

Water absorption of environment friendly sugar palm fibre reinforced vinyl ester composites at different fibre arrangements

ABSTRACT

A study on water absorption of sugar palm fibre reinforced vinyl ester (VE) composites at different fibre arrangements is presented in this paper. Hand lay-up method was used in preparing the composites and water absorption was determined using a balance and water absorption equation. Results revealed that unidirectional fibre composites demonstrate the lowest value of water absorption compared to bidirectional fibre composites ($0^{\circ}/90^{\circ}$ and $\pm 45^{\circ}$ fibre arrangements) but all composites showed high water absorption compared to neat VE, which may be attributed to incompatibility between fibre and matrix in composites that led to micro bubble and void.

Keyword: Fibre arrangements; Vinyl ester; Sugar palm; Water absorption; Natural fibre composites