

Effect of fibre orientations on the mechanical properties of kenaf–aramid hybrid composites for spall-liner application

ABSTRACT

This paper presents the effect of kenaf fibre orientation on the mechanical properties of kenaf/aramid hybrid composites for military vehicle's spall liner application. It was observed that the tensile strength of woven kenaf hybrid composite is almost 20.78% and 43.55% higher than that of UD and mat samples respectively. Charpy impact strength of woven kenaf composites is 19.78% and 52.07% higher than that of UD and mat kenaf hybrid composites respectively. Morphological examinations were carried out using scanning electron microscopy. The results of this study indicate that using kenaf in the form of woven structure could produce a hybrid composite material with high tensile strength and impact resistance properties.

Keyword: Hybrid composites; Spall-liner; Aramid fibre; Porosity; Mechanical testing