

Analysis of the early stages of transverse cracking in fiber-reinforced laminates: fiber/matrix interface crack density approach

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Abstract

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Target journal(s): Composites Part B: Engineering, Composites Part A: Applied Science and Manufacturing, Composite Science and Technology, Composite Structures, Journal of Composite Materials, Composite Communications

1. Introduction

2. Models of Representative Volume Element (RVE)

We start by describing the different idealized micro-structures considered and the corresponding repeating element or RVE used to model them. Fig. ??,

5 Fig. ?? and Fig. ??

3. The fiber/matrix interface crack density approach

3.1. Crack density and normalized crack density

3.2. Effect of crack density on crack growth in UD and cross-ply laminates with a single layer of fibers

¹⁰ *3.3. Effect of thickness on crack growth in UD and cross-ply laminates with a central layer of debonded fibers*

3.4. Effect of crack density and thickness on crack growth in UD and cross-ply laminates

4. Conclusions & Outlook