

BLOCKBOARD FROM OIL PALM TRUNK

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In the process of veneer peeling for the manufacture of plywood, lumbercores of diameter between 15 to 20 cm were produced. These lumbercores represent more than 30% of the logs in plywood manufacturing industries. To reduce the loss and to encourage efficiency of the logs, the lumbercores are converted into blockboard. Over the years, blockboard has become recognized as an industry in its own right alongside plywood and obtained a niche in the low-end furniture industries.

With the technical advancement of the rotary lathe machine and introduction of the spindleless lathe machine, the efficiency of veneer peeling has tremendously improved and the lumbercore size has been reduced to 5 cm diameter. These small lumbercores are no more suitable for the production of blockboard. Without the supply of lumbercore, the industry utilizes rubberwood as raw material but finds itself competing directly with the more profitable rubberwood dimension lumber production and solid rubberwood furniture industries. With the limited supply of logs and campaign against the cutting of tropical forest in consumer countries, both blockboard and plywood are now becoming sunset industries.

Oil palm trunk has been found to be a suitable alternative for the blockboard industry. With over 3.5 million hectares of oil palm plantations, the supply of oil palm logs will be sufficient to support not just the blockboard but the plywood industry as well. The commercial utilization of oil palm logs will revive the blockboard industry and regain access to the world market because oil palm wood is GREEN.

MANUFACTURING PROCESS

Oil palm, being a monocotyledonous species, has different wood anatomy and properties compared to ordinary wood species. Therefore, it requires different treatment processes compared to ordinary wood, especially in the drying to obtain optimum results. The oil palm blockboard is shown in Figure 1 and the process of manufacturing it is shown in Figure 2.



Figure 1. Blockboard from oil palm trunk.

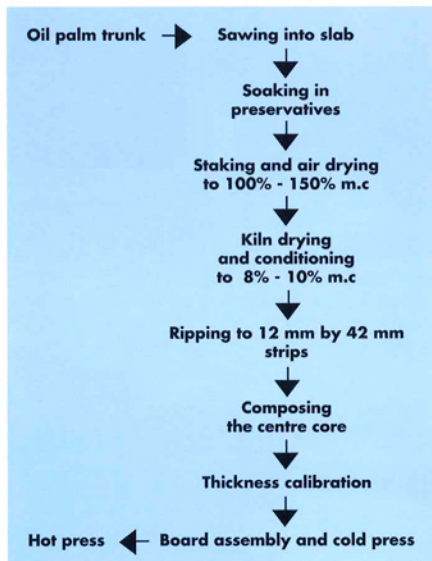


Figure 2. Processing of oil palm blockboard.

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CHARACTERISTICS

The mechanical properties of oil palm blockboard are shown in *Table 1*. It is lighter and easier to nail and screw compared to ordinary blockboard; therefore, it is highly suitable for the furniture and interior paneling industries.

TABLE 1. PROPERTIES OF OIL PALM BLOCKBOARD

Mechanical properties	
Density (kg m ⁻³)	540.00
Modulus of elasticity (Mpa)	26.59
Internal bond (Mpa)	0.60
Screw withdrawal (N)	
Tangential	641.46
Radial	494.13
Longitudinal	466.61

ECONOMICS

Depending on the size, length and form of the oil palm trunks, a range between 15 and 20 m³ of blockboards valued between RM 8000 and RM 15 000 can be produced from 1 ha of plantation. The production cost would be between RM 600 to RM 700 m⁻³. Most of the oil palm blockboards are exported overseas.

The commercial utilization of oil palm in the blockboard industry will overcome the shortage of timber logs in this industry. Since oil palm is GREEN, the blockboard from oil palm wood should also receive world acceptance. The use of oil palm logs in this panel industry would revive not just the blockboard but also the ailing plywood industry as well. For the oil palm industry, it will provide an avenue for profitable disposal of the millions of trunks from replanting and help the environment by saving the forest and reduce the use of insecticides to prevent insects from breeding in these trunks.

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