Eddy Current Testing with multi-element probes

Do you use electrically conductive material? Have you already carried out tests for internal faults or the thickness of your non-magnetic materials? Our specialists would be happy to provide you with their expertise and will arrange for the necessary checks on your materials.

Your tailor-made solution

This form of non-destructive testing offers a number of possibilities: the detection of surface defects or faults very close to the surface, the sorting of materials and material types, the measurement of thickness of non-magnetic materials or of a covering layer, etc.
As regards the detection of defects close to the surface, the eddy current penetration depth and therefore the testing depth itself is directly dependent on the electrical and magnetic properties of the material (from a few hundred microns for steel to a few millimetres for aluminium), and on the probe frequency used.
Various techniques can be used for eddy current tests: checks can be carried out manually, semi-automatically or fully automatically. The advantage of fully automatic testing is that it achieves exact mapping, since the robot scans the entire surface.
Examples

- Inspecting welding seams
- Inspection for corrosion
- Characterisation of the material
- Inspection of pipes, bars or profiles
- Inspection of rivets
- Measurement of thickness of steel plate
- Measurement of thickness of coating

Your result

This service offers you the following advantages:

- The use of products is unnecessary (no (ultrasonic) couplant, no detection agent, etc.);
- Possibility of substituting tests with a penetrant test (PT) in the zones that cannot be accessed
- Recordings for an accurate mapping of the indications and computerised handling
- No contact required
- It is possible to inspect pipelines made of carbon steel without removing the insulation
- Inspection of the finished product without surface degradation (no need to strip the surface to be inspected)
- High detection sensitivity
- Productivity (possibility of high throughput speeds and/or a broad coverage of multi-element probes)
- Possibility of combining this technique with other control techniques that use automated ultrasound (in nuclear power plants, for example)
- Possibility of inspecting complex geometries using probes that are suited to the profiles of the components being analysed
- High mobility (portable equipment and autonomous operation)

Vinçotte can also carry out advanced tailor-made tests wherein the equipment that may be required (scanner and probes) can be developed and specific procedures can be worked out.

Please note

In which situation?

This service is relevant for the following sectors:

- The mechanical manufacturing sector
- Aerospace and aeronautical sector
- Petrochemical sector
- Energy generation sector (nuclear and conventional)
- Automobile sector
- R&D departments and consultancy firms