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Composite Structures

journal homepage: www.elsevier.com/locate/compstruct



Hygro-thermo-mechanical effects on FGM plates resting on elastic foundations

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ARTICLE INFO

Article history:

Available online 24 May 2010

Keywords:

FGM
Thermal field
Moisture concentration
Elastic foundations

ABSTRACT

A hygrothermal bending analysis is presented for a functionally graded material (FGM) plate resting on elastic foundations. The elastic coefficients, thermal coefficient and moisture expansion coefficient of the plate are assumed to be graded in the thickness direction. The equilibrium equations are given and a number of examples are solved to illustrate bending response of Titanium/Zirconia plates subjected to hygro-thermo-mechanical effects and resting on elastic foundations. The influences played by many parameters are investigated.

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