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CI/SfB (23.9)	Ry (M2)



Promat

Promat TL Board[®]

Thermal Upgrading Systems for Concrete Decks



www.promat.co.uk

Promat TL Board® Introduction



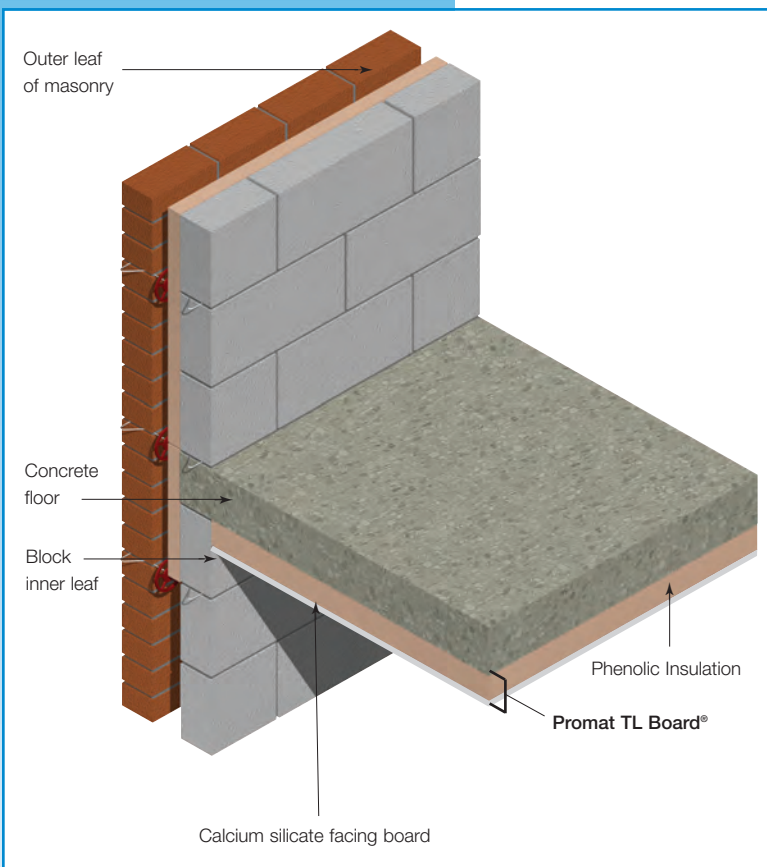
Promat TL Board® is a calcium silicate board bonded to phenolic insulation and is designed to be fixed to the underside of floors (generally concrete) to achieve specific U-values required by the project design and Building Regulations. There is an increasing requirement for the thermal upgrading of semi-exposed concrete decks both in the conversion and refurbishment of existing buildings and in new build constructions.

Promat TL Board® panels can be fitted direct to the underside of a floor or to a supporting framework where the surface is uneven or otherwise unsuitable for direct fix methods.

Promat TL Board® can also be used to upgrade thermal performance of masonry walls, for further details contact Promat Customer Relations Team.

Promat TL Board® has been designed to offer specifiers a high performance, cost effective solution for thermal upgrading and combines the benefits of Promat's calcium silicate technology with the thermal efficiency of phenolic insulation.

Manufacturing methods for Promat TL Board® do not use CFC's or HCFC's (and in particular HCFC 141b) in its manufacture and therefore the BREEAM rating is further enhanced.



Typical Design Detail

FEATURES AND BENEFITS

Environmental Rating

- A+ Green Guide Rating (BREEAM)
- Premium thermal performance (up to 0.020W/mK)
- CFC and HCFC-free (zero ozone depletion)
- Global Warming Potential (GWP) of less than 5
- Accredited to BS EN ISO 14001 (Environmental Management Systems)

System Performance

- BBA Certified (BBA Certificate No 09/4646)
- Low thermal conductivity
- Class 0/Class 1 fire rating
- Non-combustible facing board
- Factory controlled tolerances
- High dimensional stability
- Moisture resistant
- Fast track, dry construction (pre-bonded composite panel)

Life Cycle Cost

- Ease of installation and maintenance
- Impact resistant
- Resistant to cleaning detergents
- High dimensional stability
- Insulation remains effective for lifetime of building

Design and Aesthetics

- Bevelled edge facing board
- Thinnest board per insulation performance
- Ease of decoration
- Ideal for new build and refurbishment



Promat TL Board® Typical Properties

Calcium Silicate	
Dry Density (kg/m ³)	1300
Mass (kg/m ²) for 6mm	8.3 (6% moisture)
Flexural Strength (N/mm ²) (average of 2 directions)	10.5 (dry)
Moisture movement (%) (65% RH to saturated)	≤ 0.15
Thermal conductivity (W/mK)	0.35
Thermal expansion (x10 ⁻⁶ per °C)	6
Effect of dilute acid and alkali	Resistant

Note: Calcium silicate board is a natural off-white colour and can be site decorated.

Phenolic Insulation	
Density (kg/m ³)	50
Mass (kg/m ²) 80mm insulation	4
Water vapour resistance (MNs/g) Tested to BS 4370 Part 2: 1993	> 100 MNs/g (including board facings)
Thermal conductivity (W/mK) (> 45mm thick)	0.020
Compressive Strength - Typical - Perpendicular to face (kN/m ²)	> 100 (10% compression)

PANEL THICKNESSES

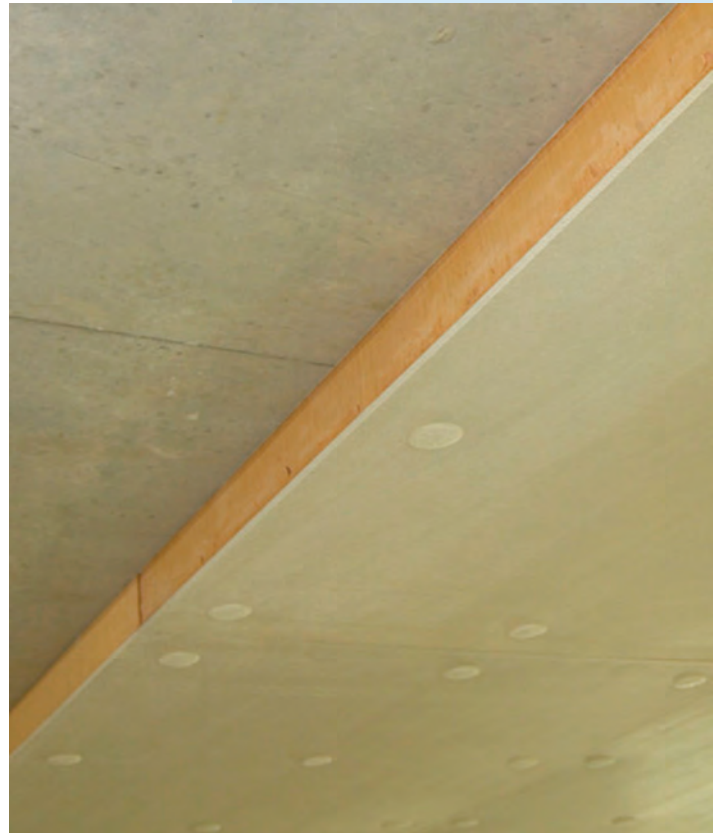
Promat TL Board® is available in the following standard thicknesses (mm):

76, 81, 86, 91, 96, 106, 116, 126.

Other thicknesses are available on request to meet specific insulation requirements.

DIMENSIONS

Promat TL Board® is available as a 2397 x 1197mm panel.

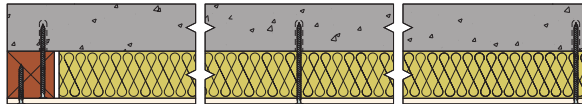


Promat TL Board® Installation Guide

DIRECT FIX SOLUTION

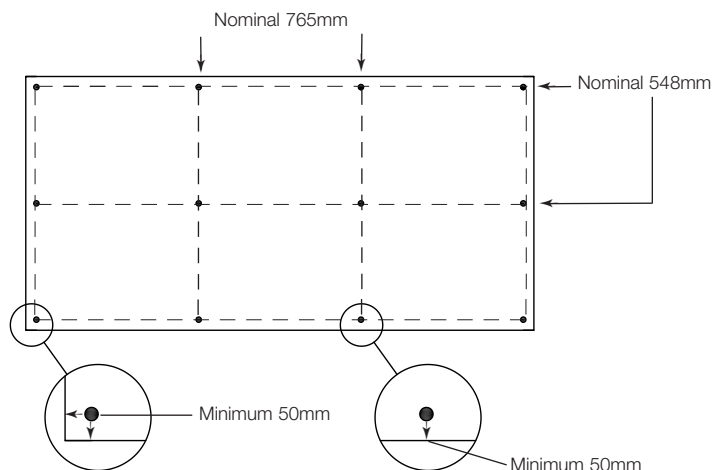
Selected where there is limited ground to soffit height, little or no existing surface-mounted services and a level, regular concrete soffit (limited adjustment can be achieved by adjusting the tightness of the fastenings).

Diagram A – Sectional View of Direct Fix



Note: If non-combustible fastenings are required, recommended fixing Artur Fischer metal frame fixing F-M with a 25mm diameter washer.

Diagram B – Plan View of Fixing Locations



Installation Data

Fixings	Details for recommended metal and non-metallic fastenings are available from Promat Customer Relations Team.
Fixing Centres	Nominal as shown in diagram above (12 fixings per board) on perimeter and in field for negative wind loads not exceeding 0.3kN/m ² (dependant on fixing, fixing head diameter 25mm)
Edge Spacing	Minimum 50mm from edge. Minimum 50mm from corner
Fixings/m²	4.2
Fixing Method	Pre-drill Promat TL Board® and concrete to a depth as recommended by fixing manufacturer, insert fixing and screw tight to "line and level"

Alternative fixing patterns are available for wind loading > 0.3kN/m².



Promat TL Board® Installation Guide

INDIRECT FIX SOLUTION

(Via Treated Timber Battens)

Selected where there is a need to create "line and level" due to the uneven nature of the concrete soffit or where there is a need to accommodate existing surface-mounted services.

Diagram C – Sectional View of Timber Batten Fixing System

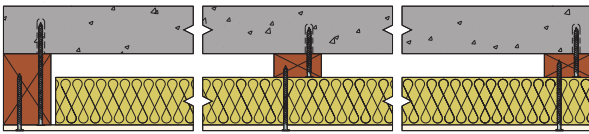
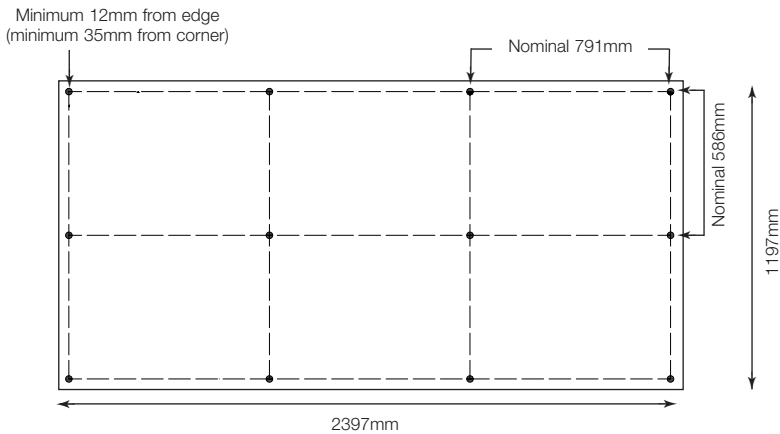


Diagram D – Plan View of Fixing Locations



Installation Data	
Timber Battens	Timber treated to BS 5268: Part 5
Batten Size	Minimum 50mm x 38mm
Batten Fixings	Buildex Tapcon 4F70 or equivalent (for a 50mm x 38mm batten) at nominal 400mm centres
Board Fixing	Recommended fixing: Buildex Roofgrip (RG) screws at nominal centres as shown in diagram above with minimum 30mm penetration into batten for negative wind loads not exceeding 0.2kN/m ² .
Edge Spacing	Minimum 12mm from edge. Minimum 35mm from corner.
Fixings/m ²	4.2

Note: Alternative fixing specifications (fixings per m²), or recommendations for fixing using metal framework, are available from Promat Customer Relations Team.

Promat TL Board® Technical Data

THERMAL PERFORMANCES



NOTE

Calculations based on Promat TL Board® fixed to the underside of 150mm concrete floor in a semi-exposed application. The panel thicknesses provide guidance as to the thermal performance of Promat TL Board®. U Values dependant on precise floor specification and specific fixings used. Please contact Promat Customer Relations Team for further advice.

Promat manufactures bespoke panel thicknesses to meet specified U-values when taking into account the actual thickness and thermal conductivity of the concrete deck construction.

Direct Fix – Plastic Fixings

	Overall thickness (mm)	Weight (kg/m ²)	U-value (W/m ² K)
81mm Promat TL Board®	81	12.1	0.24
86mm Promat TL Board®	86	12.3	0.22
91mm Promat TL Board®	91	12.6	0.21
96mm Promat TL Board®	96	12.8	0.20
106mm Promat TL Board®	106	13.3	0.18

Assuming fixings thermal conductivity less than 1 W/mK

Direct Fix – Metal Fixings

	Overall thickness (mm)	Weight (kg/m ²)	U-value (W/m ² K)
86mm Promat TL Board®	86	12.3	0.26
91mm Promat TL Board®	91	12.6	0.25
96mm Promat TL Board®	96	12.8	0.23
106mm Promat TL Board®	106	13.3	0.21

Assuming 4.2 fixings/m², fixing c/s diameter 5.0mm and thermal conductivity 50 W/mK

Indirect Fix via Timber Battens (with 38mm non-ventilated cavity)

	Overall thickness (mm)	Weight (kg/m ²)	U-value (W/m ² K)
86mm Promat TL Board®	86	12.3	0.26
91mm Promat TL Board®	91	12.6	0.24
96mm Promat TL Board®	96	12.8	0.23
106mm Promat TL Board®	106	13.3	0.21

Assuming 4.2 fixings/m², fixing c/s diameter 5.5mm and thermal conductivity 50 W/mK



Promat TL Board® Technical Data

DIMENSIONAL TOLERANCES

Length	+3.0mm to -3.0mm
Width	+3.0mm to -3.0mm
Thickness	+3.0mm to -3.0mm

EDGE DETAIL

Promat TL Board® panels are supplied with bevel-edged facing boards.

TYPICAL SPECIFICATION CLAUSE

The insulation of the concrete soffit is to be Promat TL Board® xxx mm thick, as manufactured by Promat UK Limited of Bracknell, RG12 2TD and installed in accordance with the manufacturers recommendations.



Promat TL Board® Additional Information

ADDITIONAL CONTACT NUMBERS

**CUSTOMER RELATIONS TEAM:
COMMERCIAL & 1ST LINE TECHNICAL**
(Orders, deliveries, availability and general technical enquiries)

Telephone: 01344 381 381 Fax: 01344 381 380
E-mail: salesuk@promat.co.uk

**CUSTOMER RELATIONS TEAM:
SPECIALIST TECHNICAL**
(Design guidance)

Telephone: 01344 381 400 Fax: 01344 381 401
E-mail: technicaluk@promat.co.uk

MARKETING SERVICES
(Literature and Samples)

Telephone: 01344 381 350 Fax: 01344 381 401
E-mail: marketinguk@promat.co.uk

SERVICES

Surface mounted services must be fixed back to the concrete soffit and not fixed directly on to Promat TL Board®. In order to reduce risk of damage where services are being installed after the Promat TL Board® has been fixed, a M10 x 150mm long stub drop rod hanger grid system should be used (available via M & E Services).

MAINTENANCE

Promat TL Board® does not require maintenance. Surface damage can be repaired with proprietary fillers.

STORAGE AND HANDLING

Store boards under cover on a flat, even base. If dunnage blocks are used, the boards must be fully supported across their width at no more than 600mm intervals with a minimum 100mm bearing. Boards should be carried on edge and should always be lifted and not dragged across each other. Avoid corner damage and scratching. Boards must not be stored on edge or leant upright.

QUALITY MANUFACTURE

The manufacturing and production facilities of Promat UK Limited and Kingspan Insulation Limited operate under rigorous Quality management systems that are independently audited and accredited to BS EN ISO 9001: 2008 and to BS EN ISO 14001 Environmental Standards.

HEALTH AND SAFETY

All the requirements of the Health and Safety at Work Act should be met as well as any general or specific regulations applying to the area where the boards are being installed. When moving boards, protective gloves and footwear are recommended. No special precautions are necessary when handling or working but, when using power saws or sanders, dust extraction equipment must be used to control dust levels. A Safety Data Sheet is available for Promat TL Board®.



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