

***THE EFFECT OF TEMPERATURE VARIATIONS CURING POLYMER
MATRIX COMPOSITE FORGED CARBON FIBER REINFORCED
TO IMPACT TOUGHNESS AND MICRO IMAGES***

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ABSTRACT

Composite is a combination of two materials consisting of a matrix as a binder and reinforcement as a filler or amplifier. There is a composite material that is widely used, namely carbon fiber because this fiber has a light and strong character, one of which is carbon fiber forged. In this research the author discusses the effect of additional processes curing oven to increase the bond strength between the matrix and the reinforcement at temperature variations curing 70°C, 80°C, 90°C and 100°C for 1 hour using the vacuum bag in order to minimize the presence of air voids so that later using this method is expected to reduce the presence of air voids and improve the characteristics of the composite in testing impact. From the results of the research that has been carried out, the average test value is obtained impact with the highest temperature variation at 100°C with a value of 0.1224 J/mm² and the lowest average value is at a temperature of 70°C with a value of 0.0756 J/mm². Observation of the micro images shows that the entire specimen is still dominated by its presence void and debonding, but as the temperature increases in the process curing shows a decrease void because of the process curing helps polymerization occur in the composite so that the resin fills the empty gaps that previously existed void.

Keywords : *Composite, Forged Carbon Fiber, Curing, Vacuum Bag*