

**PROPERTIES OF PARTICLEBOARD MADE FROM RECYCLE
BOARD AND WOOD SLABS**

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ABSTRACT

PROPERTIES OF PARTICLEBOARD MADE FROM RECYCLE BOARD AND WOOD SLABS

An experimental exploration was performed and applied to determine the mechanical and physical properties of particleboard made from recycle board and wood slabs. Also to study the effects of difference wood composition and resin content on board properties. The target board density was set at 700 kg m^{-3} . The mechanical (bending test and internal bonding test) and physical (thickness swelling test) properties of the homogenous laboratories particleboard were evaluated. From this study, it showed that there is the interaction between wood composition and particle sizes found the effects bulk density significantly. Meanwhile wood compositions have significance difference between each material. Mix wood composition with 12% resin content showed better bending properties, while board produced from recycle board with 12% resin content also give the better internal bonding (IB). The lowest reading in thickness swelling (TS) are recycle board with 10% resin content. All wood composition and resin content exceed the minimum requirement for mechanical properties excepted for TS does not meet the minimum requirement. Furthermore, the summary of analysis of variances (ANOVA) on the effects of wood composition, resin content and interaction with board properties are appear to have significant effects except modulus of rupture (MOR) properties. Board evaluation test were conducted by followed the European Union standard BS EN: 1993.