

**MECHANICAL AND PHYSICAL PROPERTIES OF *Acacia Mangium* spp  
FOR WOOD CEMENT BOARD RELATION TO PARTICLE SIZE AND  
CEMENT RATIO**

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## **ABSTRACT**

### **Mechanical and Physical properties of Acacia Mangium for wood cement board relation to particle size and cement**

This research was performed to determine the properties of wood cement board (WCB) made from *Acacia mangium* Wood. The different wood of particle size (0.5mm, 1.0mm and 2.0mm) and Wood cement ratio (1:25 and 1:30) was applied. The target of board density was 1300kg m<sup>3</sup>. The physical (water absorption test and thickness swelling) and mechanical (bending test and internal bending test) properties of the WCB were evaluated. From the research, it showed that there is no significant different in physical and mechanical properties of WCB except for internal bonding in different test using the particle size. The result for modulus of rupture (MOR), water absorption and thickness swelling meet the requirement standard of MS544:2001. The application of different wood cement ratio also showed same result pattern, where there is different no significant for all testing. However wood cement ration 1:2.5 force feeds better (MOR) then compared to 1:3.0. Higher content cement causes a general decrease in MOR, WA and TS.

*Keyword: Acacia mangium wood*

## TABLE OF CONTENTS

	<u>Page</u>
APPROVAL SHEET	ii
CANDIDATE DECLARATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLE	viii
LIST OF FIGURE	ix
LIST OF PLATES	x
LIST OF ABBREVIATIONS	xi
ABSTRACT	xii
ABSTRAK	Xiii

### CHAPTER 1

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

### CHAPTER 2

2.0	Literature Review	
2.1	Malaysia timbers	5
2.1.1	Categories of Malaysian timbers	5
2.1.2	Timber plantation	6
2.2	Rubberwood	6
2.2.1	Acacia( <i>Acacia mangium</i> spp)	7
2.2.2	Plantation distribution	7
2.2.3	Physical and mechanical Properties of <i>Acacia mangium</i>	7
2.2.4	Uses of <i>Acacia mangium</i>	8
2.3	Wood composite product	8
2.3.1	Wood cement board	9
2.3.2.1	Workability	11
2.3.2.2	Fungus and termites resistant	12
2.3.2.3	Sound insulation	12
2.3.2.4	Health safety	12
2.3.2.5	Fire resistance	12
2.3.2.6	Utilization	13
2.3.3	Uses of wood cement board	13
2.3.3.1	Partition and wall	13
2.3.3.2	Permanent formwork	13

2.3.3.3	Fire safety requirements	14
2.4	Factors affecting board properties	14
2.4.1	Particle sizes	14
2.4.2	Additives	15
2.4.3	Cement ratio	16

### CHAPTER 3

3.0	Material & Methods	
3.1	Raw material	17
3.2	Material preparation	
3.2.1	<i>Accacia mangium spp</i>	17
3.2.2	Chipping process	18
3.2.3	Flaking process	18
3.2.4	Screening process	19
3.3	Wood cement board making	
3.3.1	Board making process	19
3.3.1.1	Blending process	20
3.3.1.2	Mat forming	21
3.3.1.3	Pre pressing	21
3.3.1.4	Cold press	22
3.3.1.5	Clamped	23
3.3.1.6	Hardening chamber	23
3.3.1.7	Curing time in curing tank	24
3.3.1.8	Board cutting	24
3.4	Board evaluation	25
3.4.1	Determination of flexural strength	25
3.4.2	Determination of internal bonding	26
3.4.3	Physical testing in WCB board	27
3.4.3.1	Determination of flexural Strength	27
3.4.3.2	Thickness swelling	27
3.5	Flowchart of manufacturing of WCB	28
3.6	Experimental design	29

### CHAPTER

4.0	Results & Discussion	
4.1	Introduction	30
4.2	Physical and mechanical properties of WCB	31
4.3	Statistical analysis	32
4.4	Effect of particle sizes on the physical and Mechanical properties of WCB from <i>Acacia mangium</i>	33
4.5	Effect of particle sizes on the physical and Mechanical properties of WCB from <i>Acacia</i>	33