

Fatigue Life Estimation Using Single Spot-Welded Joint Fracture Mechanics

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Abstract: *The influence of a spot-welded joint on the overlap section of the specimen, which is critical for spot welded joints subjected to uniaxial in plane loads, on fatigue life is explored in this study. This study was carried out using the ANSYS finite element program. The fatigue life properties of spot-welded specimens with various gap values are numerically calculated using a created computer program and several fatigue-life techniques to see how the gap affects the fatigue life of the spot-welded specimens. With rising gap values, it is noticed that maximum stress and strain values increase, resulting in a loss in fatigue life. Maximum stresses and strains, and hence fatigue-life values, are shown to be relatively constant for gap values less than 0.0025mm.*

Keywords: Fatigue Life, Resistance Spot Welding, Finite Element Analysis, etc.

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