

**ORIENTED STRAND BOARD FROM *Acacia mangium* AND
Neolamarckia cadamba (KELEMPAYAN) IN RELATION TO
TEMPERATURE AND PRESSURE**

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ABSTRACT

Oriented Strand Board from *Acacia mangium* and *Neolamarckia cadamba* (Kelempayan) in Relation to Temperature and Pressure

Three - layered composite oriented strand boards were manufactured with different type of temperature and pressure in order to determine the mechanical and physical properties of oriented strand board by using *Acacia mangium* and *Neolamarckia cadamba* (Kelempayan) as raw materials. The OSB were manufactured with the temperature of 165 °C and 175 °C and also the pressure of 60 kg/cm², 70 kg/cm² and 90 kg/cm². Other treatments such as density of 800 g/cm³ with the ratio of 80% *Acacia mangium* and 20% *Neolamarckia cadamba* (Kelempayan) and 7% of resin content using the phenol formaldehyde (PF) were held constant. The OSB made were tested for modulus of rupture (MOR), modulus of Elasticity (MOE), internal bonding (IB) and thickness swelling (TS) according to the European Standard (EN). Generally, the mechanical and physical properties of OSB can be improved as the temperature increase but pressure does not show any significant effect. The temperature treatment provided significant effect on the physical properties but not significant on the mechanical properties while the pressure treatment providing improved physical properties and not significant on the mechanical properties.