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Dynamic response of sandwich panels under impulsive loading. (English) Zbl 1469.74056
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Summary: This paper presents analytical method for determining deflection of sandwich panel with structure of fully clamped circular and rectangular plates subjected to impulsive loading. The panel response was modeled in three consecutive phases. Calculations of the cases indicate that the proposed analytical model is based on reasonable assumption. The solutions obtained are in very good agreement with different set of experimental results. This shows the merit of the model and it is hoped that the analysis will be complementary to existing simplified model in providing a quick solution on the mode of plastic deformation of sandwich panel subjected to impulsive loading.

MSC:

74H45 Vibrations in dynamical problems in solid mechanics

74K20 Plates

74E30 Composite and mixture properties

Keywords:

analytical solution; rectangular plate; circular plate; plastic deformation

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