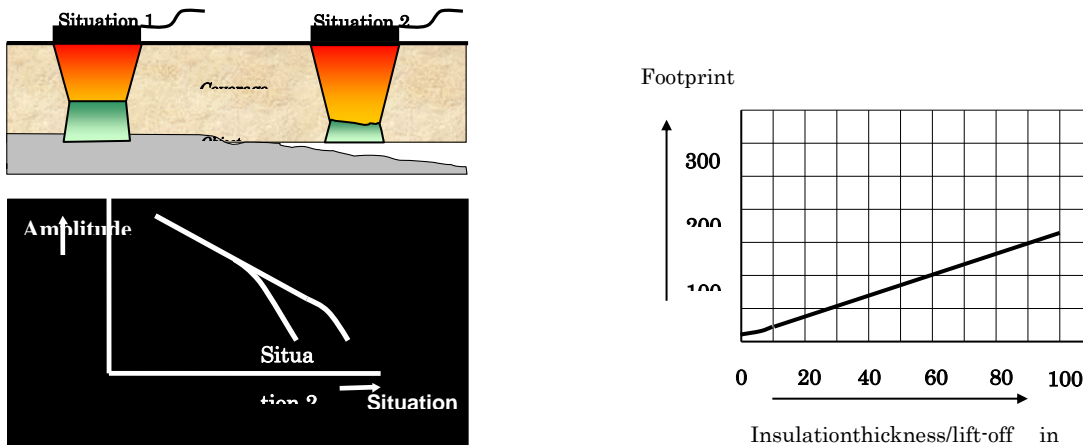


RTD-INCOTEST®

RTD INCOTEST® (an acronym for INSulated COMponent TESTING) is a unique corrosion survey method that allows ferrous objects to be surveyed without the need to make contact with the surface (in contrast with ultrasonics). This means that measurements can be performed on objects covered with insulation, asbestos, fire proofing and concrete or coating. The high costs for removal of insulation can therefore be avoided. Scaffolding can be reduced by using rope access or by mounting the measuring sensor on an extension pole.



Principle

An eddy current sensor is placed on top of the thermal insulation. By means of a low frequency (pulsed) magnetic field, eddy currents are generated in the material. By measuring the duration of the eddy currents, a thickness calculation is made. This thickness calculation gives the average thickness of the material, within the enclosed magnetic field (footprint). The radius of the footprint varies between 25 and 150mm dependent on wall thickness and thickness of the insulation.

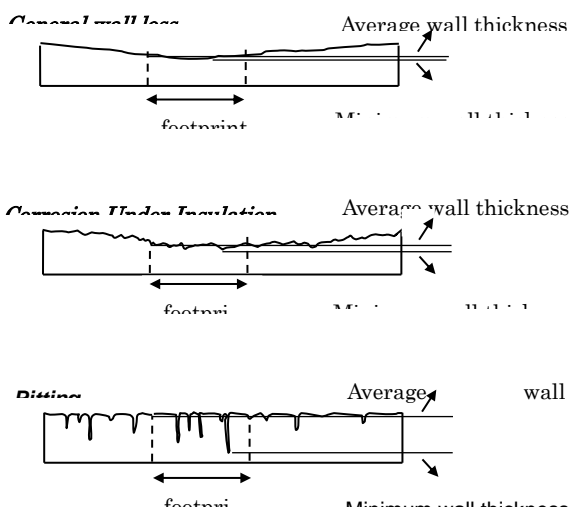
Calibration of the Incotest system requires one measurement on the object to be inspected. The results of this calibration measurement will be stored and used as a reference by performing the measurements. Measured wall thickness will be presented in absolute values (mm or inches) if the wall thickness at the calibration spot is known. If this wall thickness cannot be provided, the nominal wall thickness at the calibration spot is set equal to 100%. Every change in wall thickness will result in a deviation from this 100% level. In this case the results will be presented in percentages. The location of the calibration point is marked in the result tables.

Performance

- maximum wall thickness 6 – 65 mm (nominal wallthickness)
- maximum stand-off 150 mm, in favourable circumstances 200 mm
- diameter 50 mm up to flat plates
- duration one measurement: some seconds (depending on the wallthickness)
- accuracy: $\pm 5\%$
- some of the given values can not be used in combination

Typical applications

- high temperature objects, up to 500°C
- heavily coated objects
- rough (corroded) surfaces
- insulated and coated objects
- object protected by concrete/fireproofing
- object covered with marine growth or fouling
- Sub-Sea inspections



Detectable corrosion types

Incotest measures the volume material in the footprint (activated) area. This volume is presented as an average wall thickness over the footprint area. The minimum remaining wall thickness in this area can be smaller. The amount of variation between the average value and the minimum remaining value will be less by very general wall loss. The amount of variation is bigger by more irregular or very localised corrosion (see figures above). Incotest can therefore only be applied to locate corrosions that cover a larger area.

Corrosion needs to cover at least 50% of the footprint surface in combination with a volume reduction at least of 10% of the footprint area for detection.