

ABSTRACT

Similar approach monolayer trigonometric shear deformation theory taking into account the transverse shear deformation effect and the effect of the normal stresses transverse shear are presented for static analysis bending folds stratified composite sheets Crusaders. The displacement field in the plane was employed using a sinusoidal function according to coordinate thickness to include the effect of transverse shear deformation. The cosine function for the thickness of coordinates is used in transverse displacement in order to include the effect of the normal cross-sectional deformation. The kinematics of the current theory is much richer than other shear deformation theories of higher order, because if the trigonometric term "involving the coordinates of the thickness z " has developed into power series, kinematics theories of higher order "which are generally obtained by a series of power in the thickness of coordinates z " is implicitly considered in many measures. The equations of motion and the boundary conditions of this theory are obtained using the principle of virtual work, then the solutions of laminated composite sheets simply supported crossed plies were obtained using the Navier technique. The results of the current theory are compared with those of the classical theory of laminated plates (CLPT) The shear deformation theory of the first order (STDF), plus the shear deformation theory of high order (HSDT) Reddy and the exact theory of elasticity in three dimensions. The results predicted by this theory are in good agreement with those of the shear deformation theory (HSDT) and the theory of elasticity.

Keywords: shear deformation, static analysis of flexion, laminated plate bias ply, transverse shear stress.