# COLD TACK OF UREA FORMALDEHYDE RESINS AS AN IMPORTANT FACTOR IN PLYWOOD PRODUCTION

## AIMAN SYAMIL BIN SALLEHUDDIN

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

**JULY 2019** 

### **CANDIDATE'S DECLARATION**

I declare that the work in this thesis was carried out in accordance with the regulation of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledge as reference work. This proposal has not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

In the event my thesis is found to violate the condition mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulation of Universiti Teknologi MARA.

Name of Candidate	: Aiman Syamil Bin Sallehuddin
Candidate's Id No	: Degree of Bachelor of Science (Hons.) Furniture Technology (AS 247)
Faculty	: Applied Sciences
Thesis Title	: Cold tack of urea formaldehyde as important factor in plywood production
Signature of Candidate	and
Date	: JULY 2019

## TABLE OF CONTENTS

	Page
APPROVAL SHEET	i
CANDIDATE'S DECLARATION	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENT	iv
LIST OF PLATE	vii
LIST OF FIGURE	viii
LIST OF TABLE	ix
LIST OF ABBREVIATIONS	х
ABSTRACT	xi
ABSTRAK	xii

CHAPTER 1 INTRODUCTION		1
1.1	Background of the study	1
1.2	Problem statement	5
1.3	Significance of the Study	6
1.4	Limitation of the Study	7
1.5	Objectives of the Study	8

CHAPTER 2 LITERATURE REVIEW		
2.1	Resin Tack	9
2.2	Formaldehyde based resin	11
2.3	Plywood	14
2.4	Impact of veneers during cold press.	15

	2.4.1	The moisture content of veneer	16	
	2.4.2	The temperature of veneer	16	
2.5	Cold p	Cold press		
2.6	Mempisang species			
CHAI	PTER 3	METHODOLOGY	20	
3.1	Introduction		20	
3.2	Experimental Design			
3.3	Mater	al Preparations	22	
	3.3.1	Sample preparation	22	
	3.3.2	Adhesives mixture	22	
	3.3.3	Resin application	23	
	3.3.4	Pre-press	23	
	3.3.5	Tensile shear strength testing	24	
3.4	Statist	ical analysis	24	
CHAI	PTER 4	RESULTS AND DISCUSSION	25	
4.1	General			
4.2	Statistical evaluation			
4.3	Discussion effect of pre-press and moisture content on the tensil			
	streng	th	29	
CHAI	PTER 5	CONCLUSION AND RECOMMENDATION	32	
5.1	Conclu	usion	32	
5.2	Recon	nmendation	33	
CITE	D REF	ERENCES	34	
PUBLICATION OF THE PROJECT REPORT UNDERTAKING				

#### ABSTRACT

## COLD TACK OF UREA FORMALDEHYDE RESINS AS AN IMPORTANT FACTOR IN PLYWOOD PRODUCTION

Cold tack of resin is the capability of adhesive to adhere onto another surface under low force applied for a short period of time. It is an important step in wood-based composite production. The main ingredient for the experiment is Urea Formaldehyde (UF) which is the most popular adhesive since it is considered as the pioneer in resin manufacturing. The parameters of the experiment were moisture content and pre-press time and it will be tested by using tensile shear strength. In this experiment, the highest pre-press time which was 45 min with oven-dried veneer produced efficient cold tack properties. It can be proven by the data gathered during experiment showed that it accumulates higher tensile shear strength value compare with other different conditions. This study has achieved its objectives by observing the effect of moisture content and pre-press time factors on the cold press properties in plywood manufacturing and to determine the tensile shear strength of uncured veneer bonded with UF resin.