CLASSICAL APPROACH TO BRITTLE FRACTURE GROWTH

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ABSTRACT

In this current scenario the usage of composite material is under rapid development in the field of industrial, Aerospace, Marine industries. We meet with difficulty of using the composite due to the formation of cracks. Cracks in composites usually appear during the stage of manufacture or in very earlier stage of use. In this paper, Fracture Mechanics has evolved as a result of attempts, to understand and prevent such failures. Here a mathematical model for brittle fracture in a fibre composite along transverse crack growth is given. The probability of spontaneous growth of an initial crack and subcritical crack growth is the solution of a functional equation satisfied by probability of events based on crack growth.

Key words: Fibre composite, brittle fracture, transverse crack growth, functional equation, orthotropic body, Markov chain.