

Pulsed Thermography for Non Destructive Evaluation of Adhesive Bonds in Basalt Composites

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Abstract:

Basalt fibers is an alternative to glass fibers as reinforcement for composite materials due to its ecological safety, high strength, natural longevity and fire safety. Adhesive bonding is widely used in almost in every industry. Infrared thermography is one of the widely used nondestructive testing technique due to its ability of its non-contact and fast inspection. This paper investigates the detection limit in adhesive bonded structure of basalt composites. An experimental study was carried out to apply pulsed thermographic technique to evaluate adhesively bonded basalt composite laminates. Specimens were prepared with artificial defects like improper adhesion and Teflon inserts. The results were validated using ultrasonic immersion C scan.

Keywords: Non Destructive Evaluation, Basalt Composites, Adhesive Bond, Infrared Thermography, Ultrasonics.

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