

عنوان مقاله:

Experimental Evaluation of Tensile impact properties of reinforced adhesively scarf joints for composite adherends

محل انتشار:

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خلاصه مقاله:

To increase the impact strength of bonded scarf joint in composite materials, new types of adhesive reinforcement are investigated experimentally. GFRP specimen with 15 deg scarf angle bonded by epoxy adhesive, tested under a low velocity tensile impact. Four different types of reinforcement were used. Carbon continuous and discontinuous fiber (unidirectional and chopped fibers) all in same volume fraction (10%) were added to the epoxy adhesive to bond the specimens. Three joints had unidirectional fibers reinforcement with non-extended , S-shape extended and Z-shape extended type reinforcement and one joint with chopped fiber and a joint without reinforcement. Energy absorption of the joints was calculated to compare the impact strength. Results showed a considerable increase (more than 300%) in impact strength for S-shape extended joint that had an extended unidirectional fibers reinforcement covering adherent's edge.

کلمات کلیدی:

carbon fiber, composite adherend, reinforced adhesive, scarf joint, tensile impact

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