

Water absorption behaviour and impact strength of kenaf-Kevlar reinforced epoxy hybrid composites

ABSTRACT

Fibre reinforced polymer composites has been used in a variety of applications. Recently, there is increasing interest in the research on natural-synthetic fibre hybrid composite. In this study, physical properties, water absorption and impact properties of woven kenaf-Kevlar hybrid composite was evaluated. In all samples, Kevlar (aramid fibres) was kept as the skin layers and kenaf as the core material. The experimental results revealed that the hybrid composites with high kenaf content show a low in density and contains a high content of the voids. Similar finding observed in water absorption and thickness swelling test as the hybrid composite with higher kenaf content absorb more water and dimensional changes. Water absorption of hybrid composite increased with the increase of kenaf content. Water absorption affects the impact strength of the composites. The result of this study is important for the further utilisation of woven kenaf in hybrid laminate composites.

Keyword: Hybrid composites; Thickness swelling; Water absorption; Woven kenaf; Impact properties