

**PROPERTIES OF CEMENT BOARD MADE FROM VARIOUS SIZES OF OIL
PALM TRUNK STRANDS**

BY

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**This Project Report Submitted in Partial Fulfillment of the Requirements
for Bachelor of Sciences (Hons.) Furniture Technology
In The Faculty of Applied Sciences
Universiti Teknologi MARA**

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Date : January 2016

ABSTRACT

THE PROPERTIES OF CEMENT BOARD MADE FROM VARIOUS SIZES OF OIL PALM TRUNK STRANDS

Wood cement board (WCB) is a combination of organic and inorganic material, wood with cement. For this experiment WCB use oil palm strands as organic material and Portland cement as the inorganic material. The aims of this experiment were to determine the physical and mechanical properties of the cement board of different densities using oil palm strands with different size. For this experiment the WCB dimension was 450mm x 450mm x 12mm. The additive component used in WCB was aluminum sulphate (1.5%) and sodium silicate (3%). The tests done were bending strength (modulus of elasticity (MOE) and modulus of rupture (MOR)), water absorption, thickness swelling and screw withdrawal. The results showed that the WCB with density of 1300kg/m³ have higher mechanical strength than 1100kg/m³ and 900kg/m³ boards. As for the study of water absorption (WA) board with a density of 900kg/m³ with size of 30mm have highest absorption compared to others. The best mechanical strength was for density 1300kg/m³ with 50mm strand size with MOE 1315.6 MPa and MOR 4.6 MPa.

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