

Accepted Manuscript

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PII: S1359-8368(16)30192-5

DOI: [10.1016/j.compositesb.2016.03.091](https://doi.org/10.1016/j.compositesb.2016.03.091)

Reference: JCOMB 4192

To appear in: *Composites Part B*

Received Date: 15 January 2016

Revised Date: 18 March 2016

Accepted Date: 30 March 2016

Please cite this article as: Moure MM, García-Castillo SK, Sánchez-Sáez S, Barbero E, Barbero EJ, Influence of Ply Cluster Thickness and Location on Matrix Cracking Evolution in Open-Hole Composite Laminates, *Composites Part B* (2016), doi: [10.1016/j.compositesb.2016.03.091](https://doi.org/10.1016/j.compositesb.2016.03.091).

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INFLUENCE OF PLY CLUSTER THICKNESS AND LOCATION ON MATRIX CRACKING EVOLUTION IN OPEN-HOLE COMPOSITE LAMINATES

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Keywords: B. Stress concentration; B. Strength; C. Damage Mechanics; C. Numerical analysis; Open-hole composite laminates

Abstract

The influence of cluster thickness and its position on the damage evolution of open-hole composite laminates, subjected to uniaxial in-plane tensile loads, is studied in this work. The Discrete Damage Mechanics model of Barbero-Cortes augmented by a fiber damage criterion is employed. Several stacking sequences with clusters in different positions and thicknesses inside the laminate are analyzed. The influence of cluster thickness and its location on: the crack-density evolution, applied load, longitudinal stress and its contour plots is studied for all the stacking sequences selected.

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