

**EFFECT OF RESIN CONTENT ON THE PROPERTIES OF
ORIENTED STRAND BOARD FROM LUDAI**

By

MOHD HAFIZ BIN MUSA

**Final Project Submitted in partial Fulfillment for the Diploma In Wood
Industry, Faculty of Applied Science
Universiti Teknologi MARA
Pahang Darul Makmur
APRIL 2003**

ACKNOWLEDGEMENTS

First of all, I would like to express my thankfulness to ALLAH s.w.t. to bless me to accomplish my final project and provide me life, health and acknowledgement. Without it, may be I cannot accomplish the task this semester.

Then I would like to say thank you to my parent who always support me from behind and pray for my successful. By hook or by crook I will pay back their sacrifice they have done to me. I am proud to have parents like you.

Next the thanks go to my advisor, Professor Madya Dr. Jamaludin Kasim, who helps me to finish this paper project. He also provided some information where I cannot get in library. It is my honor to be an advisee under an experienced person in Wood Industry

Last but not least, to my fellow friends. They give me encouragement to finish this paper project. They are very helpful friends in whatever case. I will appreciate all your motivations that you have given to me. Thank you to everybody and may ALLAH bless all of you.

TABLE OF CONTENT

		Page
PROJECT TITLE		ii
APROVAL SHEET		iii
DEDICATION		iv
ACKNOWLEDGEMENTS		vi
LIST OF TABLES		ix ^{viii}
LIST OF FIGURES		x ^{ix}
LIST OF PLATES		xi ^x
LIST OF ABBREVIATIONS		xii ^{x¹}
ABSTRACT		xiii ^{xⁱⁱ}
ABSTRAK		xiv ^{xⁱⁱⁱ}
CHAPTER		
I	INTRODUCTION	1
	1.1 Problem Statement.....	2
	1.2 Objective.....	3
II	LITERATURE REVIEW	4
	2.1 Ludai	4
	2.2 General properties of Oriented Strand Board.....	4
	2.3 Oriented Strand Board.....	5
	2.4 Phenol Formaldehyde.....	7
III	METHODOLOGY	9
	3.1 Material and methods.....	9
	3.2 OSB manufactured.....	10
IV	RESULT AND DISCUSSION	15
	4.1 Strength and physical properties.....	15
	4.2 Effect of resin content on MOR and MOE.....	16
	4.3 Effect of resin content on T.S and W.A.....	18
V	CONCLUSIONS AND RECOMMENDATIONS	20
BIBLIOGRAPHY		21

APPENDIX

A	Material and glue calculations.....	22
B	Results of strength properties.....	23
C	Results of physical properties.....	25
D	Malaysian standard for OSB.....	27

VITA	32
-------------	-------	----

ABSTRACT

EFFECT OF RESIN CONTENT ON THE PROPERTIES OF ORIENTED STRAND BOARD FROM LUDAI

By

MOHD HAFIZ BIN MUSA

APRIL 2003

Oriented strand board (OSB) production in Malaysia is still at its fancy. In United States and Canada, OSB was well accepted for construction purpose. Today, OSB panels are recognized for the same uses as plywood. But in Malaysia OSB is not quit popular. In this study, Ludai (*Sapium Baccatum*) was used as raw material for the manufacture of OSB. Ludai are grown widely in large area in Malaysian's forest. Currently, the Ludai species is underutilized. This is because Rubberwood are still used as raw material in wood panel products. Somehow Rubberwood will decrease. So Ludai will be the substitute to the Rubberwood. In this study, the effect varying resin content of Ludai OSB on some strength and physical properties was studied. In general, the strength properties [modulus of rupture (MOR) and modulus of elasticity (MOE)] increased with increase in resin content. The physical properties [thickness swelling (TS) and water absorption (WA)] generally improved with increase in resin content.