

Three dimensional simulation of fatigue crack growth in friction stir welded joints of 2024-T351 Al alloy.

Abstract

Present paper predicts fatigue life and crack growth behaviour of Al 2024-T351 friction stir welded joint by boundary element method, using professional software package FRANC3D. Crack propagation is analyzed for residual stress and stress relaxation in different friction stir welding (FSW) regimes under cyclic loads. Linear elastic fracture mechanics model is applied and simulated parameters are verified with analytical and experimental observations

Keyword: Fatigue crack growth; FRANC3D; Friction stir welding.