

**Promat**

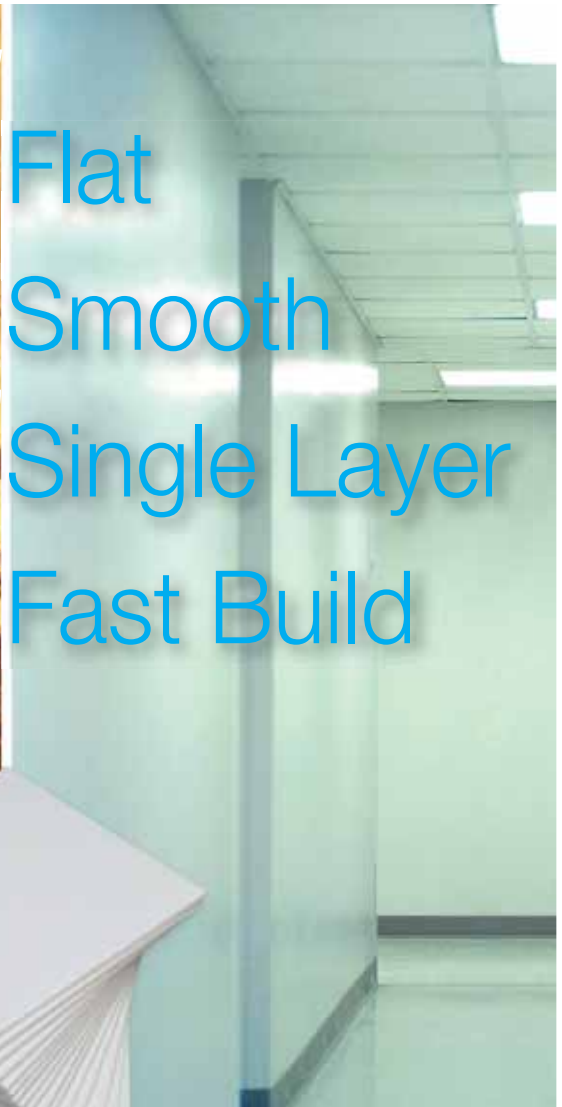


## **PROMATECT®-100**

PROMAXON® Technology - Partition and Ceiling Systems



**NEW  
SLIMLINE  
ACOUSTIC  
FIRE  
BARRIERS**



Flat  
Smooth  
Single Layer  
Fast Build



# An Introduction to PROMATECT®-100 Fire Rated Systems

## What are autoclaved calcium silicate boards?

Promat already manufacture a number of autoclaved calcium silicate boards, including PROMATECT®-H and PROMATECT®-L500. The autoclaving process exposes the mix of raw materials to elevated temperatures and pressures to create a product with the following properties:

- Non-combustibility
- Good impact and abrasion resistance
- Moisture tolerance
- Good dimensional stability
- Stability in fire conditions
- Good insulation properties when exposed to fire

The fire insulation of these products is mainly due to the free water held within the board.

PROMATECT®-H is a laminated cementitious board which is then autoclaved to form an autoclaved calcium silicate board.

PROMATECT®-L500 is a monolithic calcium silicate board formed by pressing together autoclaved calcium silicate spheres called PROMAXON®.

PROMATECT®-100, in fact, is a hybrid development of calcium silicate and gypsum technology using PROMAXON®, which provides the following performance enhancements:-

- Superior insulation properties when exposed to fire
- Excellent workability - easy to cut
- Smooth and flat surface
- High flexural strength providing the ability to form curved linings
- Cost efficient

## Improved fire insulation? - How?

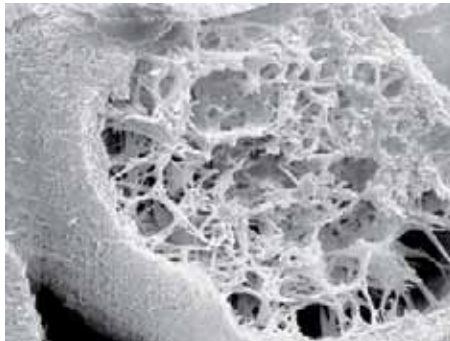
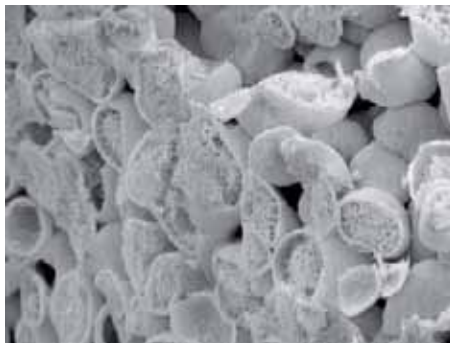
This new composition of hybrid board contains a key component which improves the fire insulation of the product due to an endothermic process - a process accompanied by the absorption of heat.

PROMATECT®-100 comprises autoclaved calcium silicate spheres, (PROMAXON®), bound in a mineral matrix. The PROMAXON® and the mineral matrix combine together to create the endothermic process when exposed to fire.

This gives a better fire insulation than either traditional calcium silicate boards or gypsum boards, as these new boards have both a small amount of free water in the PROMAXON®, and chemically bound water in the mineral matrix. By producing more water, and retaining it within the board for longer, the fire insulation is improved.

## So what exactly is PROMAXON® and how does it contribute to the boards performance?

PROMAXON® is a synthetic hydrated calcium silicate in spherical form.



The outer shell of close knit micropores forms the linking network for the mineral matrix of the PROMATECT®-100 board. This is a key factor in the boards cohesion and stability in fire conditions. A mineral filler fills the gaps between the spherical PROMAXON® particles.

In fire, the release of free water within the board, and then the chemically bound water from the mineral matrix, cause a cooling effect which reduces the temperature rise on the non-fire side of the board. But, before the water can escape from the board, the PROMAXON® spheres recapture part of the water that has been released. This creates a further endothermic process to gradually release these re-captured water molecules,

thus creating a further drop in the rate of temperature rise.

Promat have therefore created a new generation of boards which combines the advantages of traditionally manufactured calcium silicate and gypsum boards with additional benefits.

## Benefits

- Single layer constructions for steel stud partitions
- Speed of installation
- Proven cost effective lightweight drywall systems
- Lowest wall section 'footprint'
- Installation by carpenter trades
- High quality finishes
- PROMATECT®-100 readily available

# Physical Properties



PROMATECT®-100 is a MINERAL PROMAXON® board which has a smooth matt upper surface and is off-white in colour.

## Applications

- Steel stud partitions
- Solid partitions
- Ceilings
- Cavity barriers
- Fire doors

## General Technical Data

Neutral designation	MINERAL PROMAXON® board
Non-combustibility	Non-combustible to AS 1530:1
Surface spread of flame	Class 1
Building regulations classification	Class 0
Density	850 kg/m <sup>3</sup> (nominal dry)
Thermal conductivity at 20°C	0.27 W/m <sup>2</sup> k at ambient
Alkalinity pH	9 nominal
Diffusion resistance factor	5 nominal
Typical moisture content dried at 40°C	2%
Coefficient of thermal expansion	-16.0 (20-600°C) (x10 <sup>-6</sup> m per°C)

## Static Values

Flexural strength $F_{rupture}$	Longitudinal (dry) 4.5 N/mm <sup>2</sup>
Tensile strength $T_{rupture}$	Longitudinal (dry) 1.1 N/mm <sup>2</sup>
Compressive strength	8.0 N/mm <sup>2</sup> (dry)
Impact strength	4.5 KJ/m <sup>2</sup> (dry) (Charpy)
Impact strength	Impact resistance test carried out to satisfy the requirements of the BCA

## Standard Board Dimensions.

1200mm x 2500mm x 20mm\*

\*Other sizes are available on request. The boards can be supplied with square, or tapered edges. Subject to minimum quantity orders.

The properties in above tables are mean values given for information and guidance only. If certain properties are critical for a particular application, it is advisable to consult your nearest Promat Technical Department.

PROMATECT®-100 is manufactured under a quality management system certified in accordance with ISO 9001: 2000 Certification and in accordance with the environmental standards of ISO 14001.

## GENERAL NOTE:

**WHEN MACHINING THIS PRODUCT AIRBORNE DUST MAY BE RELEASED, WHICH MAY BE HAZARDOUS FOR HEALTH. DO NOT BREATHE THE DUST. AVOID CONTACT WITH SKIN AND EYES. USE DUST EXTRACTION. RESPECT REGULATORY OCCUPATIONAL EXPOSURE LIMITS FOR TOTAL INHALABLE AND RESPIRABLE DUST. REQUEST SAFETY DATA SHEET.**

## Cutting

Boards can be cut using a sheet saw with hardened steel teeth, a jig-saw, or a power saw with tungsten carbide tipped blades.

It can also be scribed and broken over a straight edge.

**Please refer to MATERIAL SAFETY DATA SHEETS prior to using this product.**

### PLANING, SANDING:

The edges of the board are easily planed, bevelled etc., using rasps or a surform. Conventional papers are adequate for sanding.

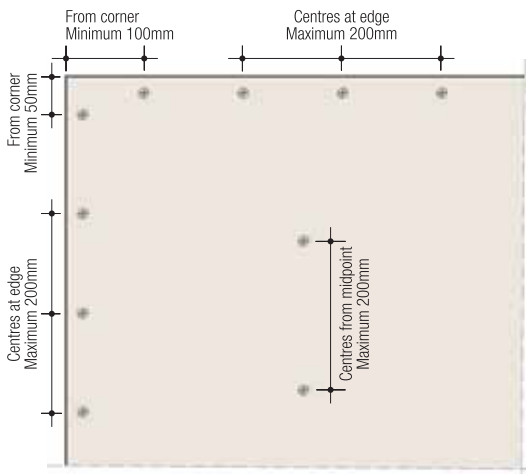
### DRILLING:

Generally, the boards do not require pre-drilling, but if they do need to be drilled this can be carried out with hand operated or power drills with high speed drill bits.

## Fastening & Fixing

### NAILING, STAPLING, SCREWING

The boards can be readily fixed using any of these methods. If the preferred fixing method varies from that shown in the relevant detail on the following pages please consult the Promat Technical Department. Generally, fixings should not be closer than 12mm from the edge of the board, and 50mm from the corners of each board.



The following is a fixing guide for screws used with the drawing above:

From edge	From corner	Centres at edge	Centres from mid point
Minimum 12mm	Minimum 50mm and 100mm	Minimum 200mm	Maximum 200mm

## Jointing

The board joints do not have to be filled for fire protection purposes providing any joint gap does not exceed 2-3mm. If the board is to be painted or plastered, the joints can be filled using standard gypsum filler. Taper edge boards can be covered with filler and tape in the normal manner.

## Painting

With water based paints, at least two coats are required. A slightly diluted first coat should be used. In areas that are liable to get knocked or scratched and for oil based paints, a suitable alkali resisting primer should be used. The coating manufacturers recommendations should be followed at all times.

## Papering, Tiling

Please consult our local office.

## Handling

Boards should be carried on their edge and not dropped on to the ground, trestles etc.

## Storage

All boards should be stored flat, clear of the ground and well protected from the weather and physical damage. The packing provided should not be regarded as sufficient protection for storage in the open.

## Health and Safety and Waste Management

Health and safety data sheets are available from our local office, as with any other materials, these 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 products 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.

## Limitations

PROMATECT®-100, if fixed in accordance with Promat recommendations, will not sag or fall away, providing the area is not permanently wet, humid or poorly ventilated. The product is not suitable for external use.

PROMATECT®-100 should not be exposed to temperatures exceeding 50°C for extended periods. However, the board can be used to back or enclose efficient modern boilers, flues and gas fires, and will not be noticeably affected by solar radiation from windows or heat from radiators.

## SYSTEM P100-23-2: Solid Partition - Frameless Wall System

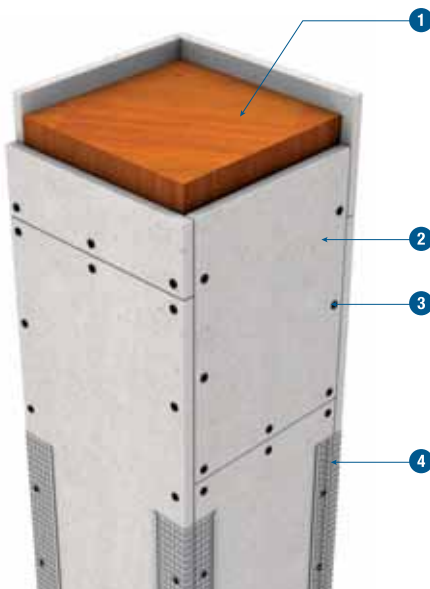


- 1 PROMATECT®-100 boards 20mm thick.
- 2 Steel angle frame 50mm x 50mm x 1mm fixed to substrate using anchor bolts at nominal 500mm centres.

PROMATECT®-100 boards fixed using 25mm screws (1st layer) 45mm screws (2nd layer) 55mm screws (3rd layer) into angle 2 at nominal 200mm centres. Stitch all board joints layer to layer using 35mm stitching screws at nominal 200mm centres.

<b>Fire Rating</b>	FRL in excess of	---/120/120	<b>Acoustic</b>	STC	39 dB	<b>Construction</b>	MAXIMUM HEIGHT	3000mm
	STANDARD	AS 1530.4		STANDARD	ISO 140: Part 3 ISO 717: Part 1		MAXIMUM WIDTH	Unlimited
	APPROVAL	WFRA 41097		REPORT	MARSHALL DAY 13th June 2006			

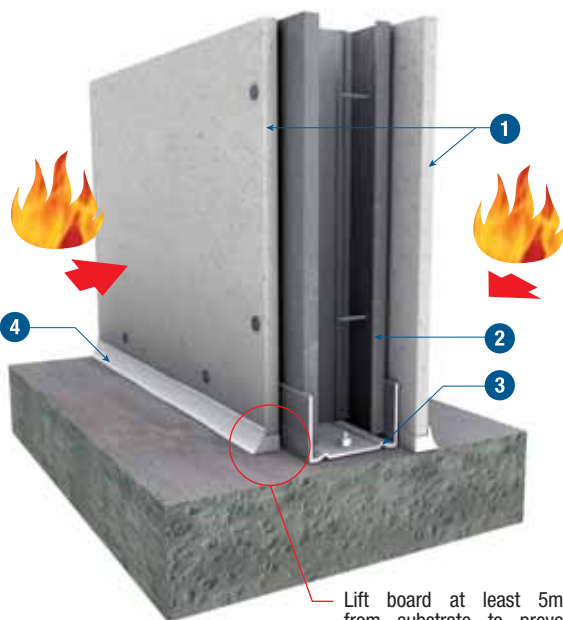
## Timber Beam Encasement System. Fire Rated - Single Fixing



- 1 Timber column.
- 2 PROMATECT®-100 boards. Thickness depends on section size of timber and FRL required. Please consult Promat Technical Services for details.
- 3 Fixing into timber could consist of nails or screws, the length of which is determined by the type of timber and the duration of the fire resistance, please consult Promat Technical Services.
- 4 Apply external angle bead to all corners and set.

# PROMATECT®-100 Partition & Wall Junction Details

## SYSTEM P100-22-2: Steel Stud Partition - Single Layer Board

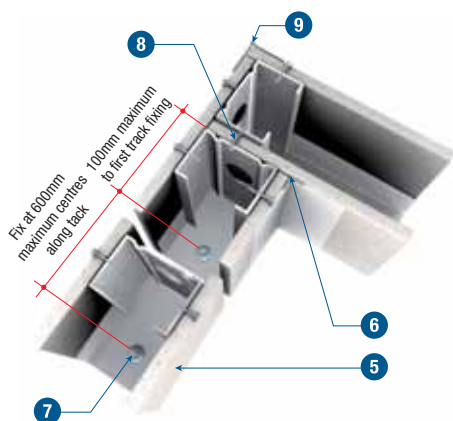


Lift board at least 5mm from substrate to prevent wicking effect from any water on the floor, fill gap with PROMASEAL® sealant.

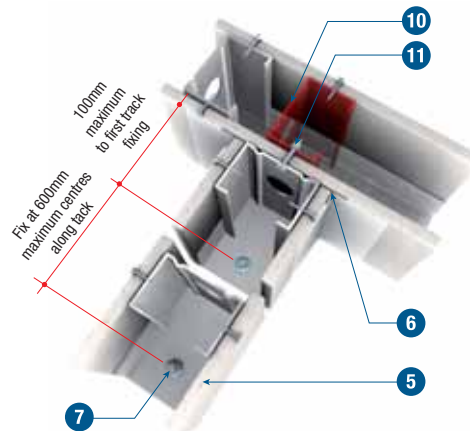
- 1 PROMATECT®-100 boards 20mm thick fixed to steel studs using 35mm drywall screws at 200mm centres
- 2 64mm x 35mm steel studs at nominal 600mm centres.
- 3 66mm x 35mm top and bottom track fixed to substrate using 50mm anchor bolts at 500mm centres.
- 4 PROMASEAL® AN sealant.
- 5 PROMATECT®-100 boards.
- 6 Set corner with paper tape and cement.
- 7 Metal track fixings.
- 8 Screw fix studs at 600mm maximum vertical centres.
- 9 Set corner with external angle bead and cement.
- 10 Additional Stud at wall intersection.
- 11 Fix studs at 600mm maximum vertical centres.

<b>Fire Rating</b>	FRL in excess of	---/120/120	<b>Acoustic</b>	STC	35 dB	<b>Construction</b>	10 metres	
	STANDARD	AS 1530.4		Rw	41 dB		<b>MAXIMUM HEIGHT</b>	Note: Change to dimensions of steel studs required to increase height above 4200mm. Please consult Promat Technical Services for details.
	APPROVAL	WFRA 41088		STANDARD	ISO 140: Part 3 ISO 717: Part 1		<b>MAXIMUM WIDTH</b>	Unlimited
			REPORT	MARSHALL DAY 13th June 2006				

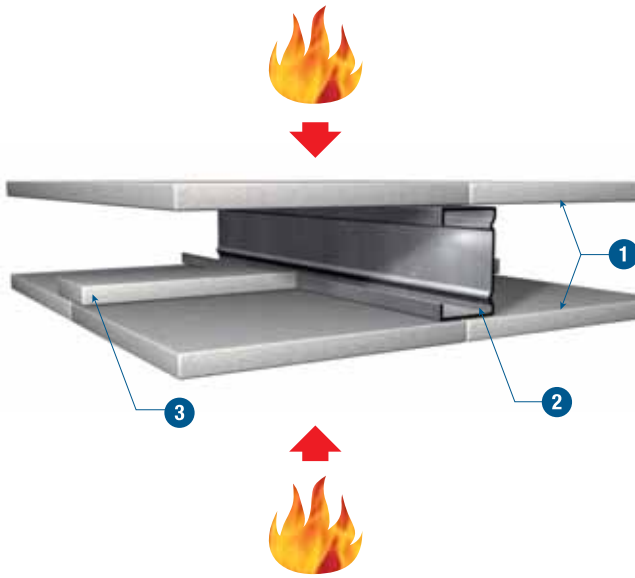
### Corner Detail



### Intersection Detail



## SYSTEM P100-14-5: Fire Rated From Two Sides



- 1 1 layer of PROMATECT®-100 boards, 20mm thick to either face.
- 2 Steel channel frame. Dimensions depend on span. Please consult Promat Technical Services for details.
- 3 Transverse joints in top and bottom board layers to be backed using 100mm wide x 20mm thick PROMATECT®-100 cover strips. Fix to main boards using 35mm stitching screws at nominal 200mm centres.
- 4 PROMATECT®-100 access panel.

Fire Rating	FRL	---/120/120	Construction	MAXIMUM WIDTH	Please consult Promat
	STANDARD	AS 1530.4			
	APPROVAL	CSIRO			

### Access Hatch



### Access Panels



For latest information of the Promat Asia Pacific organisation contact details, please refer to [www.promat-ap.com](http://www.promat-ap.com)

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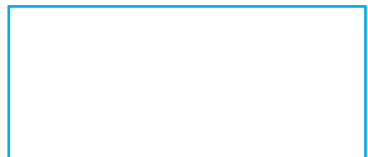
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## Your local Promat supplier



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