

Effect of Pressing Pressure on Mechanical Properties of *Elaeis guineensis* Jacq. Fronds-Based Composite Board

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Abstract : Experimental composite boards were fabricated using oil palm (*Elaeis guineensis* Jacq) fronds particles by applying hot press pressure of 5MPa, 6MPa and 7MPa respectively. Modulus of rupture (MOR) and internal bond strength (IB) of the composite boards made with target density of 0.80 g/cm³ were evaluated. Composite board fabricated under hot press pressure of 5MPa had MOR and IB values of 16.27 and 4.34 N/mm² respectively. Corresponding values for composite board fabricated under hot press pressure of 6MPa were 16.76 and 5.41 N/mm² respectively. Whereas, the MOR and IB values of composite board fabricated under hot press pressure of 7MPa were 17.24 and 6.19 N/mm² respectively. All composite boards met the MOR and IB requirement stated in Japanese Industrial Standard (JIS). Based on results of this work, the strength of mechanical properties of composite board increased with increase of hot press pressure. This study revealed that the selection of applied pressure during fabrication of composite board is important to improve mechanical properties of composite boards.

Keywords : composite board, *Elaeis guineensis* Jacq. Fronds, hot press pressure, mechanical properties

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