BENDING STRENGTH OF BONDED THREE SELECTED MALAYSIAN TIMBER SPECIES (SEPETIR, KELAT AND SESENDOK) WITH POLYVINYL ACETATE (PVAc)

By

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CANDIDATE'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has been not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

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ABSTRACT

BENDING STRENGTH OF BONDED THREE SELECTED MALAYSIAN TIMBER SPECIES (SEPETIR, KELAT AND SESENDOK) WITH POLYVINYL ACETATE (PVAc)

An assessment of the bending strength of bonded three selected Malaysian timber species namely Sepetir, Kelat and Sesendok using Polyvinyl Acetate (PVAc) resin as adhesive was carried out. The three selected timber species were obtained from UiTM Jengka Forest Reserve area in Jengka, Pahang. The main objective of the study was to determine the suitability and effectiveness of combining these three timber species in the hope to use them as an alternative raw material for interior application. In this study, the mechanical properties such as modulus of rupture (MOR) and modulus of elasticity (MOE) were determined conforming to the American Society of Testing and Materials (ASTM D1554) standard, 1986. The results indicated that the integrity of the bond did not only depend on the adhesive but also the type of timber species. Manufacturing parameters such as type of adhesive was held constant. The results revealed that the density of the testing sample tend to significantly improved the mechanical properties of the samples in which increased density gives better mechanical properties. The bonding quality of the sample has provided superior mechanical strength to the Sesendok & Sesendok (S3S3) sample with improvements at 6418 MPa of MOE and 51 MPa of MOR compared to Kelat & Kelat (S2S2) sample.

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