

**PROPERTIES OF LOW DENSITY PARTICLEBOARD MADE FROM OIL
PALM TRUNK (OPT)**

By

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CANDIDATE'S DECLARATION

I declare that final project report entitled "**Properties of Low Density Particleboard Made from Oil Palm Trunk**" is my own work conducted under the advisor Mrs. Nurrohana binti Ahmad from Department of Wood Industry.

I further declare that, to the best of my knowledge for the final Year project report does not contain part of the work which has been submitted for the award of any other degree or diploma in this situation or any other institute or university without proper citation.



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ABSTRACT

PROPERTIES OF LOW DENSITY PARTICLEBOARD MADE FROM OIL PALM TRUNK (OPT)

The objective of this work is to evaluate both physical and mechanical properties of particleboard panels manufactured from oil palm (*Elaeis guineensis*) trunks. Besides that, this work also to determine the effect of the different resin content (8%, 10% and 12%) and additional wax (0% and 1%) on the physical and mechanical properties of the board. Modulus of Rupture (MOR), Modulus of Elasticity (MOE), Internal Bonding Strength (IB), Thickness Swelling (TS), Water Absorption (WA) and density of the samples were tested based on Japanese Industrial Standards (JIS A: 5908-2003). Oil palm trunk particleboard made with highest adhesive content give the highest modulus of rupture (MOR), modulus of elastic (MOE) and internal bonding (IB) strength values of 5.80 MPa, 894.73 MPa and 0.07 MPa respectively. Whereas, thickness swelling and water absorption result increase due to the higher urea formaldehyde (UF) adhesive content and additional wax (1%). Additional of wax on the particleboard decreased the mechanical properties but increase in the physical properties of the particleboard.

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