ESTIMATING DURABILITY OF A PLATE WITH A TRANSVERSE SEMI-ELLIPTICAL CRACK SUBJECTED TO PURE BENDING

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Abstract

The study deals with a rectangular plate subjected to pure bending. The plate features an initial edge crack of a semi-elliptical shape. Using an analytical computational method we determined the stress intensity factor along the crack front in the plate. We compared the results obtained to the numerical results computed in the ANSYS software package. We performed fracture persistence calculations (predicting the durability of the plate).

Keywords

Stress intensity factor, finite element method, fracture persistence

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