

FINITE ELEMENT MODELING FOR LAMINATED COMPOSITE PLATES USING HIGH ORDER SHEAR DEFORMATION THEORY

Ngô Như Khoa

TÓM TẮT:

A rectangular non – conforming element based on Reddy’s higher-order shear deformation plate theory is developed. Although the plate theory is quite attractive but it could not be exploited as expected in finite-element analysis. This is due to the difficulties associated with satisfaction of inter-elemental continuity requirement and satisfy zero shear stress boundary conditions of the plate theory. In this paper, the proposed element is developed where Reddy’s plate theory is successfully implemented. It has four nodes and each node contains equal degrees of freedom. The performance of the element is tested with different numerical examples, which show its precision and range of applicability.