

EDDY CURRENT CRACK DETECTION



Oceaneering Asset Integrity provides Eddy Current inspection techniques to many industry sectors for the detection of surface breaking cracks.

The main application is for the in-service detection of cracks, in particular fatigue cracks in ferrous welds. The technique offers a cost effective alternative where a surface inspection is required on welds painted with a protective coating. Eddy Current does not require removal of coatings and can detect surface breaking cracks through 2 mm of non-conductive coating.

Technique

The geometry and heat-induced material variations around welds in steel would normally prevent inspection with a conventional eddy current probe, however a special purpose “WeldScan” probe has been developed which allows inspection of welded steel structures for fatigue-induced cracking. The “WeldScan” probe incorporates a balanced sensor to minimize the effects of material variations and probe lift-off in the

weld and heat affected zone. This design of the probe greatly reduces the problems of inspecting uneven and undressed weld surfaces where there will also be changes in coating thickness.

Capability

- Sensitive to surface breaking fatigue cracks
- Operated through coatings
- Battery operated
- Readily used by rope access personnel

Applications

- Crane pedestals
- Flare booms
- Storage spheres

Limitations

- Only detects surface cracks
- No depth sizing capability
- Skilled operator required for interpretation of signals

