

UNIVERSITI TEKNOLOGI MARA

**PHYSICAL AND MECHANICAL PROPERTIES
OF HYBRID PLYWOOD FROM COCONUT AND
RUBBERWOOD VENEER BONDED WITH
DIFFERENT ADHESIVE**

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TABLE OF CONTENTS

CONTENT	PAGE
TITLE PAGE	-
APPROVAL SHEET	i
DEDICATION	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF PLATES	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT	xi
ABSTRAK	xii
CHAPTER	
1.0 INTRODUCTION	1
1.1 Plywood Composite	2
1.2 Problems Statement	4
1.3 Justification	5
1.4 Objectives	6
2.0 LITERATURE REVIEW	
2.1 Coconut Tree	7
2.1.1 Botanical Classification of Coconut Palm	9
2.1.2 Utilization of Coconut Palm	9
2.1.3 Growing of Coconut Plantation	11
2.1.3.1 Plant	11
2.1.3.2 Flowers	11
2.1.3.3 Pollination	12
2.1.3.4 Fruits	12
2.1.4 Anatomy of Coconut Palm	13
2.1.4.1 Vascular Bundles	13
2.1.4.2 Parenchymatous Tissue	14
2.2 Rubberwood	14
2.2.1 Characteristics of Rubberwood	15
2.3 Veneer and Veneer Product	16
2.4 Adhesive	17
2.4.1 Natural Adhesive	18
2.4.2 Synthetic Adhesive	18

2.4.3	Wood Adhesive	19
2.4.4	Phenol Formaldehyde (PF)	19
2.4.5	Polyvinyl Acetate (PVAc)	21
3.0	MATERIALS AND METHODS	
3.1	Raw Material Preparation	22
3.1.1	Rubberwood and Coconut Veneer	22
3.1.2	Adhesives	22
3.1.3	Glue Spread	22
3.1.4	Preparation of Hybrid Plywood	23
3.2	Sample Testing	25
3.2.1	Moisture content and Density	26
3.2.2	Bending Strength	26
3.2.3	Tensile Shear Strength	28
3.2.4	Water Absorption and Thickness Swelling	29
4.0	RESULTS AND DISCUSSIONS	
4.1	Moisture content and Density	31
4.2	Statistical Significance	32
4.3	Bending Properties	34
4.4	Shear Properties	35
4.5	Water Absorption and Thickness Swelling	36
5.0	CONCLUSION	39
	REFERENCES	40
	APPENDICES	44
	VITAE	56

LIST OF TABLES

TABLE		PAGE
Table 2.1:	Physical and Mechanical Properties of Rubberwood	16
Table 4.1:	The Result of Moisture content of Hybrid Plywood	31
Table 4.2:	The Result of Density of Hybrid Plywood	32
Table 4.3:	The Result for Analysis of Variance (ANOVA)	33

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ABSTRACT

Shortage of wood as a raw material has forced wood-based industries to find alternative local raw materials. This study was undertaken to determine the properties of hybrid plywood from coconut and rubber wood veneer of different adhesives used and glue-spread rate. Experimental plywood panel from coconut veneers bonded with Polyvinyl acetate (PVAc) and Phenol Formaldehyde (PF) were produced with adhesive spread levels; 180g/m^2 and for single glue-line. The physical and mechanical properties were then accessed. The results show that hybridisation of coconut with rubber wood improves some properties of plywood, such as bending strength, tensile shear strength, water absorption and thickness swelling, and density. The tensile shear strength was higher in panel bonded with PF at 180g/m^2 compare with PVAc. The panels glued with PF using 180g/m^2 spread level showed better in MOR and MOE compare with plywood bonded using PVAc. Density of panel manufactured using PVAc using 180g/m^2 spread level was higher compare with panel bonded with PF. Water absorption and thickness swelling rate were slightly lower for plywood manufactured using PF at 180g/m^2 .