TENSILE STRENGTH OF BAMBOO FIBER REINFORCED POLYMER

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AUTHOR'S DECLARATION

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

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

In recent years, the natural fibers have attracted substantial importance as potential Synthetic Fiber Reinforced Polymer (SFRP). Therefore, the purpose of this study is to obtain tensile strength of Bamboo Fiber Reinforced Polymer (BFRP). In this paper, the optimum tensile strength of the BFRP was studied. Five samples of BFRP with different percentage of bamboo fiber were prepared starting from 2%, 4%, 6%, 8% and one control sample. Each of the samples were undergoes tensile testing for determination of tensile load. The results of optimum tensile stress and the optimum tensile load value of the tensile strength of the sample are determined from the result shown in the graph of maximum load versus extension at break. From the analysis, the optimum tensile load recorded was 1480.78N for the control sample (0% bamboo fiber). The BFRP sample with 6% bamboo fiber content was considered the best performance as it recorded the highest tensile load value which was 1241.94N when compared to 2%, 4% and 8% bamboo fiber content. There are several factors that affects the tensile load of BFRP such as the existence of the void, the fiber arrangement and the bonding between fiber and polymer.

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