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Effect of bonded composite patch on the stress intensity factor for a centercracked plate
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[a] Department of Mechanical Engineering, Kulliyyah of Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia
[b] Department of Aeronautical Engineering, Sudan University of Science and Technology, Khartoum, Sudan

Abstract
Crack propagation until fracture is an important criterion to predict a structure's service life. In order to increase the latter, the cracked component needs to be repaired or replaced. In the present study, a finite element analysis has been carried out to investigate the effects of adhesive thickness, patch thickness and crack length on the passive repair performance of a center-cracked rectangular aluminum plate under mode-I loading condition using finite element ANSYS package. A comprehensive parametric study shows that the stress intensity factor is influenced by the patch thickness, patch size, adhesive material, and adhesive thickness. © 2019.

Author Keywords
Adhesive; Center crack; Composite patch; Finite element; Stress intensity factor

Correspondence Address
Hrairi M.; Department of Mechanical Engineering, Kulliyyah of Engineering, International Islamic University MalaysiaMalaysia; email: meftah@iium.edu.my

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