

**MECHANICAL AND PHYSICAL PROPERTIES OF  
PARTICLEBOARD FROM PLYWOOD EDGE TRIMMING**

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## ABSTRACT

### MECHANICAL AND PHYSICAL PROPERTIES OF PARTICLEBOARD FROM PLYWOOD EDGE TRIMMING WASTE

This study investigates the potential of edge trimming waste as a raw material for manufacturing particleboard. The edge trimming were recycle wood and this wood used to manufacture panel for three different resin content (8, 10, 12%) and two density (600, 700 kg/m<sup>3</sup>). The influences of resin content and density on mechanical and physical properties of particleboard manufactured were determined. The experimental panels were tested for their mechanical strength including modulus of rupture (MOR), modulus of elasticity (MOE), internal bonding (IB) and physical properties which is thickness swelling (TS) and water absorption (WA) were determine based on British European (BS EN) standard. For the result of mechanical properties, the MOR and MOE did not satisfy the minimum of MOR and MOE standard. Range of MOR for particleboard is 2.96 to 7.99 MPa and it not satisfied the minimum standard which is 15 MPa and range for MOE is 689 to 1675 MPa and it also not satisfied the minimum standard which is 2050 MPa. While for IB, it is achieve the requirement of standard which is 0.45 MPa. For the physical properties, the TS did not satisfy the maximum requirement of standard which is 14%. Range for TS is 64.58 to 37.80% and it not achieves the maximum standard. Mechanical and physical properties strength of particleboard were increased toward density of board and resin contents used were increased.