

## Statistical analysis of fatigue test in jute reinforced polyester composites using Weibull distribution

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In this research, the unsaturated polyester resin (polylite 420-852) is used in combination with bidirectional jute fiber to generate composites materials by a contact molding technique. The parameter which was carried out on the prepared samples was impact test to plot the S-N curve, which is based on Wöhler equation. Two-parameter Weibull probability was used for analysis statistically the fatigue life results of composite jute/polyester samples. Weibull

graphic was plotted for each loading level using fatigue data. Then, S-N curves were drawn for different reliability levels ( $P_s=99\%$ ,  $P_s=90\%$ ,  $P_s=50\%$ ,  $P_s=36.8\%$  and  $P_s=10\%$ ) using Weibull data. These S-N curves were introduced to the identification of the first failure time as reliability and safety limits of the material.

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