

عنوان مقاله:

Damage Energy Evaluation in [55/-55]9 Composite Pipes using Acoustic Emission Method

محل انتشار:

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خلاصه مقاله:

In this study, the longitudinal and hoop tensile strengths of an industrial $\pm 55^\circ$ Glass Reinforced Epoxy (GRE) pipe with eighteen layers as well as the associated failure mechanisms are determined. To obtain the longitudinal and hoop tensile strengths values, three specimens are cut from the studied GRE pipe in each direction. A comparison is done between both the strength values, and the fracture pattern of the specimens is studied. Determining the different failure mechanisms which are created during both of the tests, the acoustic emission technique is used. The acoustic emission energy as an important damage parameter in determining the different failure mechanisms of the specimens is depicted for both of the tests and is related to the obtained results from the stress-time curve. A high magnification camera is used to verify the failure mechanisms characterized by the acoustic emission method.

کلمات کلیدی:

GRE composite pipe, Longitudinal strength, Hoop strength, Acoustic emission, Failure mechanisms

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