عنوان مقاله:

Finite Element Free Vibration Analysis of a Composite Sandwich Plate with Magnetorheological Fluid Core

نویسندگان:

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خلاصه مقاله:

Investigating the free vibrations of the structure is a very important subject in the analysis of engineering structures that plays a decisive role in the design parameters of each structure. In this paper, we intend to study the free vibrations of a sandwich plate withflexible core and composite face sheets. Threedimensional finite element method (FEM) has been used for constructing and analyzing of the sandwich plates to obtain the vibrations. Magnetorheological fluid core (MR) used to optimize the free vibration of the structureand Continuity conditions for transverse shear stresses at the interfaces as well as transverse flexibility and transverse normal strain and stress of the core are considered. The influence of basic structural parameters, such as aspect ratio and thickness ratio, studied. Theeffect of different boundary conditions on system vibrations studied. Different boundary condition such, (CCCC) all edge clamped, (SSSS) all edges simply supported, (CSCS) combined boundary condition, applied to the sandwich plates. ABAQUS finite element Software used to simulate and analyze the hypothesized model. In order to validate the results of the present study, the results of valid published studies have been used which confirms the accuracy of the proposed model.

کلمات کلیدی:

Finite Element Analysis, Free Vibration, Magnetorheological Fluid, Composite Sandwich Plate

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