International J. of Math. Sci. & Engg. Appls. (IJMSEA)
ISSN 0973-9424, Vol. 6 No. II (March, 2012), pp. 73-85

BUCKLING OF A LONG PLYWOOD SHELL UNDER SHEAR LOAD

A. DE[1] AND D. DEBNATH[2]

[1] Professor of Mathematics,

[2]Research Scholar,

Department of mathematics,

Tripura University,

Suryamaninagar-799130, India

Abstract

The object of this work is to obtain all the stress resultants and to formulate the deferential equations of buckling of $(2n + 1)$ layers plywood shell. The solution of deferential equations of the buckling problem for plywood shell with shear load is obtained here. The values of critical shear load and critical torque are obtained in the direction of the grain as well as in the cross grain direction. The corresponding expressions of critical shear load and critical torque for isotropic shell are deduced as a special case, which is in agreement with the previous results. The critical shear load for plywood shells with deferent number of layers are calculated numerically and shown graphically.

Key Words : *Anisotropic shells, Plywood shell, Shear load, Elastic laws, Hooke's law, Rigidity.*

AMS Subject Classification : 73c.