

# ULTRASONIC BONDING / CLADDING TESTING



**TOMTEC NDT MARINE SERVICES PTE LTD**

ULTRASONIC BOND TESTING is a contact, pulse – echo ultrasonic testing method for determining bond defects between the bearing metal and the backing.

Babbitt bearings typically consist of a relatively thin layer of Babbitt cast over a steel or bronze shell that provides structural strength. Proper bonding between the Babbitt liner and the steel or bronze shell is essential for performance, and the thickness of the Babbitt is often of interest as well. Babbitt bonding and thickness can be readily tested with ultrasonic flaw detectors if the Babbitt layer thickness is greater than approximately 0.2 mm (0.008 in.).



Typical types of composite white metal bearings include integral or split journal and thrust bearings with fixed profile as well as journal and thrust pads. In this context, composite white metal bearings also include non-contacting seals, oil supply casings, sliding and guiding elements with similar design features.

The extent of the bond between the babbitt and the backing metal of the sample bearings shall be determined by the use of ultrasonic methods. The ultrasonic signal reflected by the bond interface between the bearing metal and the backing is used to determine bonding defects. The test can be performed on metallic multilayer plain bearings consisting of steel- or copper-based material backings lined with bearing metal based on lead and tin, with layer thickness greater than or equal to 0.5 mm.

## Advantages

- ✓ Only one side surface needs to be accessible
- ✓ Provide quantitative analysis of the internal flaws such as width and depth of defects.
- ✓ Provide immediate results High sensitivity, permitting the detection of extremely small flaws
- ✓ Operation Capability of estimating size, orientation, shape and nature of defects
- ✓ Applicable to most materials
- ✓ Easy interpretation
- ✓ Increased speed of inspection
- ✓ More consistent and reliable results
- ✓ Wide range of material thickness can be inspected

At TOMTEC, we ensure that all our technicians are competent and certified to internationally recognized standards. TOMTEC performs Ultrasonic Bond Testing to provide you with an accurate assessment of the condition of your assets.

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