FINISHING PROPERTIES OF OIL BASED FINISHING MATERIAL WITH DIFFERENT FINISHING SYSTEMS ON SENTANG (*Azadirachta excelsa*)

SITI NUR MADIHAH BINTI MOHD FAUZI

This Final Year Project Submitted in Partial Fulfillment of the Requirements for the Bachelor of Science (Hons.) Furniture Technology in the Faculty of Applied Sciences, Universiti Teknologi MARA

JULY 2017

CANDIDATE'S DECLARATION

I declare that the work in this project report was carried out in accordance with regulations of University Teknologi MARA. It is original and the result done by my work, unless otherwise indicated or acknowledged as a referenced work. This project report has not been submitted to other academic institution or non-academic institution for any other degree or qualification.

In the event if my project is found to violated the condition that I mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulations of the Universiti Teknologi MARA.

Signature of Candidate:

Name of candidate	;	Siti Nur Madihah binti Mohd. Fauzi
Candidate matrix ID	:	2015832454
Program	:	Bachelor of Science (Hons.) Furniture Technology
Faculty	:	Applied Sciences
Project report title	:	Finishing Properties Of Oil Based Finishing Material With Different Finishing Systems On Sentang (<i>Azadirachta excelsea</i>)

: July 2017

Date

ABSTRACT

FINISHING PROPERTIES OF OIL BASED FINISHING MATERIAL WITH DIFFERENT FINISHING SYSTEMS ON SENTANG (*Azadirachta excelsa*)

Finishing Properties of Oil Based Finishing Material with Different Finishing Systems on Sentang (Azadirachta excelsa) has been studied. The oil based finishes used was Linseed oil and Tung oil applied using rags application methods. Two different finishing systems was used to applied the finishes, for system 1, sealer was used for undercoat applied using brush added oils applied using rags and system 2 was two coat of oils was applied using rags. The objective in this study was to determine the properties of finishing using traditional techniques on wood surface and to identify the performance of coating materials by using different finishing systems. The finishing produced was evaluated by pencil hardness test, contact angle of wettability test, and cross cut tape test according to American Standard Test Method (ASTM). The measurement of samples used in this study is 4 inch x 12 inch x 1 for each testing. The better application of finishing will produce better performance. The finishing systems have helped Tung and Linseed oil to give better performance. To conclude, Tung oil and system 1 showed better properties and performance of finishing.

TABLE OF CONTENTS

APPROVAL SHEET	i
DEDICATIONS	ii
CANDIDATE'S DECLARATION	iii
ACKNOWLEDGMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF PLATES	ix
LIST OF ABBREVIATIONS	x
ABSTRACT	xi
ABSTRAK	xii

CHAPTER

1	INTROD	OUCTION	
	1.1 1.2 1.3 1.4 1.5	General Background Problem Statement Justification of Study Scope and Limitation Objectives	1 2 3 3 3 3
2	LITERA	TURE REVIEW	
	2.1	History of Finishing	4
	2.2	Sentang Wood	5
	2.3	Traditional Finishing	7
	2.4	Oil Finishes	7
		2.4.1 Tung Oil	10
		2.4.2 Linseed Oil	11
	2.5	Sealer	13
	2.6	The Difference Oil and Others Finis	shes 15
	2.7	Finishing technique	17
		2.7.1 Rags	17
		2.7.2 Brushes	18

2.7	Finishing technique		
	2.7.1	Rags	
	2.7.2	Brushes	

3 MATERIALS AND METHODS

3.1	Materials	21
3.2	Preparation of Raw Material	21
	3.2.1 Surface Preparation	26
3.3	Testing Finishing	29
	3.3.1 Sampling Technique	29
	3.3.2 Contact Angle of Wettability Test	30
	3.3.3 Cross Cut Tape Test	30

	3.3.4 Pencil Hardness Test	33
3.4	Statistical Analysis	37
3.5	Experimental Design	37

4 RESULTS AND DISCUSSION

4.1	General Specification	39
4.2	Statistical Significance	39
4.3	Cross Cut Tape Test	41
	4.3.1 Summary of the ANOVA for Cross Cut Tape Test on Sentang	41
	4.3.2 Effect of Materials on Cross Cut Tape Test	41
	4.3.3 Effect of Systems on Cross Cut Tape Test	41
4.4	Pencil Hardness Test	43
	4.4.1 Summary of the ANOVA for Pencil Hardness Test on Sentang	43
	4.4.2 Effect of Materials on Pencil Hardness Testing	43
	4.4.3 Effect of Systems on Pencil Hardness Testing	46
4.5	Contact Angle of Wettability Test	47
	4.5.1 Summary of the ANOVA for Contact Angle Wettability on Sentang	47
	4.5.2 Effect of Materials and Systems on Time Taken on Contact Angle Wettability Testing	47
	4.5.3 Effect of Materials on Contact Angle Wettability Testing	50
	4.5.4 Effect of Systems on Contact Angle Wettability Testing	50
	4.5.5 Effect of Time Taken on Contact Angle Wettability Testing	50

5 CONCLUSIONS AND RECOMMANDATIONS

5.1	Conclusions	52
5.2	Recommendations	53
REFERENCES		54
EVALUATION OF	FINAL YEAR PROJECT REPORT	
PUBLICATION O	F THE PROJECT REPORT UNDERTAKING	
PERMISSION FO	R REFERENCES AND PHOTOCOPYING	

CURRICULUM VITAE