

215-028

COMPARATIVE MECHANICAL ANALYSIS BETWEEN EPOXY COMPOSITE REINFORCED WITH CURAUA AND EPOXY COMPOSITE REINFORCED WITH FIBERGLASS

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Currently, modern composite materials are used in several areas mainly composite materials reinforced with synthetic fibers. However, these materials are not environmentally friendly since they cause environmental impacts from manufacturing to disposal of them. Thinking of a way to mitigate the impacts, the idea is to use natural fiber in place of synthetic fibers, because natural fibers are biodegradable and renewable. Moreover, composite materials reinforced with natural fibers can bring environmental, social, economic and technical advantages. Therefore, the main aim of this article is to investigate the mechanical behavior of both the composite epoxy polymer matrix reinforced with natural curaua fiber and the composite of epoxy polymer matrix reinforced with glass fiber. For that purpose, bending tests were performed with epoxy matrix specimens with 30% natural curaua fibers and other with 30% synthetic glass fibers. The results showed that the natural curaua fibers are resistant, and may therefore, in some cases replace glass fibers.