

**EFFECT OF VARYING RESIN CONTENT AND BOARD
DENSITIES ON THE PROPERTIES OF THREE LAYERS
PARTICLEBOARD FROM KELEMPAYAN.**

TUAN MOHD FAKRUL RAZIE B. TUAN ISMAIL

Thesis submitted in partial fulfillment of the requirements for
**Degree of Bachelor of Science (Hons.) Bio-Composite
Technology in the Faculty of Applied Sciences
Universiti Teknologi MARA**

JANUARY 2015

CANDIDATE'S DECLARATION

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Name of candidate : **TUAN MOHD FAKRUL RAZIE B TUAN ISMAIL**

Candidate's ID No : 2011362507

Programme : Bachelor of Science (Hons.) Bio-Composite Technology

Faculty : Faculty of Applied Science

Title : Effect of varying resin content and board densities on the properties of three layers particleboard from Kelempayan.

Signature of Candidate :

Date : 23 JANUARY 2015

ABSTRACT

The aim of this study was to investigate the use of Kelempayan species in manufacturing three layer particleboard panels. The boards were fabricated with three different densities (500 kg/m^3 , 600 kg/m^3 and 700 kg/m^3). The sample also has different type of the resin content (8 %, 10 % and 12 %). The boards produced was evaluated for its modulus of rupture (MOR), modulus of elasticity (MOE), internal bond (IB), water absorption (WA) and thickness swelling (TS) in accordance with the Japan industry Standards (JIS) A 5908:2003. The result show passed standard value based on JIS A 5908:2003 Type 13 for mechanical properties is density 600 kg/m^3 with resin 12 %, the result shown in MOR (14.94 MPa) and IB (0.29 MPa). For density 700 kg/m^3 with resin 8 % and 10 % only pass in MOR and IB but for resin 12 %, the all mechanical properties passed the standard value of JIS. For physical properties, only pass in thickness swelling (11.90 %) with density 600 kg/m^3 and 12 % resin content. It is concluded that the boards with the density of 700 kg/m^3 were able to fulfill the Japan Industry Standards specifications.

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