



Plywood Manufacturing Process

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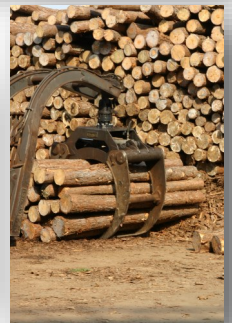
Raw Material:

A large variety of species can be used to make plywood to the applicable standards. Forest types vary throughout North and South America. Species have been grouped into classes, and this information may be needed on the TP Stamp.



Log Yard Stock:

A certain volume of log yard stock is needed to keep the veneer species and quality distribution consistent.



Log Storage:

Depending upon the area and the type of storage facilities available, logs are either piled dry and kept wet by continuous or intermittent water spray, or are stored in freshwater ponds. Dry land storage of logs under sprinkler systems must give complete coverage of the log piles, and must be kept in continuous operation during high temperatures and humidity in order to minimize fungal growth, and to prevent drying out and degradation.



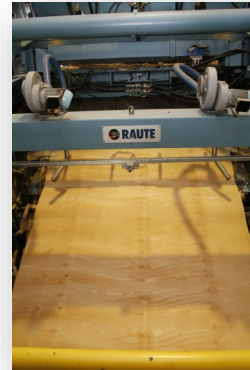
Log Conditioning:

The logs are conditioned using steam or hot water to improve peel quality.



Lathe:

A sharp blade peels the log now called a block into continuous sheets of veneer. All veneer has a tight and loose side. The side against the pressure bar is the tight side, sometimes referred to as the bark side. Since veneer is bent at the knife-edge, it has a tendency to split or check. These are known as lathe checks and occur on the underside, or loose side, where the knife separates the veneer from the block.



Dryers:

Green veneer is dried in steam or gas heated dryers. The purpose of drying is to reduce the moisture content of the stock to a pre-determined percentage, and to produce flat and pliable veneer.



Lay-Up:

Plywood is a flat panel built up of sheets of veneer called plies, united under pressure by a bonding agent to create a panel with an adhesive bond between plies as strong or stronger than the wood. Plywood is constructed with an odd number of layers with grain of adjacent layers perpendicular. Layers consist of a single ply or two or more plies laminated in the parallel grain direction. The veneers are coated with water-proof glue and laid up in sandwiches.



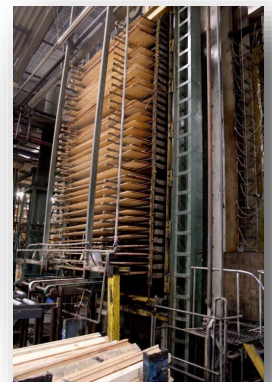
Pre-Press:

Prior to hot pressing most mills pre-press loads when they are discharged from the gluing operation. The pre-press flattens the veneers and transfers the adhesive to the uncoated sheets. The load is held under pressure for several minutes to develop consolidation of the veneers. The primary purpose for the pre-press is allow the wet adhesive to “tack” the veneer together to permit easier shifting of veneers when loading.



Hot Pressing:

The veneer sandwiches are subjected to heat and pressure in the hot press until the glue is cured. Hot pressing cures most synthetic resins adhesives. In hot pressing it is absolutely necessary to load, close to the press and apply full pressure as quickly as possible. The goal of hot pressing is for the center glue line to reach the needed curing temperatures, and for it to remain at that temperature until the bond is strong enough to be handled.

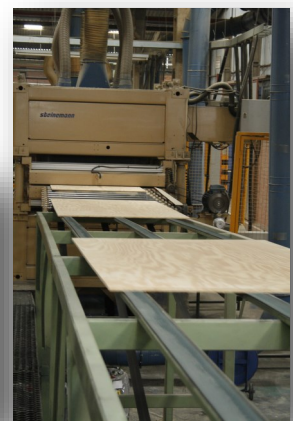
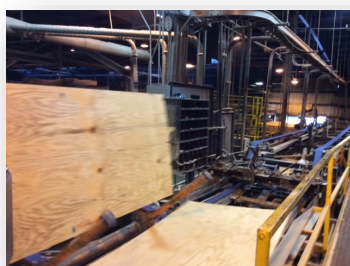


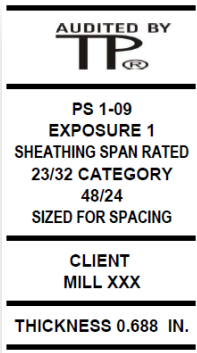
Trimming Plywood:

Trimming Plywood: After pressing, the plywood panels are trimmed, squared and selected for grades.

Sanding, Grading, and Repairing Plywood:

Before sanding any further patchwork should be done. Repaired panels have to be given a final grade once they are finished. Many panel grades must be sanded to fulfill the requirements of their ultimate end use.





TP Trademarking:

Once a panel has been graded it should receive its grade stamp.

Warehouse and Shipping:

Each load should be supported on at least three separators. The separators should be of a length no longer than the load width. Care should be taken when loading the panel bundles onto boxcars or trucks. Panels should arrive at the customer's door in the same condition that the grader last saw them.



TP "Inspector in the Mill":

Plywood samples are randomly selected on a daily basis and tested in a TP Laboratory located at the mill. Additional periodic testing is completed at the Conyer's GA laboratory.



Test Reports are compiled and electronic reports are circulated. The "Audited by TP" mark is an assurance to consumers that our plywood meets the high quality standards established by the industry, and that it will perform in a satisfactory and predictable manner. Only plywood manufactured by member companies of Timber Products Inspection are licensed to use this stamp.

