عنوان مقاله:

Generalized solution of functionally graded hollow cylinder under torsional load

محل انتشار:

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خلاصه مقاله:

In this paper, a general solution for torsion of hollow cylinders made of functionally graded materials (FGM) was investigated. The problem was formulated in terms of Prandtl's stress and, in general, the shear stress and angleof twist were derived. Variations in the material properties such as Young'smodulus and Poisson's ratio might be arbitrary functions of the radial coordinate. Various material models from the literature were also used and thecorresponding shear stress and angle of twist were individually computed. Moreover, by employing ABAQUS simulations, finite element results were compared with the analytical ones

کلمات کلیدی:

Functionally graded material, Hollow cylinder, Torsion, Finite element method, Arbitrarily varying gradients