

## **Prediction of progressive failure in woven glass/epoxy composite laminated panels.**

### **Abstract**

A progressive failure analysis of woven glass/epoxy laminated plates is developed via the non-linear finite element analysis. A progressive failure analysis algorithm has been developed and implemented as a user subroutine in a finite element code (ABAQUS) in order to model the non-linear material behavior and to capture the complete compressive response of woven composite plates made of glass-epoxy material. Tsai-Hill failure theory has been employed in the progressive failure methodology to detect failure of the woven composite laminates. The reliability of the numerical analysis has been validated against the results obtained from quasi- static compression tests. It has been found that the results obtained via the progressive failure analysis correlate reasonably well with the experimental results.

**Keyword:** Progressive failure analysis; Finite element analysis; Woven composites; Failure theory.