International J. of Math. Sci. & Engg. Appls. (IJMSEA)
ISSN 0973-9424, Vol. 7 No. I (January, 2013), pp. 91-100

PREDICTION OF MICROMECHANICAL BEHAVIOUR OF HYBRID ELLIPTICAL FIBER REINFORCED LAMINA FOR IN-PLANE TRANSVERSE LOAD

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Abstract

The present work deals with the micromechanical analysis of a T-300/S-Glass-Epoxy hybrid lamina subjected to in-plane transverse load. A three-dimensional finite element method is used for the prediction of the stresses at fiber-matrix interfaces. The finite element model of representative volume element of hexagonal pattern is generated in ANSYS software. The cross-section of fibers is taken as ellipse with major axis equal to twice the minor axis and the volume fractions of both the fibers are taken as same. The effect of fiber volume fraction on the stresses is discussed.

Key Words : *FRP, FEM, RVE, Hybrid composite, Micromechanics.*

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