

# Craftwood®

The tradesman's essential guide



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

# Craftwood®

## The tradesman's essential guide



### Craftwood® - the craftsman's clay

Designs can be turned out easily with Craftwood® MDF. Craftwood® is a Medium Density Fibreboard (MDF) that is stable, homogeneous with a super fine finish. It cuts, drills and routes cleanly, without chipping or splintering, unlike timber and other wood panel products.

Your tools will take on a new lease of life as you can mould a sheet of Craftwood® MDF as if it were clay. The finish produced is fine and true, and with Craftwood® MDF stability it will remain that way.

### Versatility that provides you with endless possibilities

Trade Essentials® Craftwood is made in Australia by The Laminex Group and comes in an enormous range of thicknesses and sheet sizes: from thick to thin, moisture resistant and even panels that bend to form tight curves. The smooth, high density surface is suitable for many types of finishing such as painting, staining, laminating and veneering. With Craftwood® MDF, the possibilities are endless.

### Renewable, sustainable resource

The reconstituted wood fibres used to make Craftwood® MDF are obtained from Australian pine plantations – a sustainable renewable resource. In fact, only renewable plantation timber is used in the manufacture of Craftwood® MDF.

Craftwood® MDF allows you to achieve excellent building results without destroying our precious wilderness or the rainforests of other countries.

### Applications

There are many Craftwood® panel products available from The Laminex Group. And because of the enormous versatility of Craftwood® MDF, each panel product has different applications.

Craftwood® is a wood based panel and reacts to changes in moisture like natural timber, ie. high or low humidity will cause some expansion or contraction without any degradation to the strength of the board. Specific product details are listed separately on the following pages.

## Craftwood MR®

Craftwood MR®, as illustrated on page 2, is a highly moisture resistant Medium Density Fibreboard, suitable for use in areas of high humidity, or where accidental wetting may occur. The high moisture resistant properties of Craftwood MR® MDF is due to the bonding of the wood fibres with a specially formulated moisture resistant resin system.

### Applications

Craftwood MR® MDF is designed for interior use such as kitchen cupboards, bathroom vanities, laundry cupboards, shelving, wall lining (if used with a suitable feature jointing system) and mouldings.

**Note:** Craftwood MR® MDF is not recommended for exterior use.

### Bending properties

Craftwood MR® MDF can be bent to produce curves for furniture, doorways and other applications to minimum radius of 50 times the panel thickness.

### Insulation properties

Thermal conductivity varies with thickness. Usual range is 0.05 to 0.08 kcal/m Sec. °C.

### Dimensional stability

Length 0.4% Thickness 5.0% with changes from 35% Relative Humidity to 85% Relative Humidity (relative to datum point of 65% Relative Humidity).

### Moisture resistance

Craftwood MR® MDF complies with the Wet Cyclic Test for moisture resistance properties as specified in AS/NZS 1859.2: 2001 (Int). Refer to Physical Properties table for details.

### Physical Properties

(Typical physical properties when tested to AS/NZS 1859.2: 2001.Int)

Property	Unit	Board Thickness			
		9mm	12mm	16mm - 18mm	25mm - 32mm
Board Density	Kg/m <sup>3</sup>	760	750	735	710
Internal Bond	KPa	1,000 av.	1,000 av.	900 av.	800 av.
Modulus of Rupture	MPa	42 av.	42 av.	40 av.	35 av.
Modulus of Elasticity	MPa	3500 av.	3500 av.	3500 av.	3200 av.
*Screw Holding - Face	N	Na	Na	800 av.	800 av.
*Screw Holding - Edge	N	Na	Na	1,400 av.	1,400 av.
Surface Soundness	MPa	1.0	1.2	1.6	1.8
Moisture Content	%	6-9	6-9	6-9	6-9
Thickness Swell 24hr	%	10	8	6	5
Moisture Resistance	Test	V313	V313	V313	MOR A



\*Values reflect new testing methods for screw holding properties in AS/NZS 4266.13: 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 <sup>2</sup>
9mm	6.8
12mm	9
16mm	12
18mm	13
25mm	18
32mm	23

# Craftwood® Standard (STD)

## Applications

Craftwood® STD MDF is recommended for interior applications: such as detailed joinery, lacquered furniture, furniture mouldings, built-in furniture, shelving, wall linings and partitions (if used with suitable feature jointing systems), pattern making, toys, clocks and trophies.

**Note:** Craftwood® STD MDF is designed for interior use only and should not be exposed to damp conditions or high humidity.

## Bending properties

Craftwood® STD MDF can be bent to produce curves for furniture, doorways and/other applications to a minimum radius of 50 times the panel thickness.

## Insulation properties

Thermal conductivity varies with thickness. Usual range is 0.05 to 0.08 kcal/m Sec. °C.

## Dimensional stability

Length 0.4% and Thickness 5.0% with changes from 35% Relative Humidity to 85% Relative Humidity (relative to a datum point of 65% Relative Humidity).

### Physical Properties

(Typical physical properties when tested to AS/NZS 1859.2: 2001.Int)

Property	Unit	Board Thickness			
		9mm	12mm	16mm - 18mm	25mm - 32mm
Board Density	Kg/m <sup>2</sup>	760	750	735	710
Internal Bond	KPa	800 av.	800 av.	800 av.	700 av.
Modulus of Rupture	MPa	36 av.	36 av.	34 av.	32 av.
Modulus of Elasticity	MPa	3300 av.	3300 av.	3300 av.	3100 av.
*Screw Holding - Face	N	N/A	N/A	700 av.	800 av.
*Screw Holding - Edge	N	N/A	N/A	1,000 av.	900 av.
Surface Soundness	MPa	0.9	1.0	1.2	1.4
Moisture Content	%	6-9	6-9	6-9	6-9
Thickness Swell 24hr	%	15	11	9	8

\*Values reflect new testing methods for screw holding properties in AS/NZS 4266.13: 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	8	0 - 10
Smoke Developed	4	0 - 10

### General Board Weight

Unit	Kg/m <sup>2</sup>
9mm	6.8
12mm	9
16mm	12
18mm	13
25mm	18
32mm	23
35mm	23.5
38mm	24.5
40mm	25

### Acoustic Properties

(Typical achieved when tested to AS/NZS 1911-1985 Section A2-3 AS 1276-1979)

Thickness	STC Class
16mm	29 dB
25mm	31 dB
32mm	32 dB

## Craftwood® Standard - Thick

### Applications

In addition to the interior joinery applications of Standard Craftwood® MDF, Thick Craftwood® MDF (35mm - 40mm thick) is used for specialist applications such as doors, bench tops, partitions and other projects where thick, sturdy panel construction is required.

**Note:** Craftwood® STD MDF is designed for interior use only and should not be exposed to damp conditions or high humidity.

### Dimensional stability

Length 0.4% and Thickness 5.0% with changes from 35% Relative Humidity to 85% Relative Humidity (relative to a datum point of 65% Relative Humidity).



32mm MDF has been used as office partition doors for many years with a painted finish or natural timber veneer facing.

35mm Thick Craftwood® MDF is the best thickness for painted doors as it is thick enough to accommodate most door closers and locks available in the market. It is recommended when using Thick Craftwood® panels for doors, that timber edge lips are employed for hinge and lock fixing (see diagram below).

### Physical Properties

(Typical physical properties when tested to AS/NZS 1859.2: 2001 .Int)

Property	Unit	Board Thickness		
		35mm	38mm	40mm
Board Density	Kg/m <sup>3</sup>	620	620	620
Internal Bond	KPa	550 av.	550 av.	550 av.
Modulus of Rupture	MPa	24 av.	24 av.	24 av.
Modulus of Elasticity	MPa	2200 av.	2200 av.	2200 av.
*Screw Holding - Face	N	600	600	600
*Screw Holding - Edge	N	800	800	800
Surface Soundness	MPa	1.4	1.4	1.4
Moisture Content	%	6-9	6-9	6-9
Thickness Swell 24hr	%	6	6	6
General Board Weight	Kg/m <sup>2</sup>	21.7	23.6	24.8

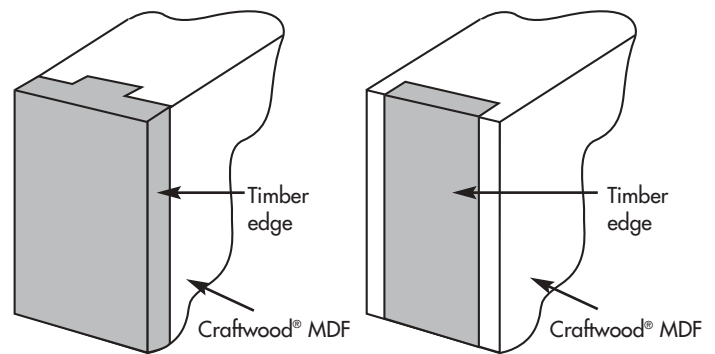
\*Values reflect new testing methods for screw holding properties in AS/NZS 4266.13: 2001 (Int)

Fire hazard indicies, acoustic properties and insulation properties are equivalent to 32mm Craftwood® STD MDF.

### The application of Thick Craftwood® MDF for doors and partitions.

The manufacture of timber doors in Australia is covered by AS 2688:1984. Whilst MDF is only mentioned in the standard as a core infill, as a thick panel Craftwood® MDF is highly suitable for use as a door product. It meets all requirements of the standard for:

1. Balanced construction (stability)
2. Surface finish
3. Show through
4. Strength
5. Puncture resistance
6. Paintability



### Hinge requirements

When using Thick Craftwood® panels (35mm – 40mm) for doors we recommend the following number of hinges.

- Doors up to:
- 2100mm high: 4 hinges
  - 2400mm high: 5 hinges
  - 2700mm high: 6 hinges

**Note:** Hinges used must be designed to carry the weight of the door. If in doubt use extra hinges.

### Mechanical fixing

For information on screw selection for Craftwood® panels please refer to page 12 of this brochure.



## Craftwood® Thin

(Standard Craftwood 3mm – 6mm thick)

Craftwood® (Thin) is a Medium Density Fibreboard designed for applications where a thin board is required with a hard smooth surface that can be overlaid with natural timber veneer, foils, vinyl, paint and lacquer.

Craftwood® (Thin) MDF is a wood based panel and reacts to changes in moisture like natural timber, ie. high or low humidity may cause some expansion or contraction without any degradation to the strength of the board.

### Applications

Cupboard backs, drawer bottoms, curved panels, door skins and other applications requiring a thin panel.

**Note:** Craftwood® (Thin) MDF is designed for interior use only and should not be exposed to damp conditions or high humidity.

### Bending properties

Craftwood® (Thin) MDF can be bent to produce curves for furniture, doorways and other applications to minimum radius of 50 times the panel thickness.

**Note:** When bending, always fix regularly and bend around a solid form to evenly support stressing in the panel.

### Dimensional stability

Length 0.4% Thickness 5.0% with changes from 35% Relative Humidity to 85% Relative Humidity (relative to datum point of 65% Relative Humidity).

Physical Properties				
(Typical physical properties when tested to AS/NZS 1859.2: 2001 .Int)				
Property	Unit	Board Thickness		
		3mm	4.75mm	6mm
Board Density	Kg/m <sup>3</sup>	830 av.	810 av.	780 av.
Internal Bond	KPa	1,200 av.	1,150 av.	950 av.
Modulus of Rupture	MPa	40 av.	36 av.	36 av.
Modulus of Elasticity	MPa	3600 av.	3300 av.	3300 av.
Surface Soundness	MPa	1.0	1.0	1.0
Moisture Content	%	6-9	6-9	6-9
Thickness Swell 24hr	%	25	24	20



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	8	0 - 10
Smoke Developed	4	0 - 10

General Board Weight	
Unit	Kg/m <sup>2</sup>
3mm	2.5
4.75mm	3.8
6mm	4.7

## Craftform®

Craftform® is an innovative Medium Density Fibreboard (MDF) product featuring specially machined V-grooves which provide enhanced flexibility of the MDF sheet. This flexibility allows for creative shapes to be formed, with a radius of down to 200mm being achievable. The Craftform® substrate is 9mm Moisture Resistant MDF which provides added security in areas of humidity and accidental wetting.

### Applications

Craftform® MDF is recommended for interior joinery applications where a flexible substrate is required. The substrate can be used either as a supporting material for further decorative finishing or as the feature itself. Craftform® MDF is ideal for fabricating into curved furniture and formed shapes for counter fronts, gondolas, displays and other decorative featured joinery.

**Note:** A PVA adhesive such as **Trade Essentials® Craftwood® PVA**

is recommended when creating forms using Craftform®MDF. For details on correct methods of fabricating forms and shapes with Craftform® MDF please refer to the Craftform® Tradesman's Essential Guide.



### Bending properties

This is a feature of Craftform® MDF, allowing fabrication of the 9mm MDF sheet into curves and shapes down to a minimum radius of 200mm.

### Insulation properties

Thermal conductivity varies with thickness. Usual range is 0.05 to 0.08 kcal/m Sec. °C.

### Dimensional stability

Length 0.4% Thickness 5.0% with changes from 35% Relative Humidity to 85% Relative Humidity (relative to datum point of 65% Relative Humidity).

### Moisture resistance

Craftform® MDF complies with the Wet Cyclic Test for moisture resistance properties as specified in AS/NZS 1859.2: 2001(Int). Refer to Physical Properties table for details.



### Physical Properties

(Typical physical properties when tested to AS/NZS 1859.2: 2001.Int)

Property	Board Thickness	
	Unit	9mm
Board Density	Kg/m <sup>3</sup>	760
Internal Bond	KPa	1,000 av.
Modulus of Rupture	MPa	42 av.
Modulus of Elasticity	MPa	3500 av.
Surface Soundness	MPa	1.0
Moisture Content	%	6-9
Thickness Swell 24hr	%	10
Moisture Resistance	Test	V313
General Board Weight	Kg/m <sup>2</sup>	6.8

### 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

## Single Sided MDF

Single Sided MDF is a highly moisture resistant Medium Density Fibreboard, sanded smooth on one side and bonded on the other side with a hard wearing melamine surface.

Single Sided MDF is manufactured for the membrane pressing and painted panel market. To cater for the unique requirements of various vinyl membrane pressing and paint application techniques, there are two Single Sided MDF board substrates available to choose from:

- Single Sided MDF (735kg/m<sup>3</sup>), and
- High Density Single Sided MDF (810 kg/m<sup>3</sup>)

Single Sided MDF is a wood based panel and reacts to changes in moisture like natural timber, ie. high or low humidity may cause some expansion or contraction without any degradation to the strength of the board.

Single Sided MDF is recommended for interior use only.

### Physical Properties

(Typical physical properties when tested to AS/NZS 1859.2: 2001 .Int)

Property		Single Sided	High Density
	Unit	16mm - 18mm	16mm - 18mm
Board Density	Kg/m <sup>3</sup>	735	810
Internal Bond	KPa	900 av.	1200 av.
Modulus of Rupture	MPa	40 av.	57 av.
Modulus of Elasticity	MPa	3500 av.	3800 av.
*Screw Holding - Face	N	800 av.	800 av.
*Screw Holding - Edge	N	1,400 av.	1,400 av.
Surface Soundness	MPa	1.6	2.5
Moisture Content	%	6-9	6-9
Thickness Swell 24 hr	%	6	5
Moisture Resistant	Test	V313	V313
Board Weight	Kg/m <sup>2</sup>	13	14.6

### 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

## Applications

Single Sided MDF can be overlaid with vinyl, timber veneer or a paint system. It is used to make cupboard doors, cupboard end panels and other applications where panels are required to be decorated on one side.

Single Sided MDF panels are manufactured with a specific pre-stressed bow to cater for correction factors that arise in the application of different decorative surfaces to the non-laminated face.

As the substrate is a wood based panel, it will react to changes in moisture as per natural timber, and hence humidity variations will affect the level of the bow.

## Substrate and pre-stressed bow options

Many factors will contribute to the overall stress applied to the non-laminated panel face and hence the resultant panel flatness. These include the decorative surface applied and the amount of face routing or modification to the non-laminated face. There are two Single Sided MDF board substrates available and each has different pre-stressed values to accommodate the various manufacturing factors.

Therefore, The Laminex Group strongly recommends that trial panels be manufactured and subjected to the proposed environment before full-scale processing commences.





### **Single Sided MDF (735kg/m<sup>3</sup>)**

Single Sided MDF incorporates regular Craftwood® MR substrate. It's stability, high quality surface finish and machining properties allow the board to be used for a wide range of membrane pressing, veneering and painting jobs. It is ideal for flat panels or where simple routing profiles are required and is available in three different pre-stressed bow ranges to accommodate most applications.

### **High Density Single Sided MDF (810kg/m<sup>3</sup>)**

The higher density core and resin system of this MDF substrate has been designed specifically for applications where complex, deep routing profiles are required.

This board is available in two stable, consistent pre-stressed bow ranges and is suitable for all painting and membrane pressing jobs.

### **Insulation properties**

Thermal conductivity varies with thickness. Usual range is 0.05 to 0.08 kcal/m Sec. °C.

### **Dimensional stability**

Length 0.4% Thickness 5.0% with changes from 35% Relative Humidity to 85% Relative Humidity (relative to datum point of 65% Relative Humidity).

### **Colours**

The melamine surface of Single Sided MDF is available in white as standard. Other colours may be available as a special order. Contact The Laminex Group for details.

### **Surface finish**

Surface finish is available in Flint and Satin.



Vinyl wrapped Single Sided MDF door.

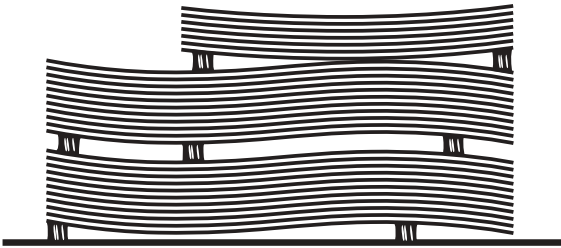
## Storage and handling

### Storage and handling of Craftwood® panel products

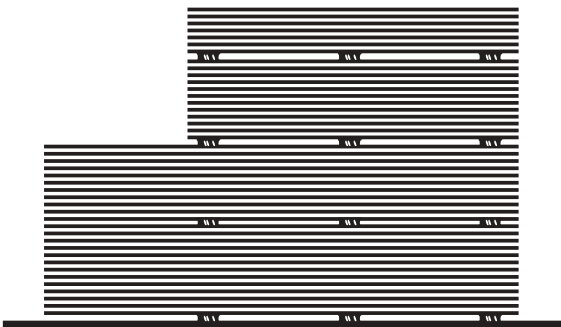
The following recommendations should be applied to maintain Craftwood® panels in good order and condition. The storage area should be protected from the sun, rain and wind. Open sided sheds would not be regarded as dry stores.

All packs should be evenly supported at each end at intervals of no more than 750mm where the packs are multiple stacked, and no further than 150mm from the edge of boards.

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



Incorrect storage method



Correct storage method

### Pre-conditioning

The Laminex Group usually dispatches Craftwood® MDF with a moisture content of between 6% to 9%. This can alter, however, during the time the boards are in transit or in storage before use. Apart from this, the relative humidity of the environment where the boards are to be fixed may call for a quite different moisture content, and some adjustment may be needed.

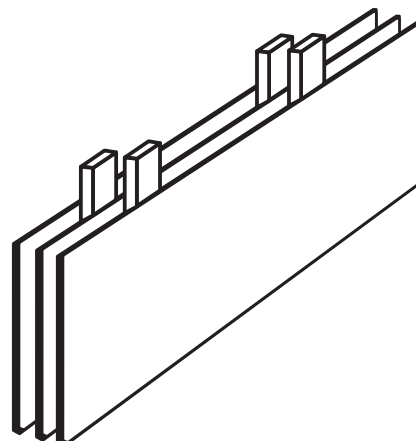
Pre-conditioning Craftwood® boards is recommended to ensure that they attain an equilibrium moisture content (EMC) before fixing, so as to reduce the likelihood of bowing after they have been fixed. Any subsequent movement will thus be a drying shrinkage which, given adequate support and fixings, keeps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

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



## Fabrication

### Machining

Craftwood® MDF 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 decorated (pre-laminated) board a triple chip saw blade should protrude 20-30mm above the surface of the board. For un-decorated Craftwood®, an alternate bevel saw blade is also satisfactory.

**Note:** All decorated panels including Single Sided MDF should be cut only on saws that have a scribing blade on the underside. Work piece must be firmly fixed. Continue to observe all professional machining and safety practices.

### Routing and edge shaping

One of the prime features of Craftwood® MDF is its sharp, clean edge-machining requiring minimal treatment prior to finishing. Edge-sanding on routed mouldings and panels are eliminated with the right finishes, and Craftwood® MDF can be matched to similar configuration as natural wood. Contoured designs are almost unlimited although feathered or sharp protruding edges should be avoided.

The most common problem with face routing of panels is the depth of the profile, where the depth of cut can be up to 13mm to 14mm deep. This is far too deep for any single router cut and is unnecessary as the same appearance can be achieved with a cut between 8mm to 10mm. When the cut is too deep the cutter over heats and blunts quickly, resulting in torn fibres and furry surfaces. This in turn requires a lot of extra sanding.

### Hand tools

When using hand tools to cut Craftwood® MDF panels they must be kept sharp, with no resin build up on the back of the cutter, and must not be allowed to burn. When using routers do not allow the cutter to take too deep a cut at one time, for deep trenches only cut 6mm depth at one time. Never trench deeper than one third of the thickness.

When using electric hand saws, cut with the face side down. When using hand saws, hold the saw at as flat an angle as possible to the plane of the board with the face side up.

## Sanding

The way to sand a machined part made from Craftwood® MDF is to start with 120 grit moving up to 180 grit to 280 grit and higher. The use of palm held orbital sanders or hand sanding is suitable. Coarser papers are not recommended as they just keep raising the fibres. To obtain a fine finish, you should merely buff the surface.

### Recommended abrasives

The best type of sandpaper to use on Craftwood® MDF is free cut in a A or C weight or P Graded paper. Very good results are achieved with Random orbital sanders.

Carbide-based abrasives are generally recommended for sanding Craftwood® MDF. (Aluminium oxide types tend to dull rapidly, producing burnishing.) A 'modified closed coat' abrasive is suggested. High sanding speeds cut the fibres most efficiently; with belt sanders, for example, belt speeds in excess of 1500 metres per minute and controllable feed speeds are recommended.

### Face sanding

Craftwood® MDF is supplied from the mill typically with a 180 grit finish on the surfaces. This provides an excellent smooth surface - ideally suited to the direct application of most veneers and plastic foils. Scuff-sanding with the object of increasing adhesion is not recommended. For the economic application of paints or printed effects, and for very thin foils, a further light sanding with 240 grit or even 320 grit belts may be advisable.

Deep sanding of the faces of MDF with the object of reducing thickness is not recommended.

### Edge sanding and sealing

Cut edges may require sanding with 120 grit to 380 grit. Good quality contour cutting should require little or no sanding. If sanding is required, this may be carried out before or after priming/sealing.



## Adhesives and bonding

Many adhesives work well with Craftwood® MDF. General Purpose PVAs are satisfactory, however **Craftwood® PVA** has been specifically formulated to complement the high quality properties of MDF board.



Bonding Craftwood® MDF with Craftwood® PVA is highly recommended for the following reasons:

- It has a rapid, high bond strength, and can withstand higher impact when machining compared to other similar adhesives.
- It will accept stains and lacquers without going 'shiny' and highlighting the join
- It has good heat and moisture resistant properties suitable for use with moisture resistant Craftwood® MDF.

## Mechanical fixing

### Selecting screw type

Parallel threaded screws are recommended for Craftwood® MDF.

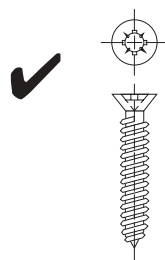
### Selecting screw length

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 Craftwood® MDF panels.

### Selecting screw diameter

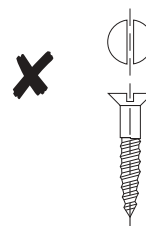
To avoid splitting the panel when screwing into the edge, the screw diameter should not exceed 20% of the panel thickness. For example, the maximum screw diameter for 16mm board is 6 gauge. Please see tables below.

Countersunk - recessed head parallel core



(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 at least 2mm to 3mm longer than the screw used and should be approximately 80% of the screw core diameter. Do not over-tighten screws, as further turning after screw is tight will reduce holding power.

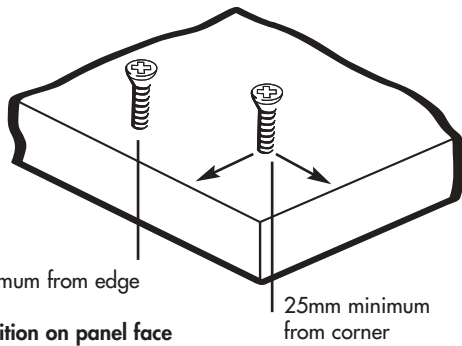
### Screw location

Screws should be carefully positioned to prevent splintering and breakout - no closer than 25mm to a corner and no closer than 10mm 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. If screwing into the edge of Craftwood® MDF, 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	35mm

Maximum Screw Gauge Selection					
Thickness	The Maximum Recommended Screw Gauge to Thickness of Craftwood®				
	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
35mm	Yes	Yes	Yes	Yes	Yes

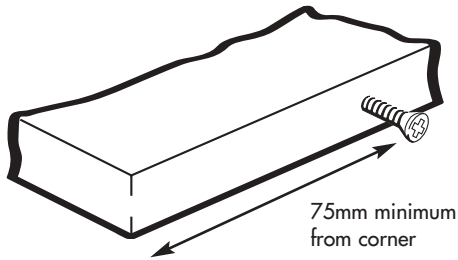
N/R = Not Recommended



12mm minimum from edge

25mm minimum from corner

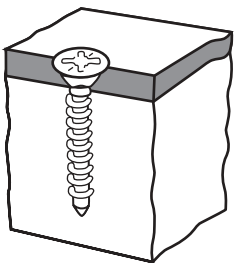
Screws position on panel face



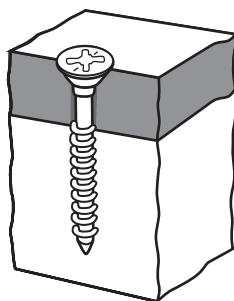
75mm minimum from corner

Screws position on panel edges

When fixing thin attachments to MDF, use screws which are threaded up to the head. Screws used for panel jointing or the fixing of thicker attachments may have a plain or unthreaded shank (see below).



Thin attachments



Panel jointing or thick attachments

## Nails and staples

Nails and staples are alternatives to screws. However, their holding/pullout strength is much lower. Although generally drilling of pilot holes is not required it is still a recommended practice.

The common use of nails or staples is for holding glued joints together until the adhesive has set. The size of nails or staples should be twice as long as the thickness of material being used and the gauge be the lowest that will drive into the board without bending.

When driving with power tools, the driving power should only be sufficient to drive the head flush or marginally below the surface. If the driving pressure is too high and the staple is driven in too far, splitting of the board could occur and tool marks will show.

### Spacing nails

Because of the tendency to split panels when driven into the edge, nails should not be driven closer than 75mm to the corner of a panel or spaced closer than 150mm apart. Ring shank nails give much better holding power than smooth nails. Driving nails in at an angle further enhances holding power.

As with screws, the nails or staples should not be closer than 25mm to the corner, no closer than 10mm to the edge on the face and no closer than 75mm to the end when fixing to the edge of Craftwood® MDF panels.

### Spacing staples

Because staples do not have high holding strength, they are not generally used for structural joints. They may be used to attach fabric and decorative items or to hold adhesive-based joints together until the glue cures.

## 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.

### Hole diameter

The fit of dowel in the hole is critical to withdrawal strength. Holes drilled in Craftwood® MDF should be slightly larger than those used in particleboard due to the high density of the board.

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



### Dowel diameter

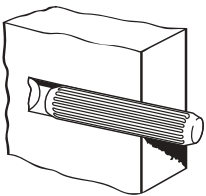
Dowels used should be no thicker than 50% of the thickness of the panel used.

### 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.

### Depth

The dowel should be inserted at least 25mm into the edge of the Craftwood® MDF panel and as deep as practical into the face surface, but no more than two thirds of the thickness.



Interference fit  
(not recommended)

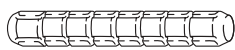
Clearance 0.1mm all round  
(preferred)

### 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)

## Painting and finishing Craftwood® MDF

Craftwood® MDF is supplied from the mill with a 180 grit finish and is suitable for most applications. An additional light sanding to high grit levels will be beneficial for applications where a high level of smoothness is required without the necessity of using additional coats of lacquer or paint.

## High quality commercial finish

Before any painting is commenced it is important to ensure the surface of the Craftwood® MDF is properly prepared.

### Surface preparation

Sand all surfaces to obtain a smooth, even finish. Using an acrylic filler, smooth out all depressions and irregularities. When the filler is dry, sand to a smooth, even finish.

### Sealer

When the above procedure is completed, a suitable sealer should be applied.

**Note:** Do not use "Isogard" types.

### Undercoat

The sealer may require a slight sand prior to the application of a suitable undercoat.

Undercoats, usually two pack, may be either epoxy, polyurethane or polyester types and are usually pigmented. When selecting an undercoat, it is important to consider several factors. But the most important considerations are its sanding characteristics, which affect sandability, hardness, and have a bearing on the ability of the surface to withstand and resist impact damage and improve gloss hold out.

The undercoat should be applied at the manufacturer's recommended spreading rate and drying times.

When the undercoat is dry, it should be sanded smooth using a range of freecut papers down to 600 grit.

### Topcoat

A commonly used type of coating for the final coat in this process, to achieve optimum results, is a two pack system. This type of coating is available from all major paint manufacturers in Australia.

## Conventional painting of Craftwood® MDF

### Surface preparation

Stop all nail holes and imperfections with a suitable timber filler and acrylic blade filler and allow to dry. Lightly sand all surfaces to be coated so as to obtain a smooth and even finish. Dust off all sanded surfaces using a damp rag before painting commences.

### Undercoat

For conventional painting, the recommended type of undercoat or primer is a water based acrylic type. Apply the coating in accordance with the manufacturer's instructions. When dry, all painted surfaces should be sanded smooth. It is recommended that acrylic undercoats should **not** be watered down prior to use.

### Topcoat

Ideally, an acrylic coating is selected as the top coat. However, as some formulations in this generic type can be found to be unsuitable in certain applications, as in the case of doors and architraves of high wear areas, an oil or alkyd base type may be more suitable.

### Application of topcoat

To achieve the best appearance in finish, spray application is recommended to be carried out in as dust free circumstances as possible. Conventional brush and roller applications can also give a satisfactory result.

### Staining of Craftwood® MDF

Due to the water resistant properties of Craftwood® MDF, many types of stains have a tendency to be absorbed into the Craftwood® MDF differently, resulting in patchy areas. It is good practice to seal the surface and edges with an acrylic sealer before staining. For persons not experienced in staining large areas, we recommend the following procedure:

1. Apply one coat of an acrylic sealer such as Watty! Speed Clear or similar, and allow 24 hours to dry. This acts as a sealer.

2. Apply one or two coats of Watty! Estapol Gloss or Satin Stain or similar, until required depth of colour is achieved.

**Note:** When using a stain, it is wise to use a small off-cut to test the strength of the colour. Also check the absorbency of the edges.

### Clear finishing without stain

Apply one or two coats of acrylic sealer such as Watty! Speed Clear or similar. If a tough, no-nonsense finish is required, one coat of Watty! Speed Clear should be applied. Allow 24 hours to dry.

## Jointing systems for Craftwood® MDF panels

### Jointing

It is difficult to make a joint in wood based panels like Craftwood® for wall panelling and not show the joint. The slightest movement will show up and look unsightly so the best alternative is to make the joint look attractive, which can be achieved in many ways.

The most common types of joint for wall panelling are a 'V' joint, a slip tongue joint or tongue and groove.

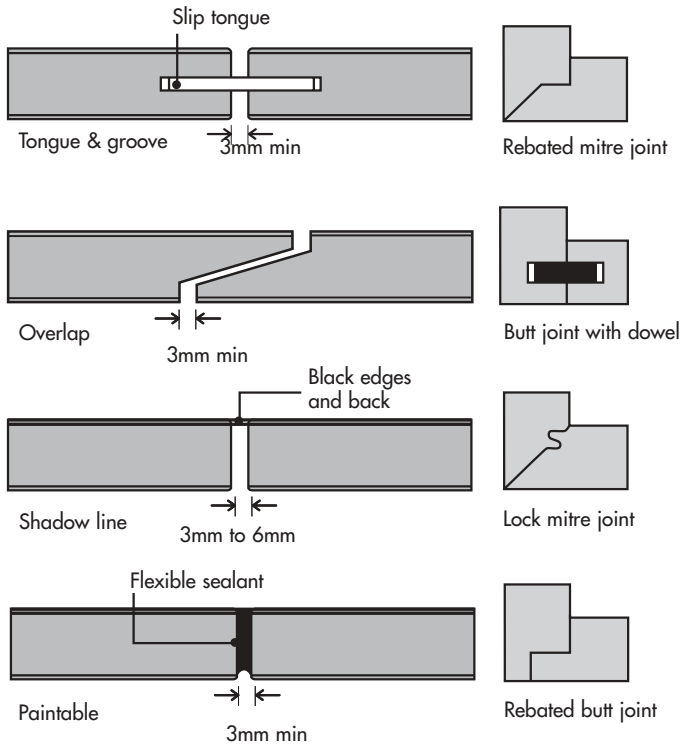
### Featured joints

On boards to be painted on site and for plain coloured pre-decorated boards, joints are usually featured; either by the use of suitable cover strips, by bevelling board edges, or by forming an 'open' joint. These techniques, together with some angle joint techniques, are shown on the following page.

Cover strips are manufactured in aluminum, plastic or wood. Aluminium or metallised plastics are usually chosen to contrast with the board; whereas a suitably coloured plastic, or painted/stained wood helps to form more unobtrusive joints.

## Jointing systems for Craftwood® MDF panels cont...

The joints shown here are only a representation of the many configurations that can be used. Many types of aluminium partition mouldings are also available. All feature joints are suitable, providing an expansion or contraction gap of 3mm minimum is provided.



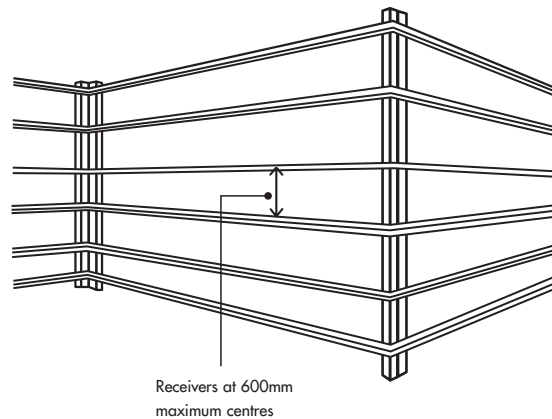
The joint that will work the best is the slip tongue as it is simple and very effective. The edge of the panels have to be grooved by either spindle moulder, or on site with a router using a saw blade type cutter such as 4 tooth slotting cutter. The slip tongue can be plywood or Thin Craftwood® MDF but the best is anodised aluminium, usually black. The reason for this is that it will not show any movement as it would with a painted tongue. All edges should be painted black with a very fine arras on the edge. This method works well with the split batten system.

## Application and installation of Craftwood® MDF for wall panelling

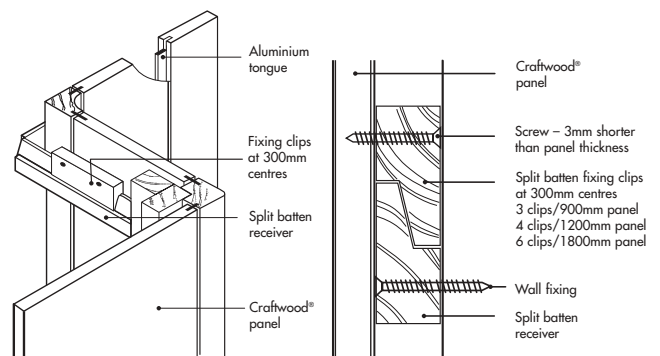
A common use for Craftwood® and decorated MDF panels is as wall panelling.

### Fixing panels to the wall - Split Battens or "J" Clips

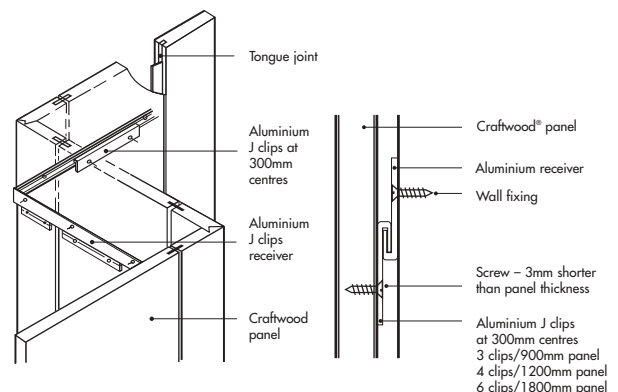
The most effective method of fixing wood based panels is wooden or aluminium cleats to the wall and back of the panels. This method has many advantages. The panels can be prepared off site i.e. cut, edged or polished. They are quick to install and can be easily replaced if damaged. If there is any expansion or contraction, they can be easily pushed along.



### Timber Split Batten installation



### Metal 'J' Clip installation



## Fixing panels to stud work

Spacing of battens, studs and noggins for panels up to 12mm thick:

Studs should be a maximum of 450mm apart with one noggin for walls up to 2400mm high, and two noggins in walls over 2400mm high. Battens should be spaced at 450mm centres running at right angles to the studs.

For panels over 12mm thick, the stud spacing can be 600mm with noggins the same as for thinner panels, and battens can be spaced at 600mm.

If the panels are to be mechanically fixed by screws or nails, it is important that a fixing pattern be followed. The fixing should work from the centre out in every direction. If this is not possible on larger panels, fix along one long side first and then work across the panel on all patterns evenly.

### Panel thickness

Panel thickness is relative to what is required from the panel i.e. impact or sound rating, etc.

As a general rule 12mm is very suitable for most occasions but 16mm may be more appropriate for sound rating. 12mm is the thinnest panel that can be used with the split batten system. Thinner panels could be used, if good support is provided and the panels are well fixed with nails and adhesive.

### Nails, staples, screws etc...

When mechanical fixings are used for Craftwood® boards it is particularly important that the correct number of fixings are used.

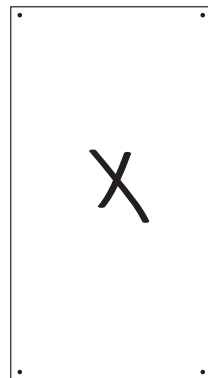
Fasteners should be inset from board edges by at least 12mm wherever possible. Sometimes it will not be possible to inset fasteners 12mm from the edge. In these instances, inset as far as the support width will allow.

**Note:** Craftwood® MDF is often used as pelmets to conceal light fixtures, and over window coverings. Wherever there is constant heat from lighting, or from heat from the sun on glass, MDF will shrink causing gaps.

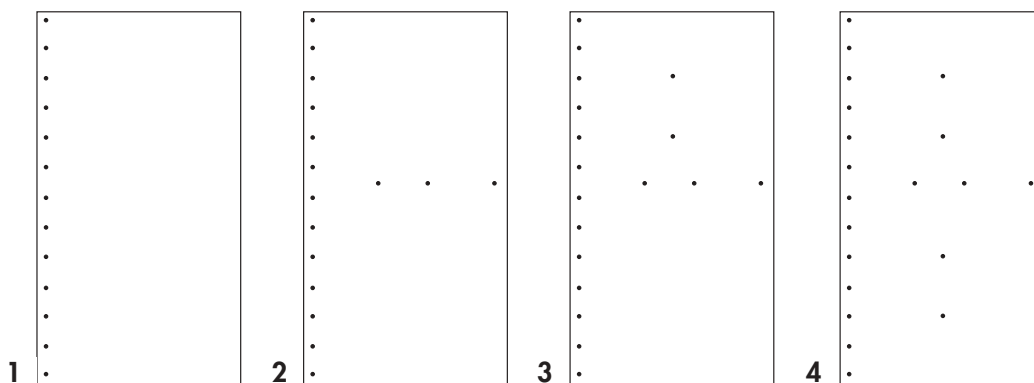
Do not fit pelmets from wall to wall, always leave a gap.

Do not leave plaster cornices to be set hard to pelmets.

On long runs allow slip joints, or 'V' joints for pelmets over 3600mm.



Incorrect  
DO NOT tack corners first



Correct sequence and frequency of fixing

## Application and installation of Craftwood® MDF for stairs

Craftwood® MDF has been used in Australia for the manufacture of internal residential stairs for many years. Medium Density Fibreboard is also used for stairs in America and the United Kingdom.

To perform satisfactorily, a stairway and all of its components have to reach a specific performance level.

The main attributes to be considered are: strength, deflection, vibration under dynamic load, slip resistance, resistance to moisture.

Stairways should be strong enough to carry normal loading with an acceptable margin for safety without excessive deflection that would impair its efficiency.

Stairs manufactured from Craftwood® MDF should meet all the requirements of the Building Code of Australia and Local Government Authorities, and only be installed in dry, well ventilated areas.

Craftwood® MDF stairs should not be installed in areas where they will be constantly wet or exposed to constantly high humidity above 70%, such as in basements. They should not be exposed to naked earth or damp subsoil, as under buildings, without first taking action to seal and protect the Craftwood® MDF from moisture of fungal attack.

The overall width of a Craftwood® MDF stairway should nominally be 900mm (maximum width recommended 1000mm including the stringers).

**Treads** - should be from 32mm Craftwood® MDF

**Risers** - should be from 16mm Craftwood® MDF

**Stringers** - can be from 32mm Craftwood® MDF provided they are fully supported by a supporting wall, with studs at 600mm centers.

### Method

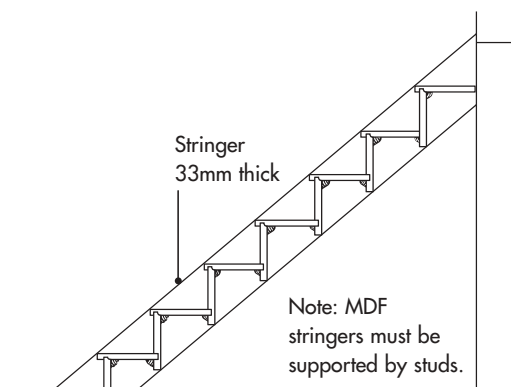
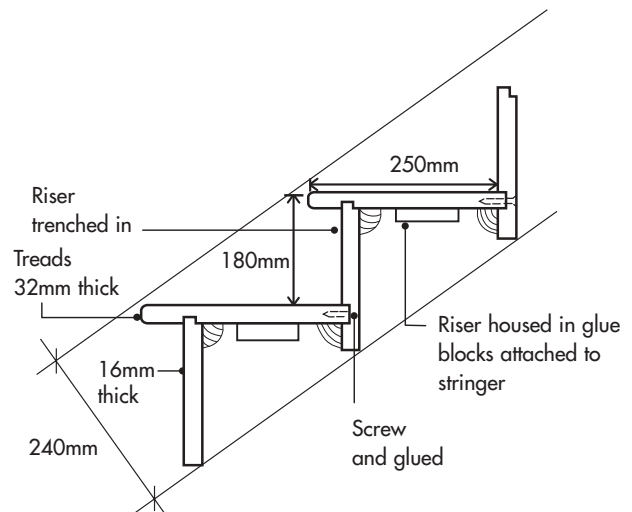
Treads should span 848mm x 240mm minimum width to 355mm maximum width and be housed into the stringers 6mm each end. Trenches should be a snug fit, supplemented with good quality adhesive such as **Craftwood® PVA**.



Risers should be 16mm Craftwood® MDF trenched into the underside of tread and into the stringer and run past the lower tread by 25mm, to allow glue blocks to be fitted and screwed to the back edge of the lower tread, with 10# x 40mm screws. All joints should be supported with adhesive and glue blocks fitted on all sides.

**Stringers** - if Craftwood® MDF stringers are to be used, housings should be as shallow as possible, say 6mm. Treads should be screw fixed. Treads and risers should be kept constant.

**Note:** All stairways must meet all requirements of the Building Code of Australia and all Local Government requirements.





## Craftwood® board shelf loadings

The large range of Craftwood® MDF products allow selection of product on suitability for shelf loadings which 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	31kg	1000mm x 200mm	6kg
18mm		41kg		9kg
25mm		120kg		26kg
32mm		235kg		54kg
16mm	600mm x 300mm	47kg	1000mm x 300mm	10kg
18mm		67kg		14kg
25mm		182kg		39kg
32mm		380kg		82kg
16mm	600mm x 400mm	63kg	1000mm x 400mm	13kg
18mm		90kg		19kg
25mm		241kg		52kg
32mm		506kg		109kg
16mm	600mm x 500mm	79kg	1000mm x 600mm	20kg
18mm		112kg		29kg
25mm		302kg		78kg
32mm		633kg		164kg
16mm	600mm x 600mm	95kg	1200mm x 200mm	3kg
18mm		135kg		5kg
25mm		362kg		15kg
32mm		760kg		31kg
16mm	900mm x 200mm	9kg	1200mm x 300mm	5kg
18mm		13kg		8kg
25mm		35kg		22kg
32mm		75kg		47kg
16mm	900mm x 300mm	14kg	1200mm x 400mm	7kg
18mm		20kg		11kg
25mm		53kg		30kg
32mm		75kg		
16mm	900mm x 400mm	18kg	1200mm x 600mm	11kg
18mm		26kg		16kg
25mm		71kg		45kg
32mm		112kg		95kg
16mm	900mm x 600mm	28kg		
18mm		40kg		
25mm		107kg		
32mm		225kg		

**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

Craftwood® MDF is 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 Craftwood® MDF are available on request from any branch of The Laminex Group.

# Trade Essentials®

## Product Range

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

**Craftwood®** MDF is marketed, distributed and manufactured in Australasia by The Laminex Group

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