EDDY CURRENT TESTING

TOMTEC NDT MARINE SERVICES PTE LTD

EDDY CURRENT TESTING is based on the principles of electromagnetic induction and is used to identify or differentiate among a wide variety of physical, structural, and metallurgical conditions in electrically conductive ferromagnetic and nonferromagnetic metals and metal parts.

In Eddy Current Testing, the alternating magnetic field sets up circulating eddy currents in the test part. Any parameter that affects the electrical conductivity of the test area can be detected with the eddy currents.

One of the major advantages of eddy current as an NDT tool is the variety of inspections and measurements that can be performed. Some of the most common are listed below:

- ✓ **Weld Inspection** - Many weld inspections employ ultrasonic NDT for subsurface testing and a complimentary eddy current method to scan the surface for open surface cracks on weld caps and in heat affected zones.
- ✓ **Tubing inspection** - Both in-line inspection of tubing at the manufacturing stage and field inspection of tubing like heat exchangers are common eddy current applications. Both cracking and thickness variations can be detected.
- ✓ **Surface Inspection** - Surface cracks in machined parts and metal stock can be readily identified with eddy current.
- ✓ **Conductivity Testing** - Eddy current testing's ability to measure conductivity can be used to identify and sort ferrous and nonferrous alloys, and to verify heat treatment.
- ✓ **Corrosion Detection** - Eddy current instruments can be used to detect and quantify corrosion on the inside of thin metal such as aluminum skin. Low frequency probes can be used to locate corrosion on second and third layers of metal that cannot be inspected ultrasonically.
- ✓ **Bolt Hole Inspection** - Cracking inside bolt holes can be detected using bolt hole probes, often with automated rotary scanners.

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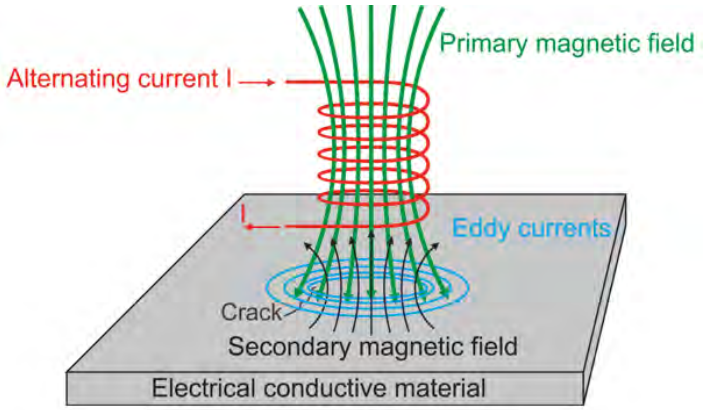
Advantages

- ✓ Sensitive to small cracks and other defects
- ✓ Detects surface and near surface defects
- ✓ Inspection gives immediate results
- ✓ Equipment is very portable
- ✓ Method can be used for much more than flaw detection
- ✓ Minimum part preparation is required
- ✓ Test probe does not need to contact the part
- ✓ Inspects complex shapes and sizes of conductive materials



At TOMTEC, our skilled technicians are experienced in this method, have internationally recognized qualifications and onsite experience. TOMTEC Performs test in accordance with BS EN ISO 17643, ASME BPVC Section V – Article 8, ASTM E376, ASTM E566, ASTM E703, ASTM E1004 and similar National and International Standards.

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