PARTICLEBOARD PROPERTIES FROM 3 YEARS OLD PETAI BELALANG

By

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I declare that the work in this thesis was carried out in accordance with the regulation of University Technology MARA . It is original and is the result of my work ,unless otherwise indicated or acknowledgment as reference work. This thesis has not been submitted to any other academic institution or non-academic institution for any other degree or qualification .

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ABSTRACT

Particleboard Properties from 3 years old Petai belalang

(*Leucaena leucocephala*)

The growing demand for wood-based panels has led to continuous efforts to find new resources as alternative raw materials without depending on the decreasing supply of rubberwood. Petai belalang, or Leucaena leucocephala, was chosen in the manufacture of particleboard with urea-formaldehyde (UF) resin as a binder. The boards were produced at three density levels of 500, 600 and 700 kg m^{-3} with 12% of resin content. This study evaluated the mechanical and physical properties of the petai belalang particleboard. The tests were conducted according to European standards. The mechanical properties tested were modulus of rupture (MOR), modulus of elasticity (MOE) in bending and internal bond (IB). Thickness swelling (TS) and water absorption (WA) were tested for physical properties. Results indicated that the strength properties of the boards improved with increased board density. Particle board with density of 700 kg m^{-3} met part of the strength requirement, which suggests a possible application of this board in the production of furniture components.

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