Abstract

In this work we propose to study the simple case of a laminated plate, orthotropic, semi-infinite, composed of four layers same thicknesses. The validation of these results are obtained by comparing the values of the arrow and the constraints resulting from numerical calculations by the finite element method in the case of the plane deformations with those obtained by the various theories of the plates. The results obtained are validated starting from the three-dimensional solution and by comparison with the other theoretical models. The evaluation of the errors is made by regarding the results by finite elements as reference. To make a comparison between different models of plates and the results of reference obtained by the finite element method, we had presented the results as a summary table and curves. We noted that the trigonometric model estimates stresses of shear at best. Indeed, the effects edges (Free, embedded or in simple supports) are well described by the trigonometric model.

References


Index Terms

Computer Science

Architecture

Keywords

Laminated composite plates Finite element analysis of interlaminar plate theory