

**THERMAL CONDUCTIVITY OF GYPSUM BOARD IN PROPORTION
TO KENAF FIBER AND POLYVINYL ALCOHOL (PVA)**

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TABLE OF CONTENTS

| | PAGE |
|---|-------------|
| APPROVAL SHEET | i |
| CANDIDATE'S DECLARATION | ii |
| ACKNOWLEDGEMENTS | iii |
| TABLE OF CONTENTS | iv |
| LIST OF TABLES | vi |
| LIST OF FIGURES | vii |
| LIST OF PLATES | viii |
| LIST OF ABBREVIATIONS | ix |
| ABSTRACT | x |
| ABSTRAK | xi |
| | |
| 1.0 INTRODUCTION | |
| 1.1 Background Study | 1 |
| 1.2 Problem Statement | 3 |
| 1.3 Objectives | 5 |
| 1.4 Scope And Limitation | 6 |
| | |
| 2.0 LITERATURE REVIEW | |
| 2.1 Malaysian Wood Composite Board | 7 |
| 2.2 Introduction To Gypsum | 9 |
| 2.2.1 Physical And Chemical Properties Of Gypsum | 10 |
| 2.3 Introduction To Gypsum Board | 12 |
| 2.3.1 Production Of Gypsum Board | 14 |
| 2.3.2 Applications Of Gypsum Board | 15 |
| 2.3.4 Advantages Of Gypsum Board | 17 |
| 2.4 Wood Fibers | 18 |
| 2.5 Kenaf Fibers | 19 |
| 2.6 Natural Fibers | 21 |
| 2.7 Polyvinyl Alcohol (Pva) | 22 |
| 2.7.1 Chemical And Physical Properties Of Pva | 23 |
| 2.7.2 Advantages Of Pva | 25 |
| 2.8 Thermal Conductivity | 26 |
| 2.9 Properties Affecting The Thermal Conductivity | 27 |
| 2.9.1 Materials | 27 |
| 2.9.2 Density | 28 |
| 2.9.3 Temperature | 28 |

| | |
|---|----|
| 3.0 MATERIALS AND METHODS | |
| 3.1 Materials | 29 |
| 3.2 Methods | 30 |
| 3.2.1 Weighed Process | 31 |
| 3.2.2 Adding Water | 31 |
| 3.2.3 Mixing Process | 31 |
| 3.2.4 Forming Process | 32 |
| 3.2.5 Drying Process (Air Dry) | 32 |
| 3.2.6 Sampling Process | 33 |
| 3.3 Experimental Design | 34 |
| 3.4 Testing Method | 35 |
| 3.4.1 Thermal Conductivity Testing | 35 |
| | |
| 4.0 RESULTS AND DISCUSSION | |
| 4.1 Effect of Percentage of Kenaf without PVA | 41 |
| 4.2 Effect of Percentage of Kenaf with PVA | 42 |
| | |
| 5.0 CONCLUSION AND RECOMMENDATION | |
| 5.1 Conclusion | 46 |
| 5.2 Recommendations | 47 |
| | |
| CITED REFERENCES | 48 |
| | |
| APPENDICES | 52 |
| | |
| CURRICULUM VITAE | 57 |

LIST OF TABLES

| Table | Caption | Page |
|--------------|---|-------------|
| 2.1 | Summary of physical and chemical properties of gypsum | 9 |
| 2.2 | Strength, deformation and thermal characteristics of PVA and PVAc | 25 |
| 3.1 | Details of 100 mm (large) single-needle | 38 |
| 4.1 | Summarized mean result of thermal conductivity test | 40 |
| 4.2 | Summary of the ANOVA on the properties of gypsum board | 43 |
| 4.3 | Summary of the ANOVA on the properties of gypsum board | 45 |

ABSTRACT

This study is about thermal conductivity of gypsum board in different proportions of Kenaf fiber and polyvinyl alcohol. The aim of this experiment is to study the effects and compatibility of Kenaf fiber and polyvinyl alcohol towards the properties of gypsum board. In this study, different compositions of these three main materials were produced. The first composition consists of 100% gypsum. The second composition is gypsum in proportion to Kenaf fiber at 1%, 3% and 5%. The third composition is gypsum and Kenaf fiber at 1%, 3% and 5% in addition to polyvinyl alcohol. Other parameters such as the temperature (100 °C) and density (800 kg/m³) were held constant. The thermal conductivity values for every different composition will be measured by using needle probe device also known as KD2 Pro in reference to the standard of ASTM D5334-14. Overall results show that gypsum board which contains Kenaf fiber and polyvinyl alcohol has much higher reading of thermal value in comparison to gypsum board without polyvinyl alcohol. This experiment concluded that both higher value of Kenaf and polyvinyl alcohol affect the thermal conductivity of gypsum board.