FAQs

Write a short note on the natural solid timbers available in market.

Solid timber is rapidly becoming scarce and expensive due to logging and the long periods of time it takes for most trees to grow. There are many different timbers on the market that range in price, characteristics and strength.

The two categories that timber can be put into are hardwoods and softwoods and the two can be defined by their differences in the woods microstructure which determines its density and strength.

This timber is an excellent choice for any sort of woodwork but if you want a good quality timber with minimum flaws, be prepared to pay a bit extra due to the reasons above. Cheaper timbers such as pine can be good but don't compare in aesthetics and quality to dearer timbers.

In my opinion solid natural timber is the best type of timber for cabinet making and furniture use because it has the best features and characteristics. Manufactured boards are also good but nothing compares to solid natural timbers.

What are the advantages and Disadvantages of Natural Solid Timber?

Advantages:

- It is the most aesthetically pleasing type of timber
- There are a vast amount of types for example Tasmanian oak, pine, Jara
- It is suitable for all woodwork joints
- Its long lasting
- There are a range of colours, textures and grains available
- Takes adhesives and finishes well

Disadvantages:

- Can be expensive
- Can be difficult to find the timber you are after
- Has natural defects such as knots
- Can warp, shrink, twist or swell

Explain “Loss in Conversion”.

The conversion of timber is a phrase usually used in reference to turning a log into a pile of boards/planks. This is done using a saw mill of some kind. There are several things that need to be taken into account when sawing up a log. It is important to take into account the taper (the difference in size between the two ends of the log). The size of the taper affects how a log needs to be cut up in order for the best use to be made of its timber. The size of the planks or boards that are needed, any heart rot or shakes (cracks) in the log and how round the log is, are also factors that affect how it should be sawn up to get the best use out of it.

When we consider the above mentioned factors during conversion of timber, wastage of timber is unavoidable. When compared to engineered timber products like plywood, the wastage of timber is more when converting timber to natural solid products. This wastage is known as “Loss in Conversion”.

The losses in conversion from logs to timber can be as much as the following, depending on the product.

Planks. Front round logs 40%—From square logs 30% Standings.

From round logs 50%—From square logs 40%

Note: Door frames are usually made from wood battens of size 75 mm in thickness and 100mm in width.

Explain the making of Plywood.

Wood Preparation

The plywood manufacturing process begins with processing the wood at the sawmill. When the raw logs are delivered to the mill, they are sorted, typically by size and species of tree. Plywood can be made with a large variety of types of wood. It is often made with pine, fir, cherry, oak and maple. The uncut logs are then treated with water. They may be soaked in hot water, exposed to steam or sprayed with hot water, depending on the setup of the particular mill. Following this log conditioning, the bark must be removed from the logs to accommodate the lathing process. Most mills employ a debarking machine for this process, which minimizes damage to the usable wood. The logs are then cut to a length appropriate the mill's lathe. The standard length is typically somewhere between 240 to 270 cm.

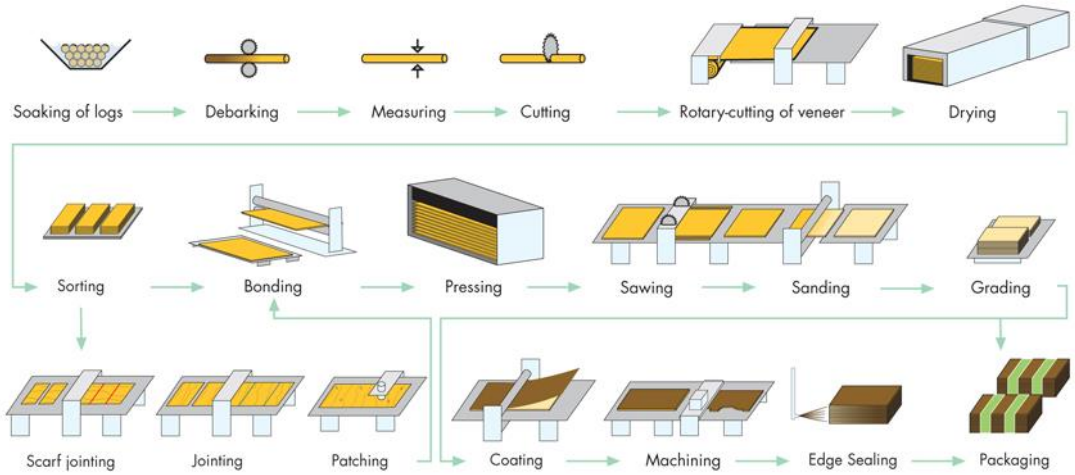
Veneer

The next phase of the plywood manufacturing process is veneer production. The logs which are, generally, still hot from the condition process are then placed in either a veneer lathe or a veneer slicer. The veneer is sliced off in one continuous piece. Typically, the veneer will then be rolled onto spools. The veneer will be trimmed to the appropriate size, which may be performed by hand or by a machine. The veneer, which is still green wood now, needs to be dried. Different mills are equipped differently, so the drying process can take two routes. The veneer may be air dried outdoors or may undergo a kiln drying process. The kiln is usually a closed system in which the temperature is constantly controlled to remove water from wood.

Assembly

The final phase of the plywood manufacturing process is the actual assembly of the plywood. The veneer is glued along the edges to form larger sheets of the veneer for use in plywood production. Large sheets are then applied with an adhesive and stacked. On the outer layers, the grain runs the length of the sheet. The grain of the individual sheets alternates on the interior. The larger glued sheets are then run through a press (most of which are heated) to dry the glue. Finally, the wood is subsequently trimmed, sanded if and as necessary and graded for quality.

FIGURE SHOWING PLYWOOD MANUFACTURING:



MCQs

1. In which of the following directions, the strength of timber is maximum?
   - parallel to grains
   - 45° to grains
   - perpendicular to grains
   - same in all directions
2. Plywood has the advantage of
   - greater tensile strength in longer direction
   - greater tensile strength in shorter direction
   - same tensile strength in all directions
   - None of the above
3. Plywood is made by bonding together thin layers of wood in such a way that the angle between grains of any layer to grains of adjacent layers is
   - 0°
   - 30°
   - 45°
   - 90°
4. Match the following

NATURAL SOLID TIMBER	SIZE
A. Plank B. Batten C. Board	1. Thickness: 30-50mm; Width: less than 175mm; 2. Thickness: less than 50mm; Width:greater than 125mm; 3. Thickness: 50-150mm; Width:greater than 275mm

   a. A-1; B-2; C-3
   b. A-2; B-3; C-1

c. A-3; B-1; C-2
d. A-3; B-2; C-2

5. Plywood is made up of
   Wood chips
   Layers of Veneers
   Wood fibres
   All of the above

WEBLINKS

http://www.madehow.com/Volume-4/Plywood.html

GLOSSARY

Green timber: the freshly felled tree which has not lost much of its moisture

Converted timber: the timber when sawn into various market sizes like beams, battens, planks etc.

Engineered timber: Engineered wood, also called composite wood, man-made wood, or manufactured board, includes a range of derivative wood products which are manufactured by binding or fixing the strands, particles, fibres, or veneers or boards of wood, together with adhesives, or other methods of fixation to form composite materials.

Structural timber: Timber used in framing and load bearing structures

Clear timber: Timber clear from defects and blemishes.