
Effect of the cumulative damage on the designed rate of the low-cycle crack

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The article considers the effect of cyclical patterns of damage on the formation and growth of cracks under thermomechanical loading. The dependence of the crack growth rate and number of cycles, for which the length of the crack will grow by Δl , on cyclical damage to EI437BU steel alloy and 15H2NMFA hull plate is obtained. The necessity of taking into account the effect of accumulated damage kinetic fields to the crack growth rate is justified.

Keywords: damage, damage fields, crack growth rate, low-cycle fracture, durability.

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