

Optimization of the number of layers for a fixed thickness of a composite material subjected to compression loading

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Abstract : In this paper, the effect of varying the number of layers for a fixed total thickness is investigated. In order to conserve the integrity and the safety of a multilayers composite structure, the search of the optimal number of layers in the cross section, induced the low stress-strain field intensity, is strongly recommended. Meanwhile, this study aims to show how the mechanical response of a multilayers composite plate loaded on a compression in the axial direction, changes when the number of layers increases from for a fixed total thickness.

Keywords : security factor, stress-strain field, Composite material, Compression loading