

## Effect of Mechanical Loading on the Delamination of Stratified Composite in Mode I

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**Abstract :** The present study is based on the three-dimensional digital analysis by the finite elements method of the mechanical loading effect on the delamination of unidirectional and multidirectional stratified composites. The aim of this work is the determination of the release energy rate  $G$  in mode I and the Von Mises equivalent constraint distribution along the damaged area under the influence of several parameters such as the applied load and the delamination size. The results obtained in this study show that the unidirectional composite laminates have better mechanical resistance one the loading line than the multidirectional composite laminates.

**Keywords :** delamination, release energy rate, stratified composite, finite element method, ply

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