عنوان مقاله:

Numerical and experimental static bending analysis of composite sandwich panels with grid stiffened core before and after transverse impact loading

محل انتشار:

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خلاصه مقاله:

Composite sandwich panels with grid stiffened core are composed of composite face sheets and lattice core. The influence of impact on the flexural strength of these structures is investigated both numerically and experimentally. Two similar specimens were fabricated. One of them was damaged due to the specified impact drop test. Both damaged and undamaged specimens were tested under three-point bending loads. The tests are simulated using ABAQUS commercial software. Comparisons show that the finite element method is an efficient way to reduce the time and cost for estimating bending strength of this type of structures, before and after impact loads. The results show that the energy absorption occurs in the structures mainly due to the induced damage in the impact region on the face sheet of the sandwich panel. Also, the impact in the sandwich face sheets, significantly decreases the flexural strength of the composite sandwich panels with grid stiffened core

کلمات کلیدی:

Composite sandwich plates, Grid stiffened core, Low velocity impact, Bending strength, Impact induced damage, Numerical simulation