Determination of the J integral for laminated double cantilever beam specimens: The curvature approach

A new approach is proposed for measuring the J integral (and thus the fracture resistance) of interface cracks in multiply laminates. With this approach the J integral is found from beam curvatures and applied moments. Knowledge of ply layup and stiffness is not required. In order to test the accuracy of the proposed approach, double cantilever beam specimen loaded with uneven bending moments (DCB-UBM) specimens were tested and analysed using the curvature approach and a method based on laminate beam theory. Beam curvatures were determined using a configuration of strain gauges. Good agreement was obtained between the two approaches. © 2012 Elsevier Ltd. All rights reserved.

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