

Whiteboard

The tradesman's essential guide



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

Whiteboard

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Whiteboard is the most cost effective material available today for making cabinets, wardrobes, draws or shelving with a clean hardwearing surface.

Trade Essentials® Whiteboard is a high quality particleboard with a white melamine surface bonded to both sides. The melamine surface is non-porous and hardwearing making it ideal for internal cabinetry.

And it makes building cabinetry fast and easy. As the board is pre-decorated, all you do is cut, drill and edge it.

Whiteboard has your panel needs covered

Trade Essentials® Whiteboard is available in a wide range of sheet sizes and options. From pre edged shelving for wardrobes to high moisture resistant board for vanities and laundry cabinets.

Trade Essentials® Whiteboard is available in either smooth Velvet or Décor textured surface finishes. So whatever your panel needs are, Trade Essentials® Whiteboard has them covered.

Renewable, sustainable resource

The reconstituted wood fibres used to make Trade Essentials® Whiteboard are obtained from Australian pine plantations – a sustainable renewable resource. In fact only renewable plantation timber is used in the manufacture of Whiteboard. Trade Essentials® Whiteboard allows you to achieve fast, cost effective cabinetry results without destroying our precious wilderness or the rainforests of other countries.

Applications

There are different Trade Essentials® Whiteboard panel products available to suit various applications and these are detailed separately on the following pages.

Whiteboard Standard (STD)

Whiteboard STD is a high quality particleboard substrate laminated on both sides with a hardwearing white melamine surface. The particleboard substrate is made up of wood particles bonded together with resins. It has a tight compact core that allows clean machining.

Applications

Whiteboard STD is designed for interior use for the following applications:

Built in cupboards, wardrobes and furniture, shelving, wall linings and all detailed joinery where the product will not be subjected to high humidity.

Surface finishes

Décor Texture and Velvet finishes.

Decorative surface properties

When tested in the approved manner Whiteboard STD complies with the relevant sections of AS/NZS 1859.3: 1996 for surface properties as follows:

Resistance to wear

Typical results 600 cycles.

Resistance to steam

No noticeable effects on the surface after one hour exposure.

Whiteboard STD shelving

Whiteboard STD is also available as shelving. It is pre-cut and edged on one long side and is available in various sheet widths to suit most shelving applications.

It allows quick, convenient cutting of shelves for cupboards and built in furniture.

Physical Properties (# Typical physical properties when tested to AS/NZS 1859.1: 2001.Int)						
Property	Unit	Board Thickness				
		9mm	12mm	16mm	18mm	25mm
Board Density	Kg/m ³	670	670	640	635	620
Internal Bond	KPa	550	550	460	460	440
Modulus of Rupture	MPa	18	18	18	16	16
Modulus of Elasticity	MPa	2600	2600	2500	2500	2200
*Screw Holding - Face	N	N/A	N/A	700	700	700
*Screw Holding - Edge	N	N/A	N/A	800	800	800
Surface Soundness	MPa	0.9	0.9	1.1	1.1	1.1
Moisture Content	%	5-8	5-8	5-8	5-8	5-8
Thickness Swell 24 hr	%	18	15	15	15	15

* Values reflect new testing methods for screw holding properties in AS/NZS 4266.13: 2001. (Int)

In most instances the performance characteristics of the particleboard exceeds the minimum requirement of AS/NZS 1859.1: 2001. (Int)

However for minimum property values refer to AS/NZS 1859.1: 2001. (Int)



Fire Hazard Indices (Typical achieved when tested to AS/NZS 1530.3: 1989)

Indices	Result	Range
Ignitability	14	0 - 20
Spread of Flame	8	0 - 10
Heat Evolved	7	0 - 10
Smoke Developed	4	0 - 10

General Board Weight

Unit	(Kg/m ²)
9mm	6.0
12mm	8.0
16mm	10.2
18mm	11.4
25mm	15.5

Whiteboard HMR

Whiteboard HMR is a highly moisture resistant particleboard laminated on both sides with a hard-wearing white melamine surface.

The high moisture resistant properties of Whiteboard HMR are due to the bonding of the wood particles with a specially formulated moisture resistant resin system. Whiteboard HMR can be easily identified by the green dye incorporated in the core of the board.

Applications

Whiteboard HMR is designed for interior use for the following applications:

Kitchen cupboards, bathroom vanities, laundry cupboards, shelving, built in cupboards, wardrobes and furniture, wall linings and all detailed joinery where a moisture resistant decorative board is required.

Moisture resistance

Whiteboard HMR complies with the Wet Cyclic Test for moisture resistance properties as specified in AS/NZS 1859.1: 2001(Int). Refer to the Physical Properties table for details.

Surface finishes

Décor Texture and Velvet finishes

Decorative surface properties

When tested in approved manner complies with the relevant sections of AS/NZS 1859.3: 1996 for surface properties as follows:

Resistance to wear

Typical results 600 cycles.

Resistance to steam

No noticeable effects after one hour exposure.

Whiteboard HMR shelving

Whiteboard HMR is also available as shelving. It is pre-cut and edged on one long side and is available in various sheet widths to suit most shelving applications. It allows quick, convenient cutting of shelves for cupboards and built in furniture.

Physical Properties (# Typical physical properties when tested to AS/NZS 1859.1: 2001.Int)						
Property		Board Thickness				
	Unit	9mm	12mm	16mm-18mm	25mm	33mm
Board Density	Kg/m ³	700	670	640	620	640
Internal Bond	KPa	700	670	580	550	550
Modulus of Rupture	MPa	19	19	19	18	18
Modulus of Elasticity	MPa	2700	2800	2600	2700	2800
*Screw Holding - Face	N	N/A	N/A	700	700	800
*Screw Holding - Edge	N	N/A	N/A	1000	900	900
Surface Soundness	MPa	1.0	1.2	1.4	1.2	1.5
Moisture Content	%	5-8	5-8	5-8	5-8	5-8
Thickness Swell 24hrs	%	10	9	8	7	6
Moisture Resistance	Test	V313	V313	V313	V313	V313

* Values reflect new testing methods for screw holding properties in AS/NZS 4266.13: 2001 (Int).

In most instances the performance characteristics of the particleboard exceeds the minimum requirement of AS/NZS 1859.1: 2001 (Int). However for minimum property values refer to AS/NZS 1859.1: 2001 (Int).

Fire Hazard Indices (Typical achieved when tested to AS/NZS 1530.3: 1989)		
Indices	Result	Range
Ignitability	14	0 - 20
Spread of Flame	8	0 - 10
Heat Evolved	7	0 - 10
Smoke Developed	3	0 - 10

General Board Weight	
Unit	(Kg/m ²)
9mm	6.3
12mm	8.0
16mm	10.2
18mm	11.5
25mm	15.5
33mm	21.1

Aquaban®

Aquaban® is a single sided white decorated 33mm HMR particleboard, purpose designed with post forming bench tops in mind.

The white melamine underside of Aquaban® Particleboard will resist moisture, providing clean, hygienic and durable quality bench tops.

The superior performance of Aquaban® Particleboard compared to standard particleboard is due to bonding of the wood particles with a specially formulated moisture resistant resin system.

Aquaban® Particleboard can be easily identified by the green dye incorporated in the core of the board.

Applications

Aquaban® Particleboard is suitable for use as a substrate in areas of high humidity such as kitchens, laboratories, commercial bench tops or any application where a high quality moisture resistant bench top is required.

Additional performance specifications

Bowing when sheet is lying flat:

Length < 2.0mm per lineal metre.

Width < 2.0mm per lineal metre.

Moisture resistance

Aquaban® Particleboard complies with the Wet Cyclic Test for moisture resistance properties as specified in AS/NZS 1859.1: 2001(Int). Refer to the Physical Properties table for details.

Surface wear value

Typical results greater than 350 cycles.

Physical Properties

(# Typical physical properties when tested to AS/NZS 1859.1: 2001(Int))

Property	Unit	Board Thickness
		33mm
Board Density	Kg/m ³	640
Internal Bond	KPa	550
Modulus of Rupture	MPa	18
Modulus of Elasticity	MPa	2800
*Screw Holding - Face	N	800
*Screw Holding - Edge	N	900
Surface Soundness	MPa	1.5
Moisture Content	%	5-8
Thickness Swell 24hrs	%	6
Moisture Resistance	Test	V313
General Board Weight	Kg/m ²	21.1

* Values reflect new testing methods for screw holding properties in AS/NZS 4266.13: 2001 (Int).

In most instances the performance characteristics of the particleboard exceeds the minimum requirement of AS/NZS 1859.1: 2001 (Int). However for minimum property values refer to AS/NZS 1859.1: 2001 (Int).



Fire Hazard Indices

(Typical achieved when tested to AS/NZS 1530.3: 1989)

Indices	Result	Range
Ignitability	14	0 - 20
Spread of Flame	8	0 - 10
Heat Evolved	7	0 - 10
Smoke Developed	3	0 - 10

Thin White Edgings

There are two types of Trade Essentials® continuous Thin White Edgings:

1. Melamine Edging is constructed from paper and a combination of melamine thermosetting resins to give a thin durable surface that ensures high wear and stain resistance. White Melamine Edging is supplied in continuous rolls pre-glued with a hot melt or unglued for bonding with hot melts.
2. PVC Edging is a tough, flexible polymer edging produced in continuous lengths. Because of the nature of the material, PVC Edging will resist chipping and splintering. White PVC Edging is supplied in continuous rolls unglued for bonding with hot melts.

Applications

Trade Essentials® Thin White Edgings are recommended for the edge treatment of Whiteboard, and decorated white MDF board products. Thin White Edgings are used for edging shelving, cabinets and built in cupboard panels.

For decorative, high wear applications such as doors, end panels, bench tops and display panels, thicker melamine or rigid ABS edgings are recommended.

A broad range of decorative edgings are available from the Laminex®, Formica® and Formex® brands.

Finishes

Trade Essentials® Thin White Edgings are available in two finishes, Stipple and Velvet.

Sizes

Trade Essentials® Thin White Edgings are available in two widths; 19mm wide Edging is suitable for 16mm thick panels only, whilst 21mm wide Edging is suitable for both 16mm and 18 mm thick panels.



Bonding

General site works

1. Avoid cold air draughts in the area where the edge banding operation is performed.
2. Store edging in a dry place, maintaining temperature at or above 18°C.
3. Use adequate pressure on pressure roller.
4. Always use heating fence where fitted.
5. Periodically check the accuracy of temperature gauges; these can be out by as much as 50°C.
6. Do not use Thin White Melamine Edging if the material has been allowed to become damp or wet, or if its temperature is less than 18°C. Do not use PVC Edging if it has been allowed to become damp or extremely cold.

Applying pre-glued Melamine Edging

To achieve adequate bonding, a glue film temperature at the point of contact of 140°C must be achieved. Commercial edgebanders with a feed speed of 6- 8m/min. and a hot air temperature of 375°C, will successfully bond Trade Essentials® pre-glued Thin White Melamine Edging. For an 'iron-on' operation temperatures greater than 250°C are recommended to achieve a glue film temperature of 140°C. This is achieved normally after 10-15 seconds (under pressure) and an 'iron-on' speed of 60-70 seconds per metre length.

Applying un-glued Melamine and PVC Edging

To achieve an adequate performance, the following factors must be taken into consideration:

1. Glue:

It is recommended that a high melting point hot melt adhesive (Bond-Rite/Jowat 4490 or similar) be used with a loading of 3.5-4.0 gr/lineal metre (21mm width).

2. Substrate:

In order to minimise the 'chilling-effect' when the hot melt is pressed against a cold substrate, the substrate edge should be pre-heated by means of a heating fence or electrical blower.

3. Temperature:

The following information is listed as a general guide. The data sheet for the particular hot melt used should be used as the primary reference.

A glue tank temperature of 195-210°C and applicator roll temperature of 205-215°C are essential for successful bonding. Bond failure is likely to occur if glue temperature at the applicator roll is below 195°C.

Maintain constant glue level in glue tank by adding glue often. Do not let tank level run down and then add large quantity of glue, as this will dramatically reduce glue temperature in tank even though gauge may still indicate required temperature.

4. Machine speed:

Speeds of a minimum of 20m/min. are recommended. Lower speeds are acceptable provided the 'open time' (time it takes for the glue to get from the applicator roller to the pressure roller) is less than one second.

Cleaning

- Removal of hot melt adhesive residues from the surface of Melamine and PVC Edging can be accomplished by rubbing with a soft cloth containing:

Trade Essentials® ABS Edge Strip Cleaner

- Care must be exercised with rubbing as severe rubbing can result in gloss change to the surface.

- Solvents are hazardous. Please read the Material Safety Data Sheet for the solvent before it is used.



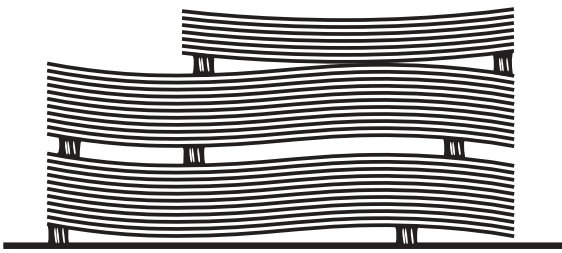
Storage and handling

Storage and handling of Whiteboard panel products

The following recommendations should be applied to maintain Whiteboard panels in good order and condition. The storage area should be protected from the sun, rain and wind. Open sided sheds would not be regarded as dry stores.

All packs should be evenly supported at each end at intervals of not more than 750mm where the packs are multiple stacked, and no further than 150mm from the edge of boards. All supports should be vertically aligned.

Keep work area clean. Avoid contact with abrasive surfaces or grit.



Incorrect storage method



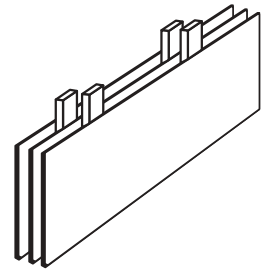
Correct storage method

Pre-conditioning

The Laminex Group usually dispatches Whiteboard with a moisture content of between 5% to 8%. This can alter, however, during the time the boards are in transit or storage before use. Apart from this, the relative humidity of the environment where the boards are to be fixed may call for quite a different moisture content, and some adjustment may be needed.

Pre-conditioning panels is recommended to ensure that they attain an equilibrium moisture content (EMC) before fixing, so as to reduce the likelihood of bowing after they have been fixed. Any subsequent movement will thus be a drying shrinkage which, given adequate support and fixings, keeps the boards flat and taut.

Some boards may achieve an EMC simply by being stored for some time in the location where they are to be used without any positive conditioning.



Conditioning in air

Conditioning in air is adequate for most locations. It involves exposing the boards in the room where they are to be fixed for long enough to allow them to reach a moisture content which is in balance with their surroundings and adjust their dimensions accordingly.

To encourage free air circulation over all board surfaces, the boards should be arranged loosely as shown above, either vertically or horizontally. They should then be allowed to stand like this for a minimum of 48 hours.

Fabrication

Machining

Whiteboard panels can be cut, drilled and machined using standard wood working equipment fitted with tungsten carbide tipped cutting edges.

It is recommended that the material be cut on a bench type or beam saw, using a 300mm tungsten tipped blade with 72 to 96 teeth. For pre-laminated board such as Whiteboard a triple chip saw blade should protrude 20-30mm above the surface of the board.

Note: All decorated panels should be cut only on saws that have a scribing blade on the underside. Work piece must be firmly fixed. Observe all professional machining safety practices.

Adhesives and bonding

When gluing dowels or biscuits to the core of Whiteboard panels, a high solids PVA with good gap filling properties is suitable. **Trade Essentials® General Purpose PVA** is recommended for this application.



However, when gluing timber and other wood panels to the Whiteboard surface, **Trade Essentials® Melamine Adhesive** is recommended. It provides a superior bond to the non-porous surface of the melamine coated board and dries to a clear glue line.



Dowel joints

Dowel joints are one of the most common adhesive based furniture assembly joints. Dowelling is a simple, inexpensive, strong and reliable way of making a butt or mitre joint.

Machining dowel holes

Dowel holes should be cleanly machined with all loose particles blown from the holes. If a blunt drill is used the drill will overheat and polish the inside of the hole and reduce the ability of the adhesive to bond.

Dowel diameter

Dowels used should be no thicker than 50% of the thickness of the panel used.

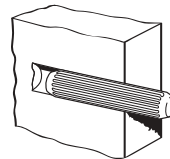
Hole diameter

The fit of the dowel in the hole is critical to withdrawal strength. Holes drilled in the edges should be just a firm push-in fit to prevent the edge of the board from splitting as the dowels expand due to moisture uptake from the adhesive. Dowels inserted into the face of a panel should be a firm knock-in fit.

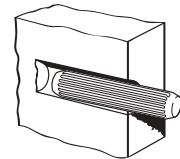
Dowel and Dowel Hole Diameters		
Board Thickness (mm)	Dowel Diameter (mm)	Dowel Hole Diameter (mm)
12 to 15	6	6.2
16 to 24	6 to 8	6.2 to 8.2
25 or more	10	10.2

Gluing

When using dowel joints only the dowels are glued in place. The practice of using glue between the edge and the face may actually weaken the joint.



Interference fit (not recommended)



Clearance 0.1mm all round (preferred)

Depth

Inserting the dowel to the proper depth is important. They should be inserted at least 25mm into the edge of the Whiteboard panel and as deep as practical into the face surface, but no more than two thirds of the thickness. In general, the longer the dowel the stronger the joint.

Dowel selection

Dowels with multiple longitudinal or spiral groove patterns are recommended to ensure uniform adhesive spread within the joint. The dowels should be cleanly machined and free from any loose or torn fibres. The moisture content of dowels at the time of assembly should be in the range 10% +/-2%.



Smooth dowel (not recommended)



Grooved dowels (preferred)

Mechanical fixing

Selecting screw type

Quality parallel threaded screws are recommended for Whiteboard.

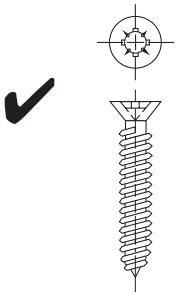
Selecting screw length

The length of the screw directly affects the holding power of the screws, for example, a 25mm screw has twice the holding power as a 13mm screw. This is most important when screwing into the edge of Whiteboard panels.

Selecting screw diameter

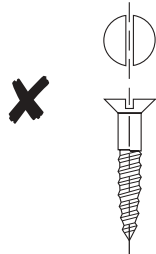
To avoid splitting the panel when screwing into the edge, the screw diameter should not exceed 20% of the panel thickness. For example, the maximum screw diameter for 16mm board is 6 gauge. Please see tables below.

Countersunk - Recessed Head
Parallel Shank



(recommended screw type)

Countersunk - Slotted Head
Traditional Wood Screw



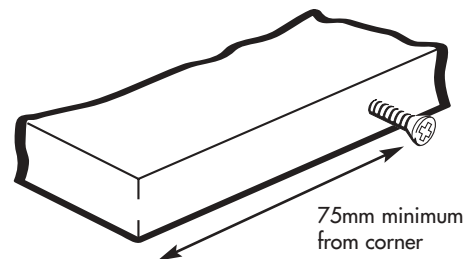
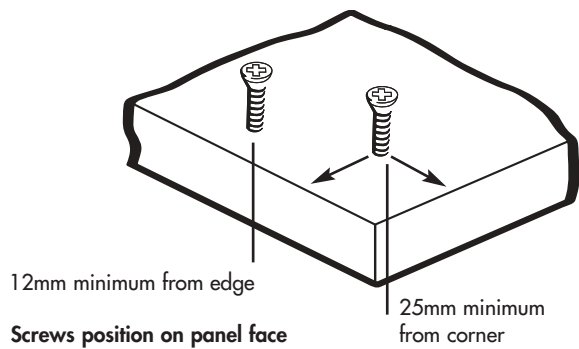
(not recommended)

Pilot holes

Correct pilot holes are essential to avoid splitting. The pilot holes should be approximately 80% of the screw core diameter. Do not over tighten screws, as further turning after the screw is tight will reduce holding power.

Screw location

Screws should be carefully positioned to prevent splintering and breakout - no closer than 25mm to a corner and no closer than 12mm to the edge. When a long line of screws has to be used, it is a good idea to stagger the screws to prevent splitting the substrate being screwed to. When screwing into the edge, never place a screw closer than 75mm from the end of the panel.



Screw Pilot Hole Selection		
Recommended Screw Gauge	Pilot Hole Diameter	Thickness
4	2.0mm	9mm
5	2.4mm	12mm
6	2.6mm	16mm
7	2.7mm	18mm
8	3.0mm	25mm
9	3.3mm	33mm

Maximum Screw Gauge Selection					
Thickness	The Maximum Recommended Screw Gauge to Thickness of Whiteboard				
	4	5	6	7	8
9mm	-	-	N/R	N/R	N/R
12mm	Yes	Yes	N/R	N/R	N/R
16mm	Yes	Yes	Yes	N/R	N/R
18mm	Yes	Yes	Yes	Yes	Yes
25mm	Yes	Yes	Yes	Yes	Yes
33mm	Yes	Yes	Yes	Yes	Yes

N/R = Not Recommended

Whiteboard shelf loadings

The following chart details the shelf loadings for Whiteboard. Applications for shelving may range from a simple shelf in a kitchen to a huge collection of books in a library.

With shelf simply supported at both ends (no fixing) with an evenly distributed load. The shelf will not deflect more than 4mm.

Thickness	Size	Shelf loading	Size	Shelf loading
16mm	600mm x 200mm	23kg	1000mm x 200mm	5kg
18mm		33kg		7kg
25mm		90kg		19kg
33mm		190kg		41kg
16mm	600mm x 300mm	35kg	1000mm x 300mm	7kg
18mm		50kg		10kg
25mm		135kg		29kg
33mm		205kg		61kg
16mm	600mm x 400mm	47kg	1000mm x 400mm	10kg
18mm		67kg		14kg
25mm		181kg		39kg
33mm		380kg		82kg
16mm	600mm x 500mm	59kg	1000mm x 600mm	15kg
18mm		84kg		21kg
25mm		226kg		58kg
33mm		475kg		-
16mm	600mm x 600mm	71kg	1200mm x 200mm	2kg
18mm		101kg		4kg
25mm		271kg		11kg
33mm		570kg		23kg
16mm	900mm x 200mm	7kg	1200mm x 300mm	4kg
18mm		10kg		6kg
25mm		26kg		16kg
33mm		56kg		35kg
16mm	900mm x 300mm	10kg	1200mm x 400mm	5kg
18mm		15kg		8kg
25mm		40kg		22kg
33mm		84kg		47kg
16mm	900mm x 400mm	14kg	1200mm x 600mm	8kg
18mm		20kg		12kg
25mm		53kg		33kg
33mm		112kg		71kg
16mm	900mm x 600mm	21kg		
18mm		30kg		
25mm		80kg		
33mm		168kg		

Note: These loads should be used as a guide only. We recommend that all designers carry out their own full load analysis based on their specific application.

Safety and handling

Whiteboard is a reconstituted wood product containing wood, resin and wax. Machine tools should be fitted with dust extractors and the wearing of a dust mask and eye protection is recommended. Material Safety Data Sheets for Whiteboard are available on request from any branch of The Laminex Group.

Trade Essentials®

Product Range

- Adhesives • Craffform® • Craftwood®
- Craftwood® Mouldings • Particleboard
- Particleboard Flooring • Whiteboard

Whiteboard is marketed, distributed and manufactured in Australasia by The Laminex Group

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WA (08) 9356 0800, NT (08) 8947 2312, SA (08) 8245 6300, **Formica®** 136 346.

For more information including sheet sizes and product availability, visit
www.thelaminexgroup.com.au