



DESIGN OF TEST FIXTURE FOR HIGH CYCLE FATIGUE TEST OF FIBER-REINFORCED COMPOSITE LAMINATES

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ABSTRACT

Residual strength of polypropylene epoxy laminated subjected to three frequencies of 30, 50 and 70 Hz and at various cycles were studied. Test rig was specially designed to accommodate a composite type specimen.

Composite type of specimens configuration were used throughout the study in the fatigue test conducted by which the specimen is fixed at one end and subjected to fluctuating load at the free end. Maximum amplitude subjected at the free end was 1.5 mm from the initial position (Zero load). This provides a maximum applied stress at the end which about 10.95 Mpa.

The composite type specimen were then will undergo to tensile test. The purpose of this testing is to determine the maximum stress of the composite while at the same time to find the modulus of elasticity of the composite. From the results achieved, hence the relationship between the modulus and frequency could be gathered.

The composite type specimen that have been fatigue and tensile were then be observed by means of using image analyzer to find out if there have any damage occurred while subjected to the frequency as mentioned above.

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