

عنوان مقاله:

Experimental Study of the Low-Velocity Impact (LVI) on CFRP Composite

محل انتشار:

کنفرانس دو سالانه بین المللی مکانیک جامدات تجربی (سال: 1398)

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خلاصه مقاله:

The damage tolerance after barely visible impact damage (BVID) is a critical consideration for the design of composite structures. This study investigated the key driving mechanisms and the damage evolution of the low-velocity impact failure of laminated composites. Samples were manufactured from twelve-layer quasi-isotropic carbon/epoxy laminates. Out-of-plane low-velocity impact with three different energies was applied to prepared composite samples. Through the thickness damage was evaluated by an optical microscope to obtain direct information about the internal damage. Damage modes and the damage process of laminates under varied impact energies are discussed. It is observed, matrix cracking and delamination were developed due to the low-velocity. Moreover, the results show that the primary damage mode was found to be fiber failure at higher impact energies; while, indentation leads to .delamination and matrix cracking failure modes in smaller impact energies

کلمات کلیدی:

.Low-velocity impact (LVI), Carbon/epoxy laminate, Impact response, Damage modes

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