

An Approach for the Assessment of Semi-Elliptical Surface Crack

Authors : Muhammad Naweed, Usman Tariq Murtaza, Waseem Siddique

Abstract : A pallet body approach is a finite element-based computational approach used for the modeling and assessment of a three-dimensional surface crack. The approach is capable of inserting the crack in an engineering structure and generating high-quality hexahedral mesh in the cracked region of the structure. The approach is capable of computing the stress intensity factors along a semi-elliptical surface crack numerically. The objective of this work is to present that the stress intensity factors produced by the approach can be used with confidence for capturing the parameters during the fatigue crack growth.

Keywords : pallet body approach, semi-elliptical surface crack, stress intensity factors, fatigue crack growth

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