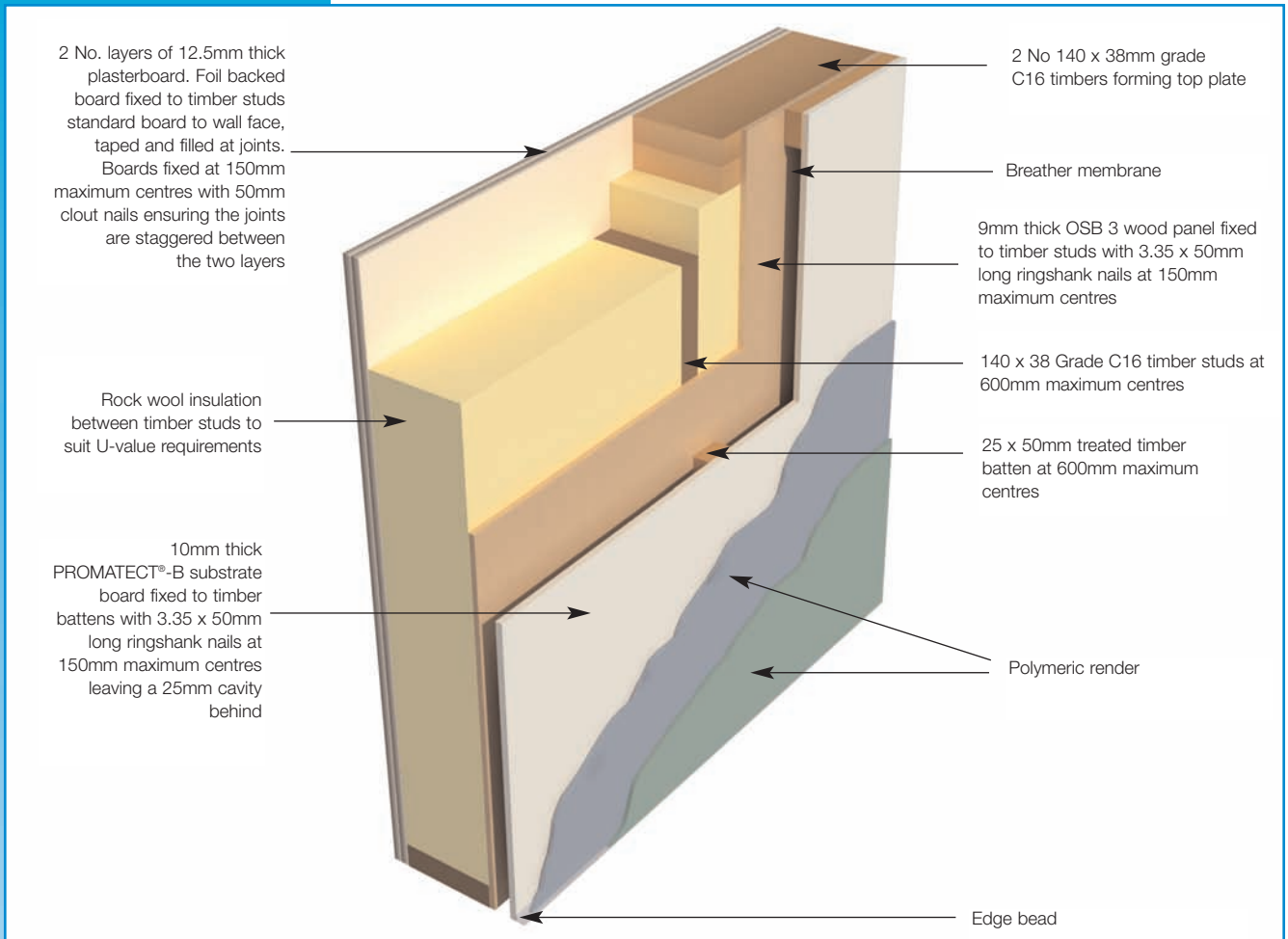


## Promat PROMATECT®-B Exterior Substrate Board

### Constructions

#### TIMBER FRAME CONSTRUCTION

Promat PROMATECT®-B can be successfully used to form the outer skin of timber framed buildings. The detail indicates a typical external wall suitable for a load bearing construction of a two storey house (for fire rating in these circumstances, refer to detail on page 4).



Note: Thermal performance is dependent on construction.



Promat PROMATECT®-B cladding with polymeric render on timber frame house

Thermal performance (U value) of timber frame external wall system - for various insulation types as detailed

Timber stud size (mm)	Support Centres (mm)	Construction U-values (W/m <sup>2</sup> K)		
		Rock wool insulation (λ 0.035 WmK)	Rock wool insulation (λ 0.038 WmK)	Phenolic insulation (λ 0.021 WmK)
150 x 50	600	0.25	0.27	0.18
150 x 50	400	0.27	0.29	0.21
100 x 50	600	0.35	0.37	0.26
100 x 50	400	0.38	0.39	0.29

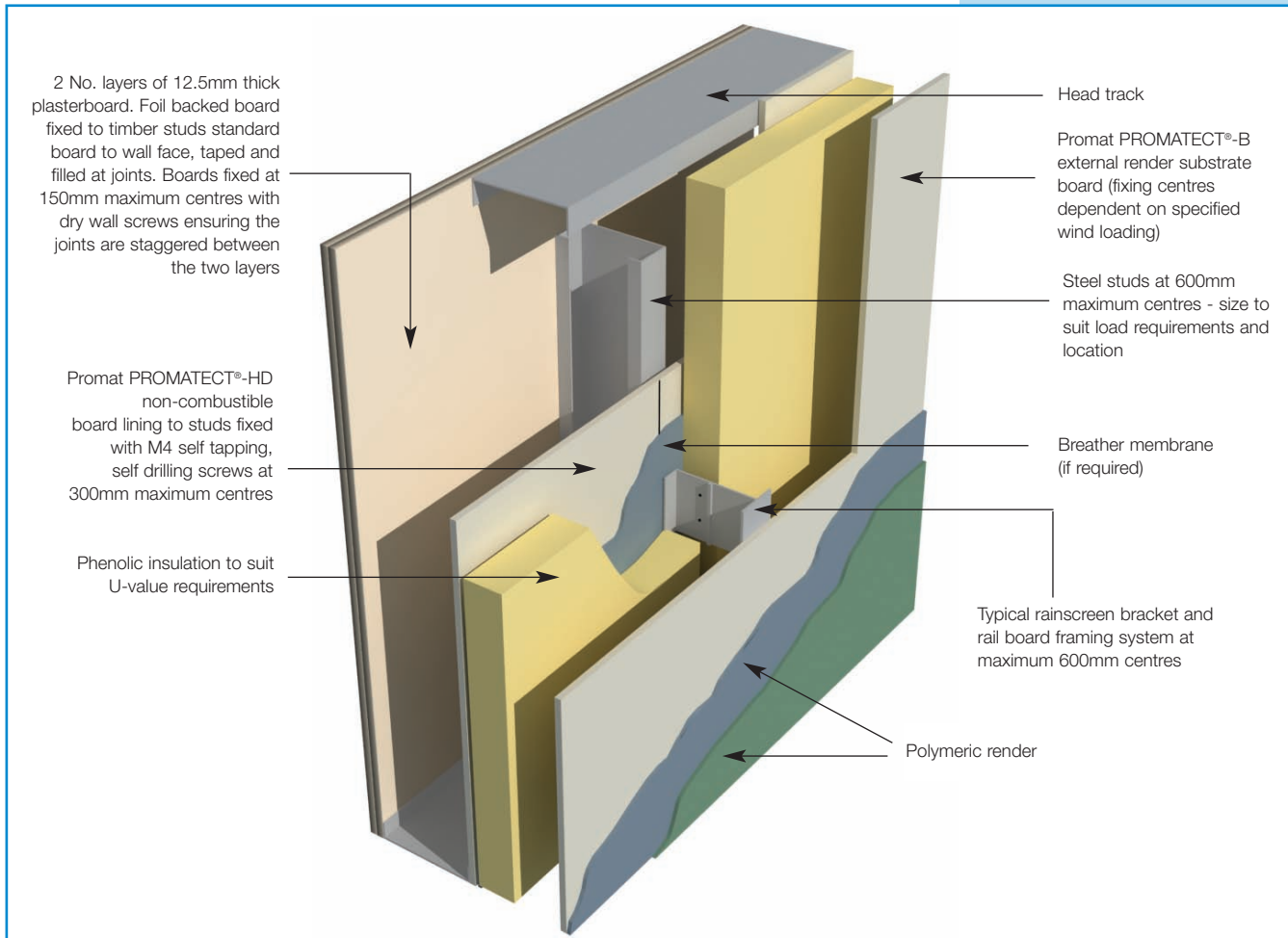


# Promat PROMATECT®-B Exterior Substrate Board

## Constructions

### STEEL FRAME CONSTRUCTION

The detail indicates a non-load bearing steel frame external wall suitable for steel frame, domestic and commercial buildings.



**Thermal Performance** U value: 0.27 W/m<sup>2</sup>K (based on 100mm phenolic insulation: λ 0.021 W/mK).

U-value will vary according to specific details of the bracket system – contact manufacturer of the insulation system for further advice.

Results quoted for this construction are based on the following assumptions:

- The bracket system is at 600mm centres (or greater)
- The bracket thickness is no more than 4mm at the base
- The bracket is less than 80mm high
- A minimum ventilated cavity of 38mm is maintained

Consideration may need to be given to inclusion of a thermal isolation pad and breather membrane (according to advice from manufacturer of the insulation system).

The above detail is typical only and all structural calculations and other design considerations should be undertaken by a suitable qualified engineer.



## Promat PROMATECT®-B Exterior Substrate Board

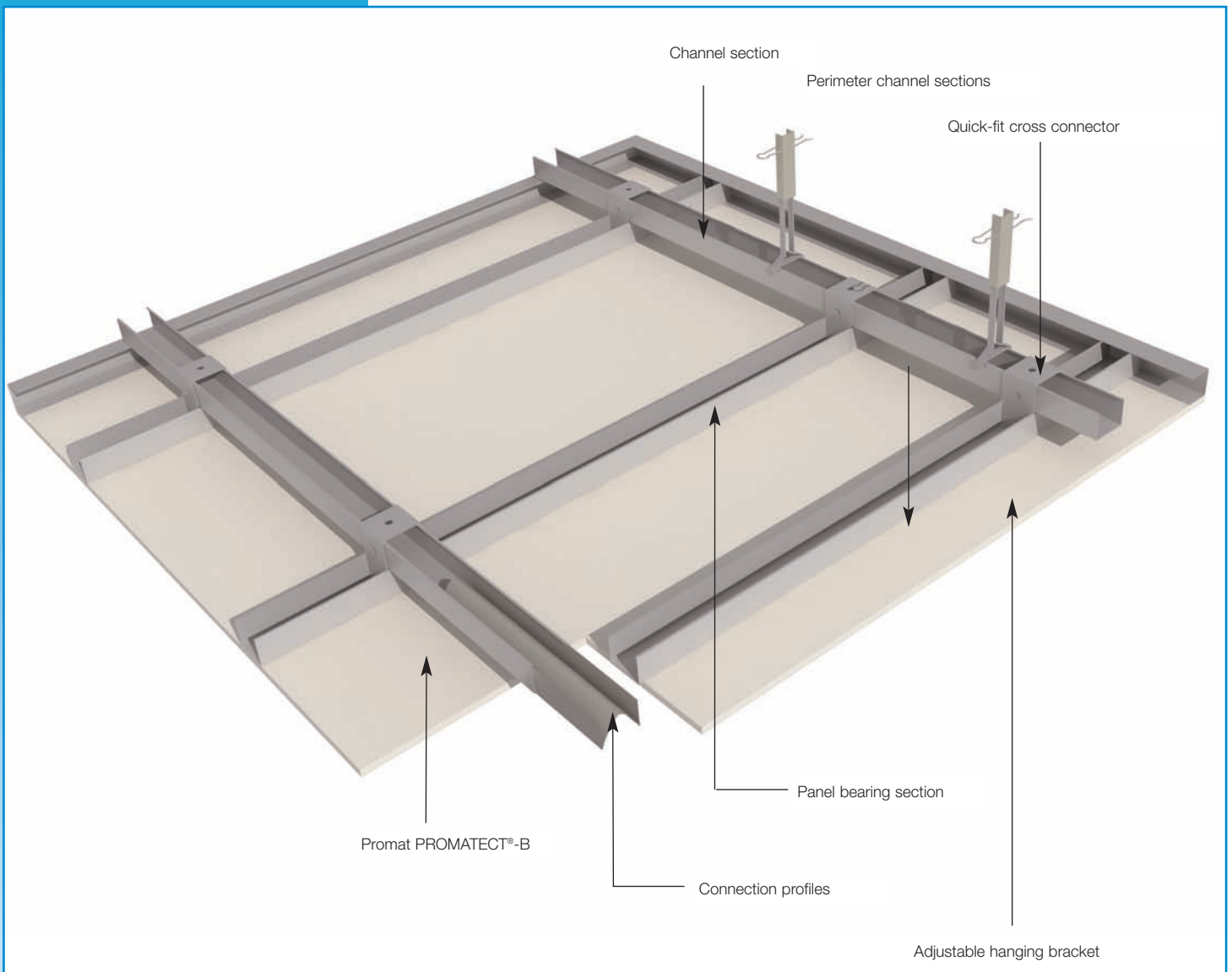
### Constructions

#### SOFFITS

Promat PROMATECT®-B has been used successfully to form soffits for seamless systems with polymeric renders and panel systems using an exterior grade paint.

#### Support Framework

Use anti-corrosive or external grade metal suspension system. Contact Promat Technical Services for system, grid layout and fixing centres suitable for climatic and wind loading conditions.



For soffit applications, Promat PROMATECT®-B can be left undecorated or can be finished with an external grade paint. For a seamless finish, use a textured paint, with joints taped and filled. Alternatively, a thin coat polymeric render can be used for more exposed areas. Recommendations from coating system manufacturers should be followed at all times. Please contact the Promat Technical Services Department for details.



## Promat PROMATECT®-B Exterior Substrate Board

### Constructions

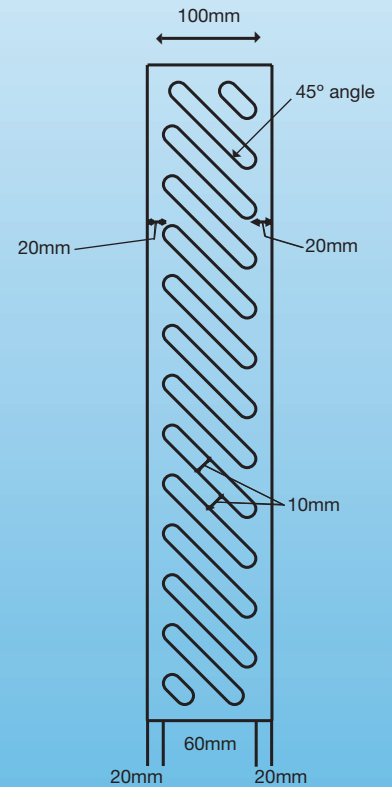
#### Promat PROMASEAL® RAINSCREEN BARRIER

Promat PROMASEAL®-RSB is a purpose-made rainscreen barrier fire-stopping system, comprising of a perforated intumescent sheet bonded to a similarly perforated galvanised steel flat sheet, available in 100, 125 and 150mm widths.

Promat PROMASEAL®-RSB is screw or rivet fixed to a separate bracket or angle to form a ventilated cavity barrier with 60 minutes fire resistance. Refer to product literature for further details.

#### Advantages

- Fire tested for 60 minutes (integrity only)
- Easy to install
- Lightweight
- Allows continuous ventilation behind cladding
- Water tolerant
- Adjustment of fit by means of fixing to angle
- Economical
- Convenient 1 metre lengths
- Non-corrosive
- Available in various widths



Typical standard detail



## Promat PROMATECT®-B Exterior Substrate Board

### Working, Fixing and Decorating

#### WORKING

Normal wood working tools can be used.

#### Cutting

Fast rough cuts, where the board edge will not be visible, can be made by scoring with a sharp knife and snapping over a straight edge. For exposed edges, use a panel saw with a hardened blade. For shaped cuts, use a padsaw, keyhole saw or coping saw. Use tungsten carbide or diamond tipped blades for power sawing.

#### Drilling

Use normal, low or high-speed drills with masonry tips for drilling.

#### Sanding

Cut edges can be smoothed with a surform plane, rasp or file.

#### FIXING

All fixings should be corrosion resistant.

#### Nailing

Nails can be driven not less than 12mm from board edges without pre-drilling.

Do not use lost-head nails or panel pins.

#### Screwing

Use no. 8 self-countersunk screws. Pre-drilling is only required when fixing to metal framework using stainless steel screws.

### SUPPORT/FIXING CENTRES

Fixings	Windload (kN/m <sup>2</sup> )	Support centres (mm)	Fixing centres (mm)
<b>Countersunk screws</b> No. 6 or 8	0 – 1.5	600	400
	1.5 – 2.0	600	300
<b>Nails</b> Minimum head diameter 5.5mm	0 – 1.5	600	150

*Where high levels of impact are anticipated, e.g. at ground level in areas exposed to the public, reduced support centres and/or noggings may be required to increase the impact resistance.*

#### Joint Gaps

Promat PROMATECT®- B can be butt-jointed.

#### Expansion Joints

Expansion joints should correspond with those in the structure. Additional expansion joints may be required for continuous runs in excess of 6m. Please contact the Promat Technical Services Department for further details.



## Promat PROMATECT®-B Exterior Substrate Board

### Working, Fixing and Decorating

#### DECORATING

Promat PROMATECT®-B will accept most proprietary paints and thin coat polymeric renders, such as those used on the following projects:

- Sandtex Hi-Build (Bank of Ireland)
- Weber Meshtex (Griffner Coillte)

#### HANDLING AND STORAGE

Store boards under cover on a flat base. If dunnage blocks or racks are used, the boards must be fully supported across their width at not more than 1m centres. If stored in the open, protect stacks from the weather.

#### MAINTENANCE

The decorative coating applied to Promat PROMATECT®-B must be maintained as necessary in accordance with the decorative system manufacturer's recommendations, in order to retain its appearance and integrity. Damaged boards should be replaced.

#### HEALTH AND SAFETY

A safety data sheet is available from the Promat Technical Services Department and, as with any other materials, should be read before working with the board. The board is not classified as a dangerous substance and so no special provisions are required regarding the carriage and disposal of the product to landfill. They can be placed in an on-site skip with other general building waste which should be disposed of by a registered contractor.

### Promat Case Study – Bank of Ireland

The outstanding performance of Promat PROMATECT®-B exterior substrate board from Promat has led to its use in refurbishing a prominent, 6m wide, overhanging soffit at the headquarters of the Bank of Ireland in Dublin.

Over 1,700m<sup>2</sup> of high performance Promat PROMATECT®-B pre-primed Class 0 calcium silicate board - was specified to replace a very visible and weather susceptible soffit system of rendered steel mesh which had corroded and failed prematurely.

The versatility of Promat PROMATECT®-B is enhanced by its functional two-sided aspect: the smooth side can be painted, while the reverse side is suitable for rendering. In this instance with a Sandtex Fine Build decorative finish to keep as close as possible to the original building design by Scott Tallon Walker Architects.

The replacement system was specified by the bank's own architects department. The specifier said "We initially experienced difficulty in identifying a suitable product to match the exposure ratings we were seeking. The area around the headquarters has its own miniature weather system where neighbouring buildings cause the wind to swirl up and deposit moisture onto the soffits.

Specialist subcontractor Arthur Armstrong Suspended Ceilings installed the 10mm thick sheets of Promat PROMATECT®-B to stainless steel MF secondary sections using stainless steel self-tapping screws at 100mm centres. An insulating layer of 100mm glass fibre roll wrapped in polythene and manufactured by Moy Isover Limited, was positioned above the board in the still air void. The render was then applied and given a water repellent coating to help ensure its longevity.

Promat PROMATECT®-B will not rot, warp or shrink. It is easy to cut and fix and can be used for fascia, infill panels, window surrounds and as an exterior cladding. When finished with textured coatings or polymer-based renders, the board can be used to upgrade high or low rise buildings.



**HEAD OFFICE, Belgium**

Promat International NV  
Bormstraat 24  
BE-2830 Tisseelt  
Tel. +32 15 71 81 00  
Fax +32 15 71 81 09  
E-mail info@promat-international.com  
www.promat-international.com  
www.promat-tunnel.com

**AUSTRALIA**

Promat Australia Pty Ltd.  
Unit 1, 175 Briens Road  
AU- NSW 2152 NORTHMEAD  
Tel. +61 2 9630 4922  
Fax +61 2 9630 0258  
E-mail mail@promat.com.au

Promat Australia Pty Ltd.  
1 Scotland Road, Mile End  
AU- SA 5031 ADELAIDE  
Tel. +61 8 8352 6759  
Fax +61 8 8352 1014  
E-mail mail@promat.com.au

Promat Australia Pty Ltd.  
3/273 Williamstown Road  
AU- VIC 3207 PORT MELBOURNE  
Tel +61 3 9645 3866  
Fax +61 3 9645 3844  
E-mail mail@promat.com.au  
www.promat.com.au

**AUSTRIA**

Promat Ges.m.b.H.  
Seybelgasse 13  
AT-1230 WIEN  
Tel. +43 1 865 45 01  
Fax +43 1 865 36 00  
E-mail office@promat.at  
www.promat.at

**BELGIUM**

Promat NV SA  
Kuiermansstraat 1  
BE-1880 KAPELLE-OP-DEN-BOS  
Tel. +32 15 71 33 51  
Fax +32 15 71 82 29  
E-mail info@promat.be  
www.promat.be

**CHILE**

Promat Chile S.A.  
Camino a Melipilla 10.803, Maipú  
CL-SANTIAGO, Providencia  
Santiago  
Tel. +56 2 391 22 00  
Fax +56 2 557 31 62  
E-mail promat@promat.cl  
www.promat-international.com

**CHINA**

Promat China Ltd. and  
Promat South China (Div. Promat  
China Ltd.)  
Room 504, Block B, Qi Lin Plaza  
13-15 Pan Fu Road  
CN-510180 GUANGZHOU  
Tel. +86 20 8136 1167  
Fax +86 20 8136 1372  
E-mail infot@promat.com.cn

Promat North China (Div. Promat  
China Ltd.)  
Room 1507 Building 5  
SOHO Xiandaicheng No.88 Jianguo  
Road  
Chaoyang District  
CN-100022BEIJING  
Tel. +86 10 8589 1254  
Fax +86 10 8589 2904  
E-mail info@promat.com.cn  
www.promat.com.cn

**CZECH REPUBLIC**

Promat s.r.o.  
Ckalova 22/784  
CZ-160 00 PRAHA 6-BUBENEC  
Tel. +420 2 3333 4806  
Fax +420 2 3333 3576  
E-mail promat@promatpraha.cz  
www.promatpraha.cz

**FRANCE**

Promat S.A.S.  
rue de l'Amandier B.P. 66  
FR-78540 VERNOUILLET  
Tel. +33 1 39 79 61 60  
Fax +33 1 39 71 16 60  
www.promat.fr

**GERMANY**

Promat GmbH  
Scheifenkamp 16  
DE-40878 RATINGEN 1  
Tel. +49 21 02 49 30  
Fax +49 21 02 49 31 11  
E-mail mail@promat.de  
www.promat.de

**GREAT BRITAIN**

Promat UK Limited  
The Sterling Centre  
Eastern Road, Bracknell  
Berkshire RG12 2TD  
GREAT BRITAIN  
Tel. +44 1344 381 300  
Fax +44 1344 381 301  
www.promat.co.uk

**HONG KONG**

Promat International  
(Asia Pacific) Ltd.  
Room 1010, C.C.WU Building  
302-308 Hennessy Road  
HK-WANCHAI  
Tel. +852 2836 3692  
Fax +852 2834 4313  
E-mail apromath@promat.com.hk  
www.promat-ap.com

**INDIA**

Promat Int. (Asia Pac.) Ltd.  
India Representative Office  
Flat No. S-4, Second Floor B-87,  
Defence Colony  
IN-110 024 NEW DELHI  
Tel. +91 11 2433 1594  
Fax +91 11 2433 1595  
E-mail info-india@promat-asia.com  
www.promat-ap.com

**ITALY**

Promat S.p.A.  
Corso Paganini 39/3  
IT-16125 GENOVA  
Tel. +39 010 24 88 411  
Fax +39 010 21 37 68  
E-mail info@promat.it  
www.promat.it

**MALAYSIA**

Promat Int. (Asia Pacific) Ltd.,  
Unit 19-02-01, Level 2  
PNB Damansara  
No. 19 Lorung Dungun  
Damansara Heights  
MY-50490 KUALA LUMPUR  
Tel. +60 3 2095 8555  
Fax +60 3 2095 2111  
E-mail info@promat-ap.com  
www.promat-ap.com

Promat (Malaysia) Sdn. Bhd.  
Unit 19-02-01, Level 2  
PNB Damansara  
No. 19 Lorung Dungun  
Damansara Heights  
MY-50490 KUALA LUMPUR  
Tel. +60 3 2095 8555  
Fax +60 3 2095 2111  
E-mail info@ppromat.com.my  
www.promat-ap.com

**The NETHERLANDS**

Promat B.V.  
Zonnebaan 36  
NL-3542 EE UTRECHT  
Tel. +31 30 241 0770  
Fax +31 30 241 0771  
E-mail info@promat.nl  
www.promat.nl

**POLAND**

Promat TOP Sp.oz.o  
Ul. Przeclawska 8  
PL-03-893 WARSZAWA  
Tel. +48 22 212 2280  
Fax +48 22 212 2290  
E-mail top@promatop.pl  
www.promatop.pl

**RUSSIA**

Promat GmbH  
Repräsentanz  
ul. Kantemirovskaya 58  
RU-115477 MOSCOW  
Tel. +7 095 325 42 68  
Fax +7 095 231 79 77  
E-mail promat@komplekt-moscow.ru  
www.promat.ru

**SINGAPORE**

Promat Building System Pte Ltd.  
10 Science Park Road #03-14  
The Alpha,  
Singapore Science Park II  
SG-117684 SINGAPORE  
Tel. +65 6294 9689  
Fax +65 6294 9783  
E-mail promavic@singnet.com.sg  
www.promat.com.sg

**SPAIN**

Promat Ibérica S.A.  
C/ Velazquez, 41 – 2 Planta  
ES-28001 MADRID  
Tel. +34 91 781 15 50  
Fax +34 91 575 15 97  
E-mail info@promatiber.es  
www.promatiber.es

**SWITZERLAND**

Promat AG  
Stationsstrasse 1  
CH-8544 RICKENBACH-ATTIKON  
Tel. +41 52 320 94 00  
Fax +41 52 320 94 02  
E-mail office@promat.ch  
www.promat.ch

**UNITED ARAB EMIRATES**

Promat UK Limited-Export  
Mac al Gurg, P.O. Box 672  
UAE-DUBAI  
Tel. +971 4 282 46 81  
Fax +971 4 282 46 84  
E-mail: gmann@promat.co.uk  
www.promat.co.uk

**Promat**



**Promat Ireland**

6 South Leinster Street, Dublin 2  
Tel: +353 1 419 0437 Fax: +353 1 460 8802  
www.promat.ie

Promat UK Limited Trading  
as Promat Ireland