

**INFLUENCE OF PARTICLE SIZES IN  
HOMOGENOUS AND HETEROGENEOUS WOOD  
CEMENT BOARD PROPERTIES MADE FROM  
*Acacia mangium***

**BY**

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## ABSTRACT

### **Influenced of particle sizes in homogenous and heterogeneous wood cement board properties made from *Acacia mangium***

Wood-cement board (WCB) is a panel product that has the advantages of inorganic and organic materials. However, the main problems affecting the manufacture and use of WCB are the inhibitory effects of wood on the setting of cement and the high specific gravity of the final product. This paper examines the potential and the use of particle sizes used and board layer that was use to facilitate the production of a WCB from *Acacia mangium*. Wood cement boards (WCB) were manufactured with wood/cement (w/w) ratio of 1:3, target density is  $1300\text{kg m}^{-3}$  and  $\text{Al}_2(\text{SO}_4)_3$  and  $\text{Na}_2\text{SiO}_3$  content as chemical additives is 3.0%. Besides that, WCB also manufactured with the layer (homogenous and heterogeneous). The WCB were tested for static bending (MOR and MOE) properties in parallel and perpendicular directions; internal bond (IB), thickness swelling (TS) and water absorption (WA).

## TABLE OF CONTENT

	<u>Page</u>
APPROVAL SHEET	i
CANDIDATE'S DECLARATION	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENT	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT	x
ABSTRAK	xi

### CHAPTER 1

1.0	Introduction	
1.1	Background of study	1
1.2	Problem statement	2
1.3	Justification of study	2
1.4	Significance of study	3
1.5	Limitations of study	3
1.6	Objectives of study	4

### CHAPTER 2

2.0	Literature review	
2.1	Overall view of <i>Acacia mangium</i>	5
2.2	Properties of wood cement board	7
2.2.1	Utilization	7
2.2.2	Fungus and termites resistant	8
2.2.3	Workability	8
2.2.4	Fire resistance	8
2.3	Uses	8
2.3.1	Permanent work	8
2.3.2	Partition and wall	9

2.4	Raw material supply	9
2.4.1	<i>Acacia mangium</i>	10
2.4.2	Rubberwood	11
2.5	Factor affecting board properties	11
2.5.1	Cement ratio	11
2.5.2	Particle sizes	12
2.5.3	Additives	12

### CHAPTER 3

3.0	Materials and methods	
3.1	Field procedure	13
3.2	Materials preparation	13
3.2.1	Debarking	13
3.2.2	Chipping process	13
3.2.3	Flaking process	14
3.2.4	Screening process	14
3.3	Wood cement board making process	14
3.3.1	Blending process	14
3.3.2	Mat forming	15
3.3.3	Pre pressing	15
3.3.4	Cold press	15
3.3.5	Clamped	15
3.3.6	Hardening chamber	16
3.3.7	Board cutting	16
3.4	Boarding evaluation	17
3.5	Determination of flexural strength	17
3.6	Determination of thickness swelling	18
3.7	Determination of water absorption	18
3.8	Determination of internal bonding	19