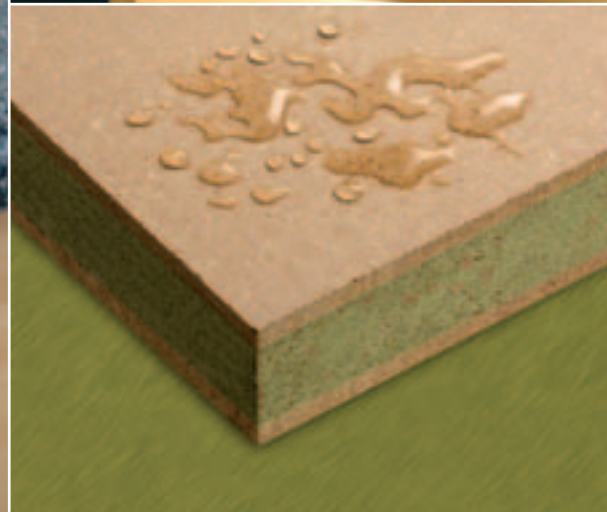
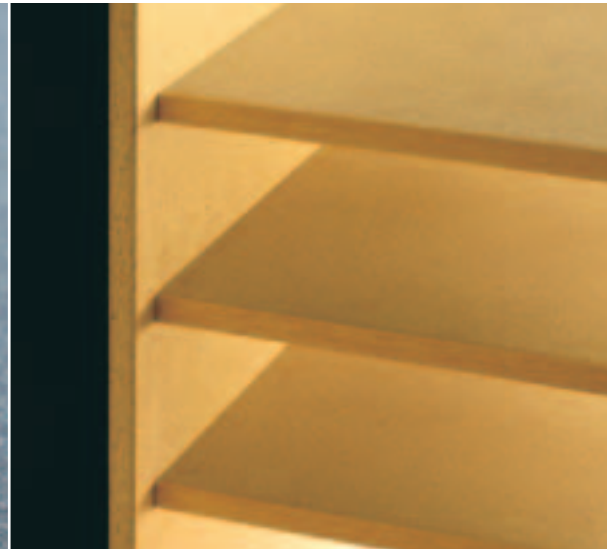


# Trade Essentials<sup>®</sup> Particleboard



**Trade Essentials<sup>®</sup>**  
PARTICLEBOARD



**Trade Essentials<sup>®</sup>**  
PARTICLEBOARD MR

another trade essential from  
**THE laminex** GROUP™

# Introduction

Trade Essentials® Particleboard is a versatile fine surface wood panel product manufactured entirely from renewable plantation pine timber. It is available in standard and moisture resistant grades designed specifically for a range of furniture, joinery and building applications.

## Product Description

Trade Essentials® Particleboard and Trade Essentials® Particleboard MR are medium density, resin bonded particleboard panels which are identified by their characteristic fine surface. Trade Essentials® Particleboard MR (Moisture Resistant) has been developed to provide additional resistance to the effects of moisture in areas subject to high surface humidity and is identified by a green dye in the core of the panel.



**Trade Essentials®**  
PARTICLEBOARD

### Uses:

#### Trade Essentials® Particleboard and Trade Essentials® Particleboard MR

- o Wall and ceiling linings
- o Partitions
- o Flooring overlays



**Trade Essentials®**  
PARTICLEBOARD MR

#### Trade Essentials® Particleboard MR only

- o Bathroom vanity units and laundry cupboards
  - o Cool store linings
  - o Partition substrates and wall linings in changing rooms, wash rooms and toilets
- For uses not listed above, please contact The Laminex Group™.



## Product Details

### Durability

When stored, handled, installed and maintained in accordance with this document, Trade Essentials® Particleboard and Trade Essentials® Particleboard MR will meet the provisions of NZBC B2.3.1(c) for five years (dependent on end use).

### Limitations

Trade Essentials® Particleboard and Trade Essentials® Particleboard MR:

- o Is intended for dry interior use only and must not be used as a substrate for external weathering materials (floors, walls or ceilings - such as Nuralite, Butynol and other roofing membranes).
- o Must not be used for a flush plaster stopped jointing system, to be subsequently wallpapered or painted (exceptions to this only apply to proprietary glued drywall partition systems).
- o Ceiling lining installations exposed on the upper face to elevated temperatures and low humidity conditions in roof spaces, must have insulation placed directly on the upper surface and have adequate provision for air change within the roof space.
- o All panels laid over exposed rafters/purlins, must be paint sealed on all edges and both faces after conditioning and prior to installation to reduce moisture and humidity uptake during construction and building occupation.
- o Must be paint or clear polyurethane finished prior to building occupancy. Refer to Clear Finishing section for more information.
- o The application of water based spray-on textured coatings must not be used.

Trade Essentials® Particleboard and Trade Essentials® Particleboard MR medium density particleboard **must not** be used for:

- o Exterior use
- o Areas subjected to repeated water spillage or constant dampness
- o Marine uses
- o Shower linings
- o Saunas
- o Window reveals
- o Exterior door panels

Trade Essentials® Particleboard MR panels are designed to give improved durability and stability in areas of high surface humidity but are **not waterproof** and **must not** be allowed to come in to direct or prolonged contact with water. The panels must be finished with a

protective coating system to prevent moisture penetration.

### Product Care and Handling

Adequate pre-conditioning prior to installation and precise following of installation instructions are essential for satisfactory results, especially during wet seasons and high humidity.

- o Due to the uptake of airborne moisture, permanent board distortion may occur if Trade Essentials® Particleboard is placed in close proximity to framework with moisture content exceeding 18%.
- o Attention to storage, regular stock rotation, preconditioning at the installation point and provision of adequate joint clearances will help accommodate any board movement.

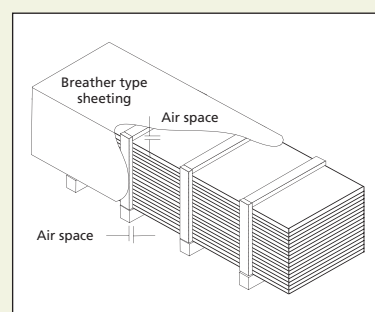
### Storage

Correct storage procedure will eliminate sagging and permanent distortion of sheets.

- o Store away from heat and direct sunlight.
- o The panels must be flat stacked on evenly placed level bearers clear of dry ground, or on a dry concrete floor.
- o Bearers must be of uniform thickness and must extend across the full width of the pack. (Refer Figure 1)
- o Trade Essentials® Particleboard panels must be protected from the weather. A breather type cover must be supported clear of the top and sides of the panels using battens to allow air to circulate freely. (Refer Figure 1)

### Stock Rotation

The uptake of atmospheric moisture in to board edges which causes edge peaking will be minimised by regular stock turn. Cut metal strapping as soon as practicable to avoid edge indentations. Avoid storing close to doorways adjacent to external atmosphere.



**Figure 1**

Stack panels using equally spaced bearers and, if necessary, a breather-type cover for weather protection. (Note: provision for air circulation)

## Composition

Trade Essentials® Particleboard and Trade Essentials® Particleboard MR are composed of engineered wood flakes and residues bonded with adhesive under heat and pressure.

### Bonding Adhesives

Trade Essentials® Particleboard: Urea formaldehyde resin.

Trade Essentials® Particleboard MR: Melamine urea formaldehyde resin.

The resulting particleboard sheets are sanded and ready for use.

### Physical Properties

Properties - Trade Essentials® Particleboard is manufactured to meet or exceed the requirements of AS/NZS 1859:2004.	
Panel thickness range (mm)	Standard requirements of AS/NZS 1859:2004, tested to AS/NZS 4266:2004
Density	(kg/m <sup>3</sup> ) (*standard requirements are not specified in test, figure represents factory target)
>8 to 12	660*
>12 to 22	630*
>22 to 33	600*
>33	600*
Density of MR product is slightly higher due to higher resin loading.	
Modulus of rupture	(MPa)
>8 to 12	13
>12 to 22	12
>22 to 33	10
>33	9
Internal bond	(MPa)
>8 to 12	0.35
>12 to 22	0.30
>22 to 33	0.25
>33	0.20
24 hour thickness swell	(%)
>8 to 12	25 Std    18 MR
>12 to 22	20 Std    15 MR
>22 to 33	18 Std    12 MR
>33	18 Std    12 MR
Additional durability requirements for MR grade	
Option 1 Bending strength after immersion in water at 70°C	(MPa)
>8 to 12	5.0
>12 to 22	4.5
>22 to 33	4.0
>33	3.5
Option 2 Cyclic V313 test Internal bond retention	(MPa)
>8 to 12	0.25
>12 to 22	0.22
>22 to 33	0.18
>33	0.15
Option 2 Cyclic V313 test Residual thickness swell	(%)
>8 to 12	17
>12 to 22	13
>22 to 33	11
>33	9

Table 1

### Moisture

Trade Essentials® Particleboard must not be exposed to water or high humidity situations such as shower enclosures, steam rooms and saunas. (Refer Limitations)

As with most wood based products, Trade Essentials® Particleboard is subject to minor dimensional variations due to changes in relative humidity resulting in expansion and shrinkage.

### Identification

Board size, classification and production batch number are denoted on the pack sides.

### Panel m<sup>2</sup> Weight

Thickness (mm)	Weight per m <sup>2</sup> (kg)
9	5.9
12	7.9
18	11.3
20	13.8
30	18
35	21

Note: The m<sup>2</sup> weight of Trade Essentials® Particleboard is based on factory targets.

Table 2

### Panel Size

Thickness (mm)	Length (mm)	Width (mm)
9	3600	1800
	2400	1800
	2400	1200
	3660	1830
12	3600	1800
	2440	1220
	2400	1200
	3660	1830
18	3600	1800
	2440	1830
	2400	1200
	2400	1200
20	3660	1830
	3600	1800
	2440	1830
	2400	1200
30	2400	600
	1800	600
	1200	900
	1200	600
35	2400	600
	1800	600
	1200	600
	3660	1820
35	1800	1200
	1820	1200

Note: Please check panel size availability with your local distributor.

Table 3

### Tolerances (ex factory)

Dimension	Target
Length	+/- 2mm per metre with a 5mm maximum
Width	+/- 2mm per metre with a 5mm maximum
Thickness	+/- 0.2mm
Squareness	≤ 2mm per metre difference in the diagonals

Table 4

## Heat

Precautions must be taken to ensure that Trade Essentials® Particleboard is kept well clear of nearby heat sources, such as free standing fireplaces, space heaters, ovens, cooking elements, etc.

The structural life of Trade Essentials® Particleboard may be impaired if surface temperatures exceed 50°C. Manufacturers of heat appliances

must be consulted to ascertain the clearances or protection required to ensure 50°C is not exceeded.

## Formaldehyde

Trade Essentials® Particleboard complies with the E1 category of AS/NZS 1859.1:2004. During construction, and after close-in, emission levels can be controlled by room ventilation and surface sealing.

# Design Considerations

Attention to site storage, pre-conditioning at the point of installation and provision of specified edge clearances will reduce the effects of moisture uptake after installation and minimise panel movement.

Panel conditioning of raw board prior to installation is of utmost importance, especially during periods of high rainfall and accompanying high humidity. (Refer Figure 2)

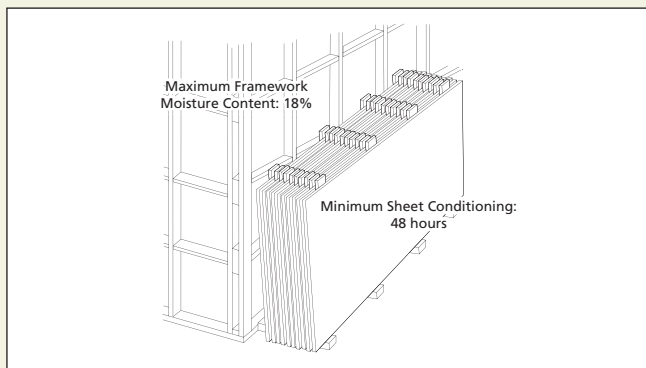


Figure 2

## Fire Properties

### Early Fire Hazard Properties\*

APL Report No. 9360 for 9mm Trade Essentials® Particleboard		
Ignitability	Range 0-20	14
Spread of Flame	Range 0-10	6
Heat Evolved	Range 0-10	5
Smoke Developed	Range 0-10	4

Table 5

\*These values apply to standard unfinished Trade Essentials® Particleboard, and will improve with the application of a fire retardant coating.

## Paint Coatings

Proprietary flame retardant coating systems are available. Refer to Table 6, or your local paint supplier for further information.

## Manufacturer Product

Resene	Fireguard
Firepro Centabuild	Firepro C646, Flamecoat Interior Acrylic Paint
Benjamin Moore	Flame Control

Table 6

## Wall and Ceiling Lining

Trade Essentials® Particleboard must not be placed in close proximity to framework with moisture contents in excess of 18%. (Refer Figure 2)

## Wall Bracing Values

Wall bracing tests have only been conducted for 12mm panels, therefore only 12mm panels are recommended for wall bracing. (Refer Table 7)

## Wall Bracing, BRANZ Test Report ST 386

Length = 1200mm; Sheet Orientation = Vertical Extra End Fixing = None			
Bracing Units (BU)	Wind (BU)	Earthquake (BU)	Rated at (mm)
per panel	123	111	30
per metre	102	92	30

Table 7

## Framework Setout

Allow for the stud, purlin, rafter, beams etc, to accommodate a 2mm expansion gap at Trade Essentials® Particleboard panel joints especially where large areas or long walls are to be covered. (Refer Figure 3a) For negative detailing, allow an 8mm gap on a pre-painted stud. (Refer Figure 3b)

### NOTE:

Ensure sheets are pre-conditioned prior to being sealed.

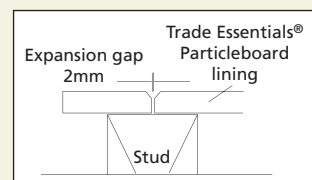


Figure 3a

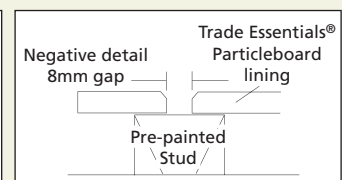


Figure 3b

## Framework Support Centres

Panel Thickness (mm)	Wall Lining		Ceiling Lining	
	Stud Centres (mm)	Dwang Centres (mm)	Joist/Truss Centres (mm)	Dwang Centres (mm)
12	400	1200	450	1200
	450	1200	600	1200
	600	800	900	600
18	400		1200	600
	450		900	1200
	600	1200	1200	900

Table 8

## Thermal Resistance of Particleboard

Description	Density (kg/m³)	Thermal Conductivity (w/m °C)	Thickness (mm)	Thermal Resistance (m² °C/w)
Medium Density Particleboard	600	0.11	9	0.08
			12	0.11
			18	0.16

Table 9

### Exposed Beam Ceilings

- o Pre-condition all sheets, and then prime all surfaces and edges prior to fixing ceiling sheets.
- o Weather protection is essential to avoid exposure to inclement conditions during the construction period.
- o Where practicable, install exposed interior ceiling lining progressively with the exterior roof covering. The preferred method of installation is to fix after the roof is in place.
- o Skillion roofs require special care. Maintain an air gap between the top of the insulation and underside of the roofing underlay, from the soffit to the ridge. This gap allows air circulation to regulate humidity and temperature.

### Flooring Overlays

When upgrading existing wooden floors, Trade Essentials® Particleboard may be used as a substrate for other floor finishes.

Preparation guidelines are:

- o The existing floor should be sanded level.
- o Using a staggered sheet layout pattern, preconditioned Trade Essentials® Particleboard boards must be fixed combining a nail and full spread adhesive application.
- o For full instructions refer to the Flooring Overlays section of the Pynefloor™ Technical Manual.

## Working Characteristics

Trade Essentials® Particleboard can be easily machined, grooved and routed in any direction. To avoid break-outs use a fine toothed hand saw or circular saw adjusted to protrude just through the board surface and apply only nominal pressure when using power drills. Tungsten-tipped machine tools are recommended for volume production.

### Fixing

- o The installation of linings must not begin until the building is closed in and waterproof.
- o When using 3600 x 1800mm sheets, allow a 3mm edge clearance.
- o A 3mm sheet edge clearance is advisable for all sheet sizes during wet winter months or in extremely humid conditions.
- o Board surfaces should be primed or clear sealed immediately after fixing, to minimise the effects of atmospheric moisture, or direct sunlight and to resist marking during construction activities.

### NOTE:

For best results ensure hand and machine tools are sharp, and always use approved eye protection when machining particleboard.

### Nailing Schedule

Sheet Thickness (mm)	Nail Size* (mm)	Fixing Centres (mm)		From Sheet Edge (mm)
		Edges	Intermediate	
12	45 x 2.5	150	200	10
18	55 x 2.8	150	200	10

Table 10

\* All fastenings must be corrosive resistant.

## Finishing

All surfaces will require sanding prior to finishing.

### Stopping

Fill fastening holes with a solvent-based wood dough or non-shrinking plaster based stopping, tinting as required for clear coated applications.

### Clear Finishing

If clear finishing Trade Essentials® Particleboard, be aware that there may be visual imperfections in the surface of the particleboard which may be visible after clear finishing. The finished result may or may not meet customer expectations. See Figure 4 for indicative image. Refer to website for further images. Polyurethane coatings should provide protection in normal residential applications for up to five years if properly applied and maintained. This does not apply to areas such as laundries, kitchens, bathrooms, shower, changing rooms and toilets. The defined wet areas must be covered by an impervious wet area membrane or sheet vinyl with welded joints.

### Painting

Acrylic primer coatings will provide a more textured surface than solvent based paint systems. Trade Essentials® Particleboard is a good substrate for most paint applications.

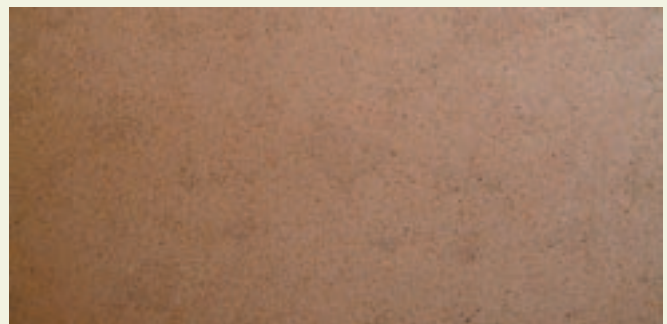


Figure 4 Indicative visual imperfections after clear finishing.

# Trade Essentials® Particleboard

## Liability

The Laminex Group™ will not be liable to any person if the instructions as to storage, use and installation of Trade Essentials® Particleboard as outlined in this brochure are not complied with.

Any proprietary products referred to in this brochure must be used in accordance with the relevant manufacturer's instructions. The Laminex Group™ accepts no liability for these proprietary products.

Nothing contained in this paragraph or elsewhere in this brochure affects any rights a person may have under the Consumer Guarantees Act 1993.

This brochure supersedes all previous issues.

All Acts, Codes and Standards referred to in this brochure are the current editions at the date of brochure publication.



## Health and Safety

### Health and safety precautions must be taken when working with wood products.

- o Exposure to wood dust and/or to formaldehyde may cause irritation to the eyes, respiratory system and skin, and may cause sensitisation resulting in asthma, and by skin contact resulting in dermatitis.
- o Wood dust is classified as a known carcinogen. Repeated inhalation of wood dust over many years may cause nasal cancer.
- o Formaldehyde is classified as a known carcinogen.
- o Storage areas containing large quantities of Trade Essentials® Particleboard must be adequately ventilated.
- o Work areas must be well ventilated and kept clean. Sawing, sanding and machining equipment must be fitted with dust extractors to ensure that dust levels are kept within standards laid down by Worksafe Australia, Occupational Health and Safety New Zealand, or the specific country of use. If not, a dust mask conforming with AS/NZS 1715 and AS/NZS 1716 and eye protection conforming with AS/NZS 1337 must be worn.
- o Offcuts, shavings and dust must be disposed of in a manner which avoids the generation of dust and in accordance with the requirements of local waste authorities.
- o In end use applications all product surfaces exposed to occupied space must be sealed.

For further information and safety data information, please phone The Laminex Group™ Customer Services Department.



## Technical Support

As not all product use options can be described in this brochure, additional end use and specifying information is available as a complimentary service. The information contained in this brochure must not be reproduced or published in whole or in part without the prior consent of The Laminex Group™. The Laminex Group™ reserves the right to revise without notice any information contained in this brochure. Please contact The Laminex Group™ Customer Services Department to check the currency of information contained in this brochure, or visit the website.

## Contact Details:

For more product information or order enquires please phone

**The Laminex Group** on **0800 303 606** to speak with a representative.

**[www.thelaminexgroup.co.nz](http://www.thelaminexgroup.co.nz)**