

Implementation of Degradation Models for Fibre Reinforced Composites

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This work is aimed to implement a new tool for the analysis of failure in long fiber-reinforced composite materials. Puck's theory is implemented in the commercial code ABAQUS considering a two-dimensional and a three-dimensional approach as well. The implementation is intended to provide a widely applicable instrument, describing the main features of failure in composite materials. A general classification of the failure criteria for composites is made first to compare the most widely used failure theories. The description of the main features of the theory chosen for the implementation is then given before describing the key aspects of the implementation in ABAQUS. A final comparison with other models and experimental data is made to assess the reliability of the results provided by the program.

