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MERANTI AS A GLULAMINATED STRUCTURAL MEMBER

BY

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PREFACE

This thesis proposal describe the test on strength of meranti as a glulaminated structural member, which has a good gluing characteristic compared to other species. The test is done at the laboratory using a sample size of 18 mm x 30 mm.

The thesis proposal is divided into 5 chapters : First chapter is on introduction, which describe about the glulaminated of the sample; Chapter Two is on literature review; Chapter Three , Test Procedures; Chapter Four, Analysis of Results, Chapter Five, Conclusion and Recommendation, and finally, Appendices and References .

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ABSTRACT

Knowledge on glulam timber such as Meranti is not widely been tested, though there are several other species tested such as Keruing and Keranji (Burgess, 1937). But then, Meranti also has a good gluing characteristic compared to other species, even though it is categorised as a light wood, such that stated in MS 758 : 1981. As in this study, Light Meranti is used specifically for the gaining of several mechanical and physical properties of the wood itself.

It seem that immediate failure of the Meranti is governed by the slope of grain, either if it is parallel towards the line of loads or perpendicular to it, which the thickness of glue and the adhesives used also gives an immediate failure. But then, the different angle of cutting with constant scarf or finger length can also give an effect to the end results of shear or tensile strength of the wood and glued joint respectively.

The constant angle but with a different length glue line are anticipate to give a different value of strength. The sample of Meranti will be loaded with load increment of 5 kN until failure occurred at a rate of 0.06 kN/min, in either wood or glued samples. From experimental results obtained, the effect of different experimental approach on shear or tensile strength can be determined. The maximum shear strength obtained is 3.86 N/mm² and the maximum tensile strength is 65.967 N/mm² from earlier experiments. Apart from that, the increment of shear strength values of glued scarf joint, depend on the slope of the scarf.