

Evaluations on the Composite Bonding Quality by Ultrasonic Amplitude Measurements

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Abstract:

The composite bonding quality was investigated by a resonant low frequency ultrasonic method without the couplant. The propagation of ultrasonic waves between the transmitter and receiver sensor with a resonant frequency of 175 kHz was improved by loading the weights over 1.5 kg. The amplitudes of the receiver sensor attenuated exponentially with an increase of the distance between the transmitter and receiver sensor. The composite bonding qualities evaluated by using the average attenuation with the distance were very similar to the surface morphology after removing the bond of the testing specimen.

Keywords: composite material bonding, ultrasonic amplitude measurements, surface wave