

INCOTEST: Corrosion Under Insulation Inspection Tool

RTD INCOTEST (INSulated COmponent TESTing) is based on the pulsed eddy current principle to carry out PEC inspection in a wide range of industry sectors. Pulsed eddy current testing is a reliable way to survey ferrous pipes and vessels through their thermal insulation and protective coatings. Our jointly-developed PEC inspection technology is an excellent tool for prioritising corrosion under insulation inspections. In this technique, the sending coil generates eddy currents at the surface of the material. As they diffuse, they generate a magnetic field that is detected by the receiving coil in the NDT probe. The average remaining wall thickness within the enclosed magnetic field is proportional to the decay time of the received signal.



THE Applus+ SOLUTION

Benefits of deploying the Applus+ RTD INCOTEST CUI inspection tool include:

- Detection of internal and external corrosion/erosion
- No contact needed for the measurement
- No special surface preparation needed
- CUI inspection measurements through marine growth, fouling, concrete, scabs, crude oil
- CUI inspection measurements performed in-line and at depths of up to 3000 metres (9842 feet)
- No consumable chemicals required
- Speed: up to 1,000 measurements a day
- Battery or mains operated
- Best in class for signal-quality evaluation
- Best in class for defect sizing and discrimination (internal/external)
- Suitable for monitoring



- Not influenced by laminations
- Digital storage of measurements

INCOTEST's system-performance characteristics for CUI inspections:

- Nominal wall thickness of 6-65mm (0.236"- 2.559")
- Insulation/coating thickness of up to 200mm (7.874")
- Diameters from 50mm (1.968") up to flat plates
- Temperature range of -150°C to 500°C (-238F-932F)
- Accuracy of +/- 5%
- Duration of one measurement: between 2 and 10 seconds, depending on wall thickness

The Applus+ RTD INCOTEST tool can complete CUI inspections deployed through a number of methods:

- Pipe crawler robot
- Diver
- Operator
- Riser tool
- Rope access
- ROV-crawler
- Scaffolding
- Tripod

The RTD INCOTEST CUI inspection tool has applications in many industry sectors, including subsea NDT and NDT offshore inspections:

- Corrosion under insulation inspections with galvanised sheeting
- CUF pipeline inspection
- CUF vessel inspection
- CUI vessel inspection
- Distillation-columns monitoring
- FAC
- Non-piggable buried lines (pipe crawler inspection)
- Nuclear-power pipes and pipeline inspection
- Riser inspections
- Seawater lift caisson inspection
- Ship hull inspection
- Splash-zone marine structures
- Subsea pipeline inspection

Target customers

RTD INCOTEST is aimed at a range of industries, including:



- Chemical plants
- Offshore platforms
- Port structures
- Power plants
- Refineries
- Storage
- Subsea
- Transmission lines
- Unpiggable pipelines

It can also be used in a variety of circumstances:

- Pre-shutdown/turnarounds
- Shutdown/turnarounds
- Extended life assessments
- Regulations-compliance programmes
- Maintenance and repair programmes
- Monitoring
- Risk prevention
- Dangerous locations (splash zone with rough sea, insulated high-temperature piping, deep water, etc.)

Key customer benefits

This Applus+ technology:

- Supports clients in their screening and prioritisation exercises when many similar items are involved or a single item has extended dimensions (pipelines)
- Facilitates the taking of new measurements and the comparison of old with new
- Reduces the need for accessibility
- Reduces inspection time
- Reduces exposure time to incidents
- Provides data for integrity/risk assessments
- Reduces costs
- Improves the efficiency of other NDT techniques
- Minimises exposure to hazardous substances
- Screens and prioritises inspection during shut down
- Provides the only effective solution in certain situations (e.g. heavy scale, finned tubes)
- Prioritises the item for maintenance
- Identifies areas where inspection is NOT necessary
- Reduces shut-down time
- Minimises exposure in high-risk locations
- Increases the production rate

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- Sorts items in good condition from items in bad condition
- Includes rope-access insulation removal and replacement
- Removes the need for expensive cleaning
- Removes the need for coating removal