

**AN ANALYSIS EFFECT OF LENGTH OF TIMBER
LAMINATE ON THE FLEXURAL STRENGTH OF
GLULAMINATED BEAM**

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Presented By:

RAFIDAH HJ. AHMAD MOGHNI

Faculty of Civil Engineering

Universiti Teknologi MARA

Shah Alam

Selangor Darul Ehsan

MALAYSIA

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CHAPTER ONE

INTRODUCTION

1.0 General

Glue laminated timbers are refers to two or more layers of smaller piece of wood which are glued together with the grain of all layers lamination approximately parallel. They are load bearing structural members for roofs, floors or other construction situation. Glulam members are stronger weight for weight other than structural materials.

Glued laminated timber in this study consist of ten layers of wood glued together with the grain of all layers and the flexural strength of glue laminated beam will be determine by using finite element analysis

The length of the laminate of the beam varies relative the length of the beam. The length of laminate is the important criteria in the making of glulamminated beam.

1.1 Objectives

This study will compare the results between the finite element analysis and the experimental results. The main objective on this research is to investigate the bending strength, stress and displacement of the glulamminated beam with respect to the varies length of laminate. (See Figure 1.1)

- i) to determine the flexural strength of the beam
- ii) to determine the strain
- iii) to determine the displacement of the beam
- iv) to investigate the critical stress contour of the beam