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# MANUAL OF APPLICATION



METHODS OF PROCESSING PRE-LAMINATED BOARDS.



# PARTICLE BOARDS

Sharon Plywoods brings India a plethora of alternatives in particle boards through its new state of the art manufacturing facility at Gummidipoondi.

The Plain Particle Boards are engineered from wood. Specific sized wood-chips are used in making of boards, bonded by synthetic resin pressed under heat and temperature. The boards produced are denser and more uniform in their constitution as compared to plywood or general wood.



## INTERIOR PARTICLE BOARD

**GRADE – II, TYPE – II**  
**IS: 3087**

**Features:**

- ◆ Formaldehyde content below 30mg per 100gm of oven-dry boards.
- ◆ Excellent flexibility; useful in manufacture of furniture and allied products.

## EXTERIOR PARTICLE BOARD

**GRADE – I, TYPE – II**  
**IS: 3087**

**Features:**

- ◆ HMR grade; Humidity and Moisture Resistant.
- ◆ Intended for use in modular kitchen, wardrobe, walls and/or roofing.
- ◆ Swelling after 24 hours as against 2 hours, as specified in IS 3087.

## PRE-LAMINATED PARTICLE BOARDS

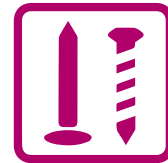
The Plain Particle Boards are manufactured through a rigorous process wherein they are laminated on both sides with a specially formulated MF resin (manufactured in-house) under high temperature and pressure in a fully-automated and advanced single day-light short cycle process. Choicest decorative papers sourced from renowned international paper manufacturers are used. The designs are numerous, ranging from natural wood grain to soothing pastel shades.

## PRE-LAMINATED MDF BOARDS

Pre-laminated MDF boards are high strength panels made from wood or lignocellulosic material which is refined into fibers and then re-constituted with a resin binder at elevated temperatures to form panels and are laminated with melamine impregnated base paper under heat and pressure to give a super smooth decorative finish.



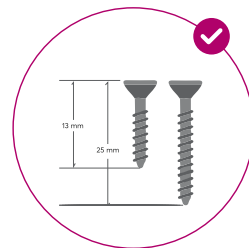
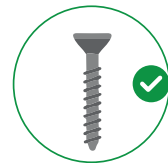
# WORKING WITH THE BOARDS



## SCREW APPLICATION

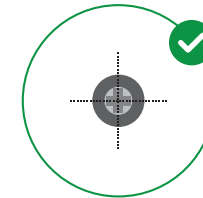
### SCREW TYPE

Fully-threaded parallel shank steel and Countersunk Recessed head parallel screws only. Special Particle board joinery fittings will also do.

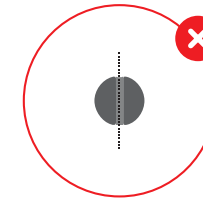


### SCREW LENGTH

The longer the better; more length of the screw imparts better holding power. For instance 25mm of screw is preferred over 13mm.



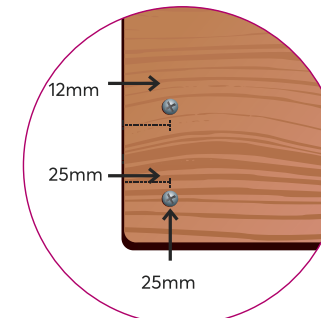
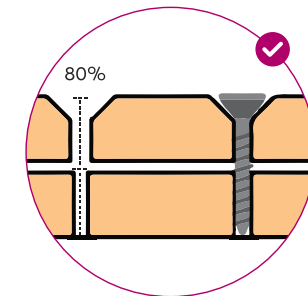
Countersunk Recessed Head



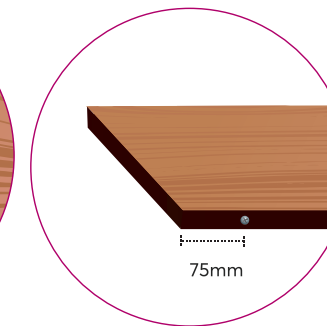
Countersunk Slotted Head

### DIMENSIONS OF PILOT HOLES

Should be approximately 80% of the screw core diameter and a minimum of 2mm beyond screw penetration depth.



Screws Position on panel face



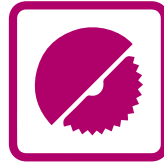
Screws Position on panel edge

### SCREW DIAMETER

Should be lesser than 20% of the panel thickness, so that the panel doesn't split when the screw is being driven into it.

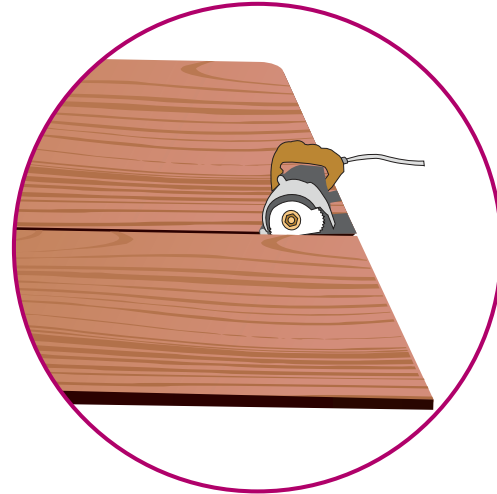
### SCREW-DRIVING LOCATION

Either on the face or on the edge. Ideal location should be farther than 25mm to the corner and 12 mm to the edge. Adjacent screws should be farther than 75mm from the end of the panel.



## MACHINING

- A wide variety of cutting operations can be carried out on Sharon Particle Boards ranging from sawing to boring and spindling.
- Owing to its consistency, it is advised that the rate of feed be slower than that for natural timber.
- The chipping determines the position of the saw. Saw must be raised in case of chipping on top face and lowered for the bottom face.
- Ensure that cutting edges are sharp enough for optimum results.
- Mechanical feeding is preferred for better and consistent results.



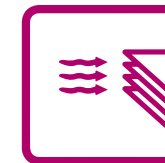
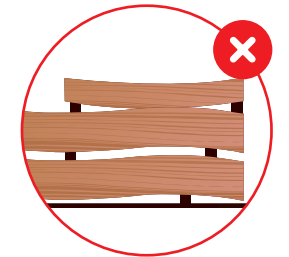
## EDGE SANDING

- Sanding of 120 to 380 grit is preferred for cut edges.
- Contour cutting of higher quality usually minimizes the amount of sanding required.



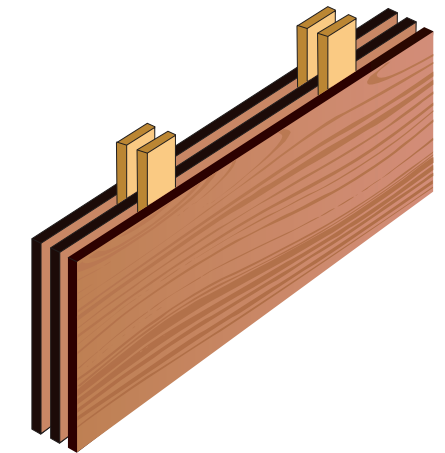
## STORAGE AND HANDLING OF PARTICLE BOARD PRODUCTS

- Storage area should be protected from the natural elements – sun, rain and wind on all sides.
- 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 750 mm where the packs are multiple stacked, and no further than 150 mm from the edge of boards.
- All supports should be vertically aligned.
- Work area must be kept clean.
- Contact with abrasive surfaces or grit must be avoided.



## CONDITIONING IN AIR

- Boards must be exposed in the room where they are to be fixed.
- The exposure should be long enough to allow them to reach a moisture content which is in balance with their surroundings and adjust their dimensions accordingly.
- Boards should be arranged loosely either vertically or horizontally to encourage free air circulation over all board surfaces.
- They should then be allowed to stand in this condition for a minimum of 48 hours.





# A BETTER CHOICE

## ADVANTAGES OVER TIMBER

- Particle board is less expensive when compared with solid timber.
- Particle boards are available in large flat sheets, which is a great advantage in manufacturing larger furniture.
- Not prone to warping and splitting unlike timber.
- More resistant to termites and borers when compared with timber.

## GETTING THE SIZES RIGHT

The common sheet sizes in India for particle board & MDF are:

- 9 foot x 6 foot or 2750 mm x 1840 mm
- 8 foot x 6 foot or 2440 mm x 1840 mm

Common plank widths that need to be cut from a full sheet of particle board for manufacturing furniture are 300mm, 450 mm, 600 mm and 900 mm. Also a 9 or 2750mm height board has distinct advantages over an 8 ft or 2440mm board:

- The extra length of the board makes up the small parts required for drawers and rails.
- Ceiling-high furniture such as wardrobes, library shelving and shop fitting can be created from single end panels that are up to 2750mm in height.

- Convenient ceiling-high end panels allows manufacturers to build one cabinet i.e. one on top of the other
- Reduced requirement of hinges, handles and edge banding, with added benefit of lower machining costs and labour expenses for assembly.

## SIZES THAT ACCOMMODATE YOUR PLANS.

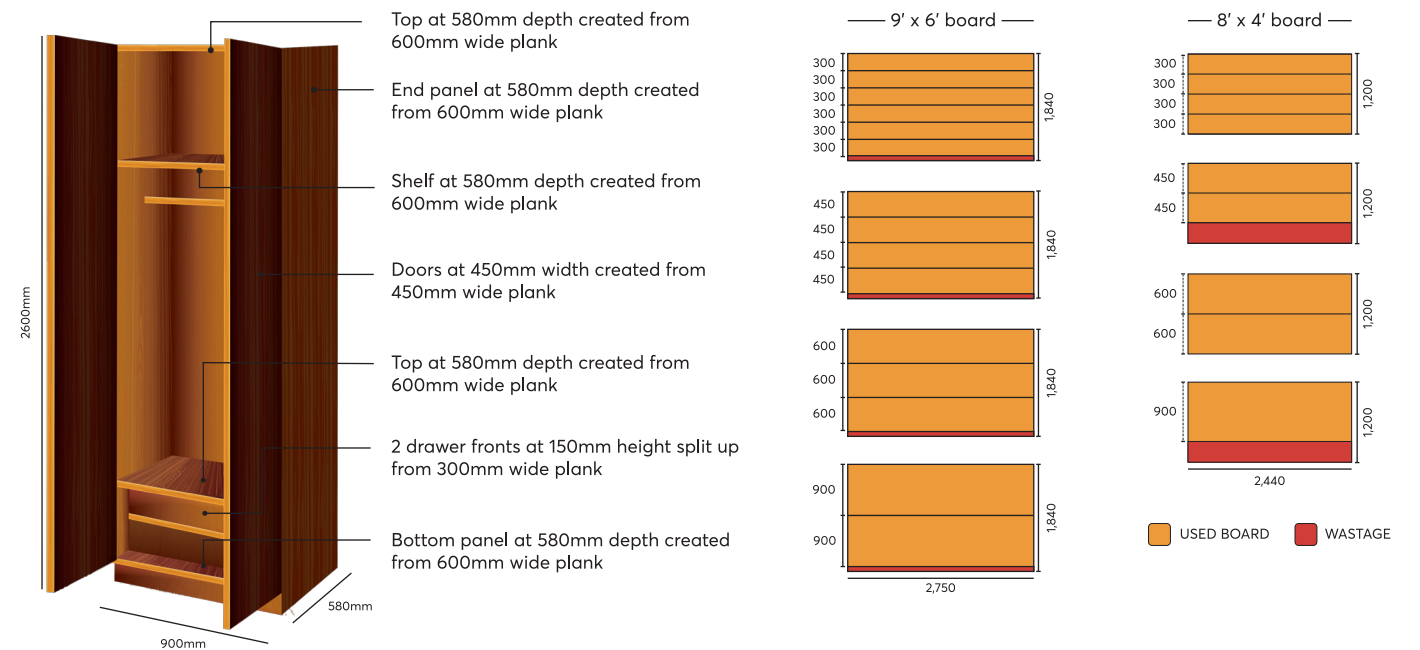
### GRADE - I - EXTERIOR PARTICLE BOARD

SIZES (FT)	9' X 6'			8' X 6'	
THICKNESS (MM)	9	12	16	18	25

### GRADE - II - INTERIOR PARTICLE BOARD

SIZES (FT)	9' X 6'	8' X 6'	6' X 4'	9' X 3'	8' X 3'	6' X 3'	
THICKNESS (MM)	9	11	12	15	17	18	25

## CABINET MADE USING 9' X 6' BOARD



## TECHNICAL DETAILS

## ABOUT SHARON PLYWOODS

TEST PROPERTIES	GRADE - I EXTERIOR PARTICLE BOARD		GRADE - II INTERIOR PARTICLE BOARD	
	SPECIFICATION AS PER IS 3087:2005	TEST RESULTS	SPECIFICATION AS PER IS 3087:2005	TEST RESULTS
Density	500 - 900 Kg/M <sup>3</sup>	616 Kg/M <sup>3</sup>	500 - 900 Kg/M <sup>3</sup>	611 Kg/M <sup>3</sup>
Density Variation	±10%	(+) 0.51 (-) 0.82	±10%	(+) 0.66 (-) 1.16
Moisture Content	5 - 15%	10.80%	5 - 15%	10.40%
Modulus of Rupture Avg. Min. Individual	15 N/mm <sup>2</sup> 13 N/mm <sup>2</sup>	15.6 N/mm <sup>2</sup> 15.4 N/mm <sup>2</sup>	11 N/mm <sup>2</sup> 10 N/mm <sup>2</sup>	15.8 N/mm <sup>2</sup> 14.9 N/mm <sup>2</sup>
Modulus of Elasticity Avg. Min. Individual	2500 N/mm <sup>2</sup> 2250 N/mm <sup>2</sup>	2571 N/mm <sup>2</sup> 2537 N/mm <sup>2</sup>	2000 N/mm <sup>2</sup> 1800 N/mm <sup>2</sup>	2621 N/mm <sup>2</sup> 2418 N/mm <sup>2</sup>
Maximum Linear Expansion Length Width	0.50% 0.50%	0.20% 0.24%	0.50% 0.50%	0.17% 0.21%
Thickness Swelling, 2 hr	8%	2.60%	12%	2.30%
Maximum Water Absorption After 2 hr After 24 hr	10% 20%	5.1 % 10.1 %	40% 80%	4.7% 9.8 %
Minimum Screw withdrawal Face side Edge (for thick > 12mm)	1250 N 850 N	2098 N 1079 N	1250 N 700 N	1977 N 1042 N
Tensile Strength Upto 20mm thick Above 20mm thick	0.45 N/mm <sup>2</sup> 0.40 N/mm <sup>2</sup>	0.65 N/mm <sup>2</sup> NA	0.30 N/mm <sup>2</sup>	0.46 N/mm <sup>2</sup>

Incorporated in 1987, Sharon Plywoods today holds the enviable distinction of being the first – and so far, the only manufacturer to have exported quality plywoods to Japan. This has been, in no small measure, possible due to the incredible quality consciousness that goes into creating durable plywood. The process adheres to the strict dictums of quality control and makes use of technology developed by the premier Wood Research Institute at the University of Kyoto. Our factory in Chennai boasts of state of the art equipment and makes use of eco-friendly processes – for which we were awarded the prestigious ISO 14001 certification. It is this integrity and commitment that allows us to provide your dreams the support they deserve.

### CERTIFICATIONS

#### ISO 9001: 2008

Sharon was the first plywood manufacturer in TN to have been awarded ISO 9002 certification, which has since been upgraded to ISO 9001 in 2000.

#### ISO 14001: 2004

For complying with international environmental norms in the manufacture and marketing of wood based products.

#### OHSAS 18001: 2007

Our Management System is in compliance with the standard Occupation Health and Safety Assessment Series for health and safety management systems.

#### CVI Certified Green Product

Our products are certified as GREEN PRODUCTS. Suitable for Green Building Projects (As per LEED Certification criteria).

#### CAPEXIL

For export of international quality products.

#### IHPA Certificate

Issued by the International Hardwood Products Association, USA. Covers aspects like workmanship, etc.