A refined FSDT for the static analysis of functionally graded sandwich plates

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Abstract

This paper presents a static analysis of functionally graded plates (FGPs) by using a new first shear deformation theory (FSDT). This theory contains only four unknowns, with is even less than the classical FSDT. In this paper a simply supported FG square sandwich plate is subjected to a bi-sinusoidal load. The governing equations for static bending analysis are derived by employing the principle of virtual works. These equations are then solved via Navier-type, closed form solutions. The accuracy of the present theory is ascertained by comparing it with various available solutions in the literature.