



ULTIMATE BEHAVIOR OF FIBER GLASS COMPOSITES AT ELEVATED TEMPERATURES

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Abstract

Micromechanical assessment of ultimate response of molded fiber glass (MFG) composites used in structural engineering and acting at elevated temperatures is treated in present paper. The model of the MFG-material at elevated temperatures based on Washizu's variational principle is presented. Numerical treatment of nonlinear problems possibly appearing is made using the updated Lagrangian formulation of motion. Each step of iteration approaches the solution of the linear problem and the feasibility of the FETM-approach is established. Some numerical and experimental results are presented in order to demonstrate the efficiency of procedures suggested.

Keywords and phrases: elevated temperature, FETM-method, micromechanics, molded fiber glass, time response, Washizu's variational principle, wave propagation.

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