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## EFFECT OF BONDED COMPOSITE PATCH ON THE STRESS INTENSITY FACTOR FOR A CENTER-CRACKED PLATE

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### 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.

### Keywords

**Author Keywords:** stress intensity factor; center crack; composite patch; adhesive; finite element

**KeyWords Plus:** ALUMINUM PLATE; REPAIR

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