A GENERALISED THERMOELASTIC PROBLEM OF ONE DIMENSIONAL LAYERED COMPOSITE MATERIAL WITH VARIABLE THERMAL CONDUCTIVITY

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Abstract

The present paper describes the development of the application of generalized Thermoelastic Stress Analysis (TSA) of composite materials. Here we considered one-dimensional generalized thermoelastic mathematical model with variable thermal conductivity for heat conduction problem for a layered thin plate. The basic equations are transformed by Laplace integral transform method. The solution was applied to a plate of sandwich structure, which is thermally shock and traction free in the outer sides. The inverses of Laplace transforms are obtained numerically. The results for temperature, stress and displacement distributions are depicted graphically.

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