Title

MANAGING SPECIMEN AND GEOMETRIC EFFECTS IN COMPOSITES FATIGUE TESTING

Abstract text

This paper examines the effects of specimen preparation, gripping, and geometry for fatigue testing of structural composites and presents a comparative case study of the performance of popular solutions. Although for static tests these potential issues have been investigated extensively throughout the history of composites research, interest has only recently fallen upon their effects on dynamic loading.

Fatigue tests were conducted on standard glass fibre reinforced composites, to compare the effects of different jaw face designs, tabbed and tab-less gripping, and standard specimen geometries. For the purposes of this study, tests were carried out in tension-tension mode, at a single loading level, to compare the results in terms of average fatigue life, scatter, and confidence intervals. Infrared thermography was used to examine localised specimen heating effects, which are indicative of local variations in loading state.

Keywords

FATIGUE, GEOMETRY, SPECIMEN, THERMOGRAPHY, GRIPPING

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