SENTANG THERMOPLASTIC INFLUENCES FILLER LOADING

MOHD MUIZZ FAHIMI BIN MOHAMED
MUHAMMAD FARIDZUL BIN MOHD ROSLEY
PHILIP MICHAEL ANAK MANDAK

DIPLOMA IN WOOD INDUSTRY
UNIVERSITI TEKNOLOGI MARA

MAY 2009

ACKNOWLEDGEMENT

Alhamdulillah.....After all the hardness and obstacle, with the god will, we finally managed to finish this project. It is not easy to complete the project. But with the guidance and thought from all people, and of course with the permission from Allah S.W.T, this project is finally complete.

First of all, we would like to thank our beloved advisor, Tn Shaikh Abdul Karim Yamani bin Zakaria (Pak Shaikh) for all his thought and guidance. He had been with us all the time since from the early stage of our project. He never failed to guide us and give his support to us. Thank you so much, Pak Shaikh. Without the support and guidance from him, it is might be possible for us to finish this project

For tutorial lecturer, Prof Madya Dr. Jamaludin Kassim also thanks that had been guiding us in processed of Wood Plastic Composite, makes the slide for presentation and in writting of the thesis project report. Without his effort and help, very impossible to complete well for this project.

Highly appreciate to the staffs from Wood Industry Departmnet such as En Sardey, En.Nazri, En. Shahril and others for lend their hand to help us in order to finished up this project.

Thanks also to all my friends especially from batch July 06 for the cooperation and giving help and support directly or indirectly to complete this project. Only God can return a compliment towards all of your kindness.

TABLE OF CONTENTS

CONTENTS **PAGES**

APPROVAL SHEET.....ii

DEDICATION.....iii

ACKNOWLEDGEMENTS.....iv-v

TABLE OF CONTENTS.....vi-viii

LIST OF TABLES.....ix

LIST OF FIGURES.....x

LIST OF PLATES.....xi

LIST OF ABBREVIATIONS.....xii

ABSTRACT.....xiii

ABSTRAK.....xiv

CHAPTER 1

1.0 INTRODUCTION.....1

1.1 Problem statement.....2

1.2 Justification.....3

1.3 Objective.....3

CHAPTER II

2.0 LITERATURE REVIEW.....4

2.1 Sentang (*Azadirachta excelsa*).....4

2.1.1 Botanical description.....5

2.1.2 Fruit and seed description.....5

2.2 Thermoplastic.....6

2.3 Composite.....7

2.4 Thermoplastic Composite.....8

2.4.1 Benefit thermoplastic composite.....9

2.5 Environmental consideration.....11

2.6 Polypropylene.....11

2.7 Potential of lignocellulosic thermoplastic composite.....13

2.8 Effect of Filler Loading.....15

CHAPTER III

3.0 MATERIAL AND METHOD.....17

3.1 Board Making.....18

3.2 Wood Plastic Composite Process.....19

3.3Melting and Blending Process.....20

3.4 Melting Wood Plastic Pallet.....22

3.5 Moulding Process.....23

3.6 Pressing Process.....24

3.7 Sample Size and Testing Method.....26

SENTANG (*Azadiracta excelsa*) THERMOPLASTIC INFLUENCES FILLER LOADING

By

MOHD MUIZZ FAHIMI BIN MOHAMED

MUHAMMAD FARIDZUL BIN MOHD ROSLEY

PHILIP MICHAEL ANAK MANDAK

APRIL 2009

ABSTRACT

The properties of wood composite from Sentang with different amount of filler loading to the board already ascertaining. Wood Plastic Composite from sentang followed by the percentages of sawdust, ten parameter was carried out there are 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50% without MAPP. Determination of the physical properties had been from water absorption and thickness swelling testing. While for the tensile, bending, and impact testing also determine the mechanical properties of the board. This project determines the suitability of sentang to be used as filler in the production of thermoplastic composite. Henceforth, from the statistical analysis shows, the sentang sawdust has a greater potential as an alternative raw material to produce the WPC.