

Hardboard

THE laminex GROUP

TECHNICAL INFORMATION

DESCRIPTION

Hardboard is a dark brown, lightweight, strong and durable, high density wood fibre panel product manufactured by The Laminex Group.

Hardboard is available as:

- **Standard Hardboard**
- **Tempered Hardboard**
Tempered hardboard is specifically designed to give added moisture resistance, and is identified by a yellow stripe on each end of the panels.
- **Pegboard**
Pegboard is a perforated hardboard with 4.8mm diameter holes at 25.4mm centres in staggered rows 12.7mm apart. Pegboard is also available as "Double Pegboard" which is perforated with 4.8mm diameter holes at 12.7mm centres in both directions.
- **Embossed Hardboard**
A lightweight rigid hardboard sheet embossed during manufacture in an attractive range of patterns:
 - Channel board
 - Cedrella board
 - Barnwood
 - Leather board

USES

General

- Interior wall and ceiling linings
- Concrete and wood floor overlays
- Door-skins
- Under vinyl floor coverings
- Cabinet and mirror backs
- Drawer bottoms
- Table mats
- Packaging
- Concrete formwork
- Templates
- Sign boards

Tempered Hardboard (used for all of the above plus):

- Decorative wet area lining substrates
- Soffits

Pegboard:

For shop fittings and workshop applications where the facility for attaching a variety of hooks and brackets may be used.

Pegboard can also be used as:

- Ventilation Panels
- Soffit linings
- Acoustical Panels

Embossed Hardboard

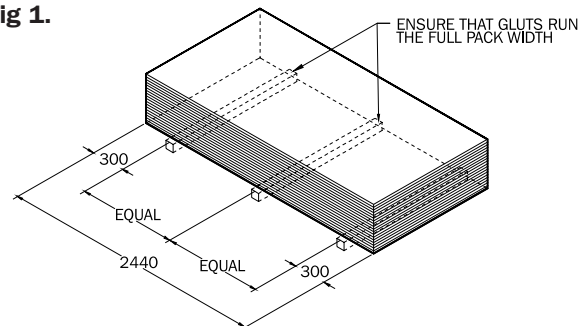
- Decorative interior wall and ceiling linings
- Flush door facings
- Sliding cupboard doors

LIMITATIONS IN USE

Storage

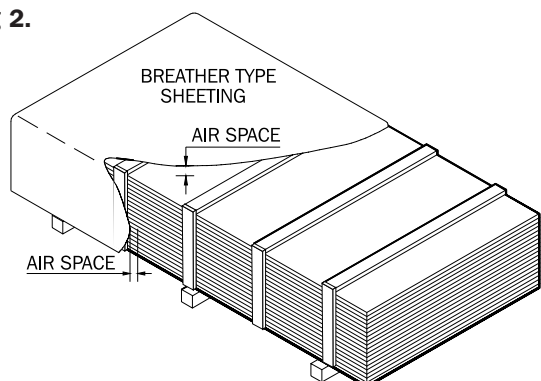
- To avoid fading, store sheets away from direct sunlight.
- To keep sheets flat and dry stack on evenly spaced full width 100mm bearers on a level dry floor (see Fig 1).

Fig 1.



- For outside storage hardboard must be covered with a breather-type waterproof material allowing space for air circulation around the stack (see Fig 2).

Fig 2.



Note: Tempered Hardboard is moisture resistant, not waterproof.

DURABILITY

When stored, handled and used in accordance with this document for each end use segment, Hardboard will meet the durability requirements of NZBC B2.

The Laminex Group will not be liable to any person if the conditions as to storage, handling and use herein described are not complied with.

COMPOSITION

Hardboard is formed from wood fibre pulp produced by refining pine wood chips. A mat of pulp and bonding agents is hot pressed in sheet form into high density panels. These are conditioned to an aim moisture content of 10% before being trimmed to size. Hardboard has two equally smooth sides.

For Tempered Hardboard, the mat of pulp and bonding agents is hot pressed in sheet form into a higher density panel than standard Hardboard.

Table 1. Sheet Sizes, Thickness, Weights and Density*

Product	Sheet Sizes (mm)	Nominal Thickness (mm)	Mean Weight (kg/m ²)	Weight per Sheet (kg)	Density (kg/m ³)
Standard Hardboard	2400x1200	3.00	3.1	8.8	1020
	1800x1200			9.6	
	2400x1200			13.0	
	2700x1200	14.6			
	3000x1200	16.2			
	2400x1200	6.00	5.8	16.5	
Standard Pegboard	2400x900	4.75	4.2	9.2	950
	2400x1200			12.3	
Double Pegged Hardboard	2400x1200	4.72	4.0	11.4	950
Tempered Hardboard	2400x900	4.75	4.7	10.3	1010
	2400x1200			13.8	
	2400x1200	6.00	5.9	17.4	
Embossed	2440x1220	4.75	4.3	12.9	950

*Other sizes available on request

Table 2. Sheet Tolerances (mm)

Length and Width	± 2.0mm	
Squareness	2mm maximum (difference between two sheets placed face to face)	
Straightness	2mm maximum per sheet length and width	
Thickness (mm)	Nominal	Maximum
	3.0	3.4
	4.75	5.2
	6.0	6.2

Table 3. Physical Properties of Standard Hardboard

Property	Sheet Thickness (mm)	Performance Figure	Units	
Internal Bond Strength	3.0	2.5	MPa	
	4.75	2.5		
	6.0	2.0		
Shear Strength (in plane of board)	3.0	3.19	MPa	
	4.75	3.18		
	6.0	3.18		
Modulus of Rupture	3.0	Long Direction	59	MPa
		Short Direction	39	
	4.75	Long Direction	43	
		Short Direction	33	
	6.0	Long Direction	41	
		Short Direction	35	
Modulus of Elasticity	3.0	Long Direction	6000	MPa
		Short Direction	4700	
	4.75	Long Direction	5500	
		Short Direction	4000	
	6.0	Long Direction	6200	
		Short Direction	5200	
*Impact (index of resistance of board)	3.0		110	mm
	4.75		175	
	6.0		185	
*Nail Head Pull Through (7.00mm diam head)	3.0		325	N
	4.75		530	
	6.0			

Table 4. Physical Properties of Tempered Hardboard

Property	Sheet Thickness (mm)	Performance Figure	Units	
Internal Bond	4.75	2.8	MPa	
	6.0	2.5		
Shear Strength (in plane of board)	4.75	4.24	MPa	
	6.0	4.04		
Modulus of Rupture	4.75	Long Direction	60	MPa
		Short Direction	47	
	6.0	Long Direction	39	
	Short Direction	34		
Modulus of Elasticity	4.75	Long Direction	6900	MPa
		Short Direction	6000	
	6.0	Long Direction	5300	
	Short Direction	4600		
*Impact (index of resistance of board)	4.75		200	mm
	6.0		215	
*Nail Head Pull Through (7.00mm diam head)	4.75		605	N
	6.0		695	

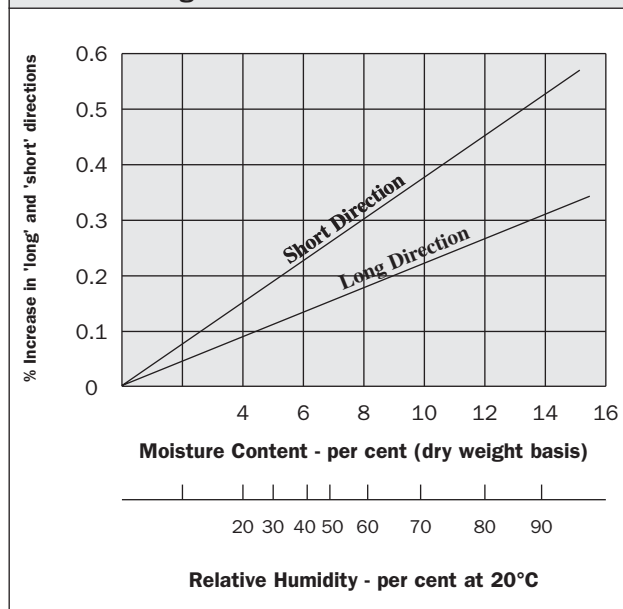
*Tested to ASTM D1037 - 72a

DESIGN CHARACTERISTICS

Moisture Content

Hardboard is factory conditioned before despatch. Like most wood based products, Hardboard is subject to the effects of humidity change.

Fig 3. Changes in Dimensions and Moisture Content Owing to Relative Humidity Changes in Hardboard Panels



Effects of Heat

Hardboard panels are combustible and must be separated from chimneys, fire places, flues and fuel burning appliances.

Fungal and Insect Attack

Hardboard is resistant to common forms of New Zealand Borer and is not prone to fungal attack provided the moisture content does not exceed 18% for prolonged periods.

Workability

Hardboard sheets are light to handle and can easily be cut with sharp wood working tools. The edges of sheets can be planed, bevelled and finished smooth. When cutting, keep panel face uppermost, unless using portable circular saw.

Hardboard strongly resists nail head pull-through.

Simple curves may be formed with Hardboard for larger radii, hit and miss sarking will provide adequate support.

Table 5 Guide to Simple Curves

Thickness (mm)	Bending Radii (mm)		
	450	500	600
4.75	S	H & M	H & M
6.0		S	H & M

S = Fully sarked

H & M = Hit and miss sarking

For tightly curved applications a solid backing is recommended. Wetting or heating of boards may also be necessary for tightly curved surfaces.

INSTALLATION

Timber Framed Walls & Ceilings

The framing timber must have a moisture content of less than 18% and battens must be machine gauged and kiln dried to 18% O.D.

Wall studs must be positioned at 600mm maximum centres for hardboard panels. Nogs or dwangs must be at maximum 800mm centres. Suitable sized ceiling battens should be spaced at 400mm maximum centres. Continuous support must be provided to all sheet edges.

Cut sheets to size, face down when using a portable circular saw, or face up when using a hand saw, held at a shallow angle.

Lining Masonry Walls

Hardboard should only be installed over adequately sealed and battened off dry concrete walls. Ventilation should be arranged to allow air to flow both in and out of the cavity.

Joinery Use

As a general rule, Hardboard panels should be continuously supported around the perimeter and have intermediate supports at not more than 600mm centres each way.

Fastening

Nailing

Use 25mm x 1.6mm plated panel pins spaced 150mm apart around the sheet perimeter and 200mm apart elsewhere. Do not nail closer than 12mm from sheet edges and allow about a 2mm expansion gap between each sheet. For wall fixing, initially hang each sheet clear of the floor by top nailing, then nail down the edge adjacent to the previous sheet and finally work across to the free edge.

Adhesive Fixing

Construction adhesive should be applied to the framing or existing wall surface in a continuous bead. In all cases, follow the adhesive manufacturer's instructions for application processes.

Jointing

A full range of PVC and aluminium mouldings are available. Consult your distributor on colours and range available locally.

Flooring Overlay

(For Covering with Sheet Vinyl)

Lay 4.7mm Hardboard panels (1200 x 1200 max. size) in brick bond pattern, starting in centre of room. Avoid joints directly above flooring joints. On timber use 25mm galvanised flat head nails. At sheet edges fasten 12mm from edge at 100mm centres. Fasten the body

of the sheet at 150mm centres. Allow 2mm between sheets, 3mm at room perimeter. Punch nails just below surface. Sand joints level. When laying on concrete and for best results on timber floors, use a full spread of adhesive. Consult your vinyl overlay supplier on choice of adhesives for laying. Oil tempered grade is especially recommended when the control of moisture is uncertain.

FINISHING

All Hardboard products can be painted or clear finished. Refer to paint manufacturer's instructions for recommended interior finishing.

HEALTH AND SAFETY

Health and Safety precautions must be taken when working with wood panel products.

- Exposure to wood dust may cause irritation to the eyes, respiratory system and skin, and may cause sensitisation resulting in asthma, and by skin contact resulting in dermatitis.
- Wood dust is a known carcinogen. Repeated inhalation of wood dust over many years may cause nasal cancer.
- 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.

- 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.

For further information and Safety Data information, please phone The Laminex Group Customer Services Department. ☎ 0800 800 080.

TECHNICAL SUPPORT

As not all product use options can be described herein, additional end use and specifying information is available as a complimentary service. For advice on technical matters please contact The Laminex Group Customer Services Department.

☎ 0800 800 080

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