

**REVIEW ON EFFECTS DIFFERENT MODIFIER TOWARDS
FORMALDEHYDE EMISSION, PHYSICAL AND MECHANICAL
PROPERTIES OF MELAMINE UREA FORMALDEHYDE AND UREA
FORMALDEHYDE BONDED PARTICLEBOARD**

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AUGUST 2021

ABSTRACT

REVIEW ON EFFECTS DIFFERENT MODIFIER TOWARDS FORMALDEHYDE EMISSION, PHYSICAL AND MECHANICAL PROPERTIES OF MELAMINE UREA FORMALDEHYDE AND UREA FORMALDEHYDE BONDED PARTICLEBOARD

Particleboard is one of the composite panels most commonly used in the mechanical industry. Particleboards are more cheap, dense, and uniform than conventional wood and plywood, and replace them where cost is greater than strength and appearance. However, too much emission was produced in the production of particleboards especially on MUF and UF. Free formaldehyde releases from wood composite panels are impacting to human health. The World Health Organization (WHO) has nevertheless considered the application of formaldehyde-based resins as synthetic binder in wood-based panels as a human carcinogen, which can cause a burning feeling in eyes, nose and throat, coughing, and queasiness. In order to reduce formaldehyde emissions from particleboard production, several modifiers have been added. Hemp flour, Liquid condensates and Amines were used as different modifier to reduce formaldehyde emission. However, addition of modifier will give impact towards the physical and mechanical properties of the board. The purpose of this study is to determine the effect of modifier towards formaldehyde emission, physical and mechanical properties of the board after the modifier was added as a formaldehyde scavenger. The result shows that addition of modifier was produce a good result in reducing formaldehyde emission. However, the application of a formaldehyde scavenger has an impact on the board's mechanical or physical properties.

Keyword: (Particleboard, Formaldehyde emission, Hemp flour, Liquid condensates, Amines, Melamine Urea Formaldehyde, Urea Formaldehyde)

ACKNOWLEDGEMENT

First and foremost, In the name of Allah, the Most Merciful and The Greatest. I would like to take an opportunity to show my gratitude to all people that help me a lot to complete this research project. Without them, this final year project cannot be complete and done successfully.

I would like to dedicate my special thanks and greatest gratitude to my supervisor, Madam Zaimatul Aqmar Binti Abdullah for the help and guidance also give me all the support and encouragement to complete this research project from the beginning until the end. She also makes me stronger and boost my energy to complete this project. I am very thankful and appreciate for having such a good supervisor.

My special thanks to my coordinator of FSG 661, Dr. Siti Zalifah binti Mahmud who give me all the support that I need and guiding me from the beginning with guidelines from the proposal writing, thesis writing and also the viva presentation. I also want to take this opportunity to give greatest thanks especially to my parents, and my siblings,

for

allowing me to be as ambitious as I wanted and their encouragement, spirit support and advise when I'm having a breakdown and hard time when completing this final year project.

I am also very grateful because have been blessed with all my best friends, Aisya Usman, Nurul Syahira, Al-Hilmi, Al Amin, Raja Nazimudin, Fatihah, Afiq Syahmi, Faiz, Mirza, Kamal and Safwan for always helping me in boosting up my energy, give me support, sharing idea and encouragement to not give up. Thank you very much.

TABLE OF CONTENT

	Page
ABSTRACT	ii
ABSTRAK	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENT	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATION	x
CHAPTER 1 INTRODUCTION	1
1.1 Background of the study	1
1.2 Problem Statement	5
1.3 Significance of Study	6
1.4 Objectives of Study	7
CHAPTER 2 LITERATURE REVIEW	8
2.1 Particleboard	8
2.2 Melamine Urea Formaldehyde and Urea Formaldehyde in particleboard manufacturing	9
2.3 Different modifiers utilization in wood based industry	10
2.3.1 Hemp flour	10
2.3.2 Liquid condensates	11
2.3.3 Amines	12
2.4 Experimental Analysis	13
2.4.1 Particleboard Manufacturing	13
2.4.2 Formaldehyde Emission Evaluation	15
2.4.3 Physical properties determination	23
2.4.4 Mechanical properties determination	25
2.5 Effect of modifiers towards the Melamine Urea Formaldehyde (MUF) and Urea Formaldehyde (UF) bonded particleboard	26
2.5.1 Formaldehyde emission analysis	27
2.5.2 Physical properties analysis	32
2.5.3 Mechanical properties analysis	34
2.6 Result summary	38
2.6.1 Formaldehyde emission	38
2.6.2 Physical properties	40
2.6.3 Mechanical properties	41
CHAPTER 3 CONCLUSION AND RECOMMENDATION	43

LIST OF TABLES

Table	Caption	Page
2.1	Type of specimen's size	14
2.2	Comparison free formaldehyde emission	39
2.3	Comparison for physical properties	40
2.4	Comparison for mechanical properties	41