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ON THE DELAMINATION OF THE ELASTIC AND VISCOELASTIC COATING NEAR THE CLAMPED END OF THE SANDWICH PLATE

Abstract

In the framework of the piecewise homogeneous body model with the use of the Three-Dimensional Linearized Theory of Stability (TDLTS) the local buckling of the elastic and viscoelastic coating around the interface micro-crack is investigated. The sandwich plate is considered and it is assumed that between the upper face and middle layers of the plate there is a crack. Moreover, it is assumed that this plate is clamped at the ends and the micro-crack is near field equations of the theory of viscoelasticity by employing the boundary perturbation method. The corresponding boundary-value problems are solved by employing the Laplace transform and finite element Method. Using obtained numerical results the influence of the distance between the interface micro-crack and the clamp to the values of the critical parameters is analyzed.