ULTRASONIC TESTING

TEST FUNCTION

Ultrasonic Testing (UT) is a nondestructive test designed to qualify the internal structure of materials with the use of directional, high frequency sound waves. Thickness gauging and flaw detection is commonly examined on composite laminates through UT. In ideal conditions, the waves will reflect back instead of passing through the material if they encounter a flaw, crack, or cavity in the material.

UT FOR AERIAL DEVICES & CONCERNS

For insulated aerial platforms, Ultrasonic Testing originally came into use to examine possible voids and delamination in fiberglass booms produced by centrifugal casting and hand lay-up. In the centrifugal casting method, the boom is removed from the tooling with a gel coat surface that is already on the outside surface of the part. The outer gel coat hides subsurface voids, making a visual inspection impossible. In the hand lay-up method, the fiberglass wall of the boom is too clouded to see into without the aid of UT. Both of these methods have a much higher potential for voids and delamination.

The ultrasonic tests are also highly influenced by the operator, making this test inconsistent or inaccurate. Finding certified UT technicians through the American Society for Nondestructive Testing (ASNT) and utilizing machines calibrated to test each specific part can make UT quite challenging and costly.

WACO BOOM PRODUCTION

The molded filament winding method performed by Waco Boom produces a laminate that is clear enough to allow for a visual inspection for voids that is far more accurate than the ultrasonic method. The molded process used in production of these fiberglass booms presses out potential voids. This pressure produces a boom free from cavities while other methods still require locating and repairing these voids.

For more information regarding Non-Destructive Testing (NDT) methods and other measures of Waco Boom’s product line, please contact info@wacoboom.com