

PROPERTIES THREE LAYER OF
PARTICLEBOARD FROM *Gliricidia sepium*

NORAINI BT. IBRAHIM • GHAZALI

DIPLOMA IN WOOD INDUSTRY
UNIVERSITI TEKNOLOGI MARA

APRIL 2006

ACKNOWLEDGEMENT

First, I would like to thank almighty ALLAH S.W.T for His blessing leading to be success of completing this final project. I would like to thank very much to my advisor Mr. Ahmad Fauzi B. Othman for helping me to finish my final project. All kindness you have showed I would remember for all my life.

Thank you for the staff of DIP in wood industry laboratory and workshop, Mr. Sardey and Mr. Shahril for their priceless helping me.

In addition, special thank to my partner thesis Norzariza Idrais and my entire beloved friends for their everlasting support and helping through finishing this final project.

Finally, to my beloved family who give me strength and support to keep up with the study and encourage me all the process of succeeding this project paper.

Last but not least, for any individual who has involved directly or indirectly with this project paper. May ALLAH bless you all.

Thank you very much.....

TABLE OF CONTENT

APPROVAL SHEET	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
LIST OF TABLE	iv
LIST OF FIGURE	v
LIST OF PLATE	vi
LIST OF GRAPH	vii
ABSTRACT	viii
ABSTRAK	ix

CHAPTER ONE

1.0	INTRODUCTION	
1.1	The Particleboard	1
1.2	Objective	3

CHAPTER TWO

2.0	LITERATURE REVIEW	
2.1	<i>Gliricidia sepium</i>	4
2.1.1	Uses and Efficacy	5
2.1.2	Chemical Compound	7
2.2	History of Particleboard	8

CHAPTER THREE

3.0	MATERIAL AND METHOD	
3.1	Material Preparation	11
3.2	Methodology	12
3.2.1	Chipping and Flaking	13
3.2.2	Drying and Screening	13

3.2.3	Glue Mixing and Blending	13
3.2.4	Mat Forming	14
3.2.5	Cold Press	14
3.2.6	Hot Press	14
3.2.7	Sizing	15
3.2.8	Testing	16
3.3	Method and Testing	
3.3.1	Bending Testing (MOE & MOR)	17
3.3.2	Internal Bonding Testing (IB)	18
3.3.3	Thickness Swelling & Water Absorption Testing	19

CHAPTER FOUR

4.0	Discussion of Testing	
4.1	Internal Bonding	21
4.2	Water Absorption	23
4.3	Thickness Swelling	25
4.4	Bulk Density	27
4.5	Particle Analysis	28

CHAPTER FIVE

5.0	Conclusion and Recommendation	29
-----	-------------------------------	----

REFERENCES	30
-------------------	----

APPENDICES	31-48
-------------------	-------

VITA	53
-------------	----

PROPERTIES THREE LAYER OF PARTICLEBOARD FROM *Gliricidia sepium*

By

NORAINI BT. IBRAHIM @ GHAZALI
APRIL 2006

ABSTRACT

In this study, three type of density that is 650 Kg/m³, 750 Kg/m³ and 850 Kg/m³ will be use *Gliricidia sepium* wood particle with 10% (core) and 12% (face and back) resin with wax and without wax. This type of density will be made a board called particleboard after been cured by heat and pressure. Several type of test will determine the properties of this board. The result shown that the higher density will give better properties in most of the testing except thickness swelling.