

Bending Behaviour of Fiber Reinforced Polymer Composite Stiffened Panel Subjected to Transverse Loading

Authors : S. Kumar, Rajesh Kumar, S. Mandal

Abstract : Fiber Reinforced Polymer (FRP) is gaining popularity in many branch of engineering and various applications due to their light weight, specific strength per unit weight and high stiffness in particular direction. As the strength of material is high it can be used in thin walled structure as industrial roof sheds satisfying the strength constraint with comparatively lesser thickness. Analysis of bending behavior of FRP panel has been done here with variation in oriented angle of stiffener panels, fiber orientation, aspect ratio and boundary conditions subjected to transverse loading by using Finite Element Method. The effect of fiber orientation and thickness of ply has also been studied to determine the minimum thickness of ply for optimized section of stiffened FRP panel.

Keywords : bending behavior, fiber reinforced polymer, finite element method, orientation of stiffeners

Conference Title : ICSPDSE 2017 : International Conference on Structural Pattern and Design in Structural Engineering

Conference Location : New York, United States

Conference Dates : June 04-05, 2017