



# Engineering Safety Ltd.

International Provider of Functional Safety, Engineering Safety and Inspection Consultancy

## Inspection & Testing (NDT)

Engineering Safety Ltd, (ES) is an international provider of Functional Safety Consultancy, Engineering Safety and Inspection Consultancy Services

ES are competent in providing practical solutions that emphasise the application of the appropriate level of rigour for various industries and applications. Our solutions and services are tried and tested, implemented by major operators in the process industry and accepted by regulating bodies.





## NDT Services & Solutions

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Our network of qualified engineers and technicians can provide the following inspection services and solutions.

### Services:

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- NDT level 3 consultancy
- Procedure development & approval
- Technical auditing
- NDT cross-checking
- Specialised witness and other QA/QC services

### Solutions:

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- Specialist NDT validation
- In-house technical support
- Bespoke application-specific training

## Specialist NDT Validation

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Engineering Safety has a broad network of qualified engineers and technicians who can provide various NDT services. Some examples are as follows:

- Phased Array (PAUT) for flange face corrosion
- Phased Array (PAUT) for in-situ bolt/shaft inspection
- Conventional UT & PAUT on corrosion resistant alloy
- Time of Flight Diffraction (TOFD) for new weldments & in-service inspection
- Computed Radiography (CR) for in-service inspection

## In-House Technical Support

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Engineering Safety can offer a full range of in-house application-focused technical support.

- Support for one-off enquiries
- Support for long term projects
- Focused application-based support
- Ad-hoc NDT consultancy
- In-house NDT trainings, workshops and seminars

## Application Based Training

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Engineering Safety can offer various NDT training disciplines based on application requirements.

- Conventional Ultrasonic (MUT)
  - Phased Array (PAUT)
  - Time of Flight Diffraction (TOFD)
  - Computed Radiography (CR)
  - Portable Hardness Testing (Leeb & UCI)
  - Eddy Current
  - Visual Inspection
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## Pipeline Inspection

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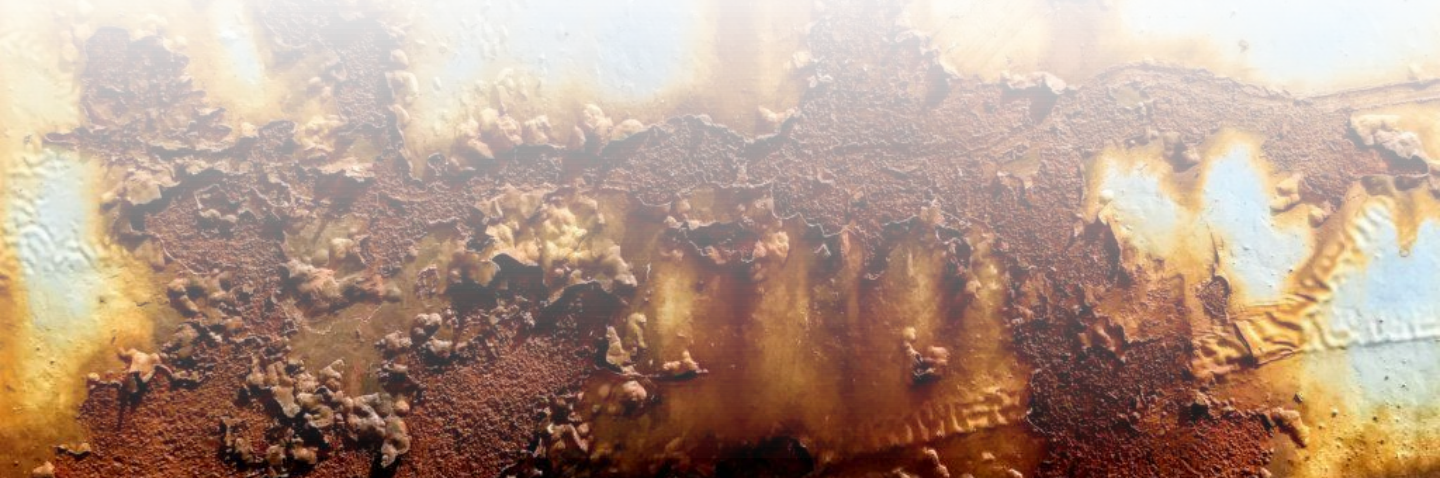
Globally speaking many miles of pipelines transport various fluids from water to crude oil, where internal and external corrosion, cracking and third-party damages are a concern. A water leakage usually doesn't harm the environment; however a petroleum or chemical leaks are always an environmental disaster. Hence, in order to maintain and keep pipelines operating safely, periodic inspections are required to be performed to identify any cause of concern prior to them leading into environmental catastrophes.

## Corrosion Mapping

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Corrosion concerns apply to many industries, these include petrochemical to water treatment and handling. The ability to identify the presence and ultimately the severity of such material deterioration is the key to safety and prevention of operational downtime. Ultrasonic inspection (UT) is the most reliable test method for measuring material thickness. The obtained data is therefore systematically recorded and analysed to monitor the severity of corrosion present in key components. Pipelines, pressure vessels, tanks and heat exchangers are some examples of such critical equipment.

During a corrosion mapping procedure, the material wear and the location of each measurement point is recorded and as such, an overall map of the components wall thickness can be presented over time. Corrosion Mapping enables us to provide a comprehensive overview of the change in the recorded pattern, of any form of flaw, which ultimately indicates the presence of abnormalities such as corrosion or delamination.



## Weld Inspection

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Our network of qualified engineers & technicians, can provide a comprehensive range of NDT weld inspection solutions as follows:

- Visual Inspection of completed welds
- Manual Ultrasonic Testing (MUT)
- Long range Ultrasonic (LRUT)
- Phased Array Ultrasonic Testing (PAUT) & Time of Flight Diffraction (TOFD)
- Hardness Testing (Leeb and UCI)
- Magnetic Particle Inspection (MPI)
- Dye Penetrant Inspection (DPI)
- Eddy Current Inspection (ECI)
- Pulsed Eddy Current (PEC)
- Radiographic Testing (RT)
- Computed Radiography (CR)

Our team of NDT consultants can help to analyse the recorded data, differentiate the flaws from geometrical indications and assist in the development of remedial plans.



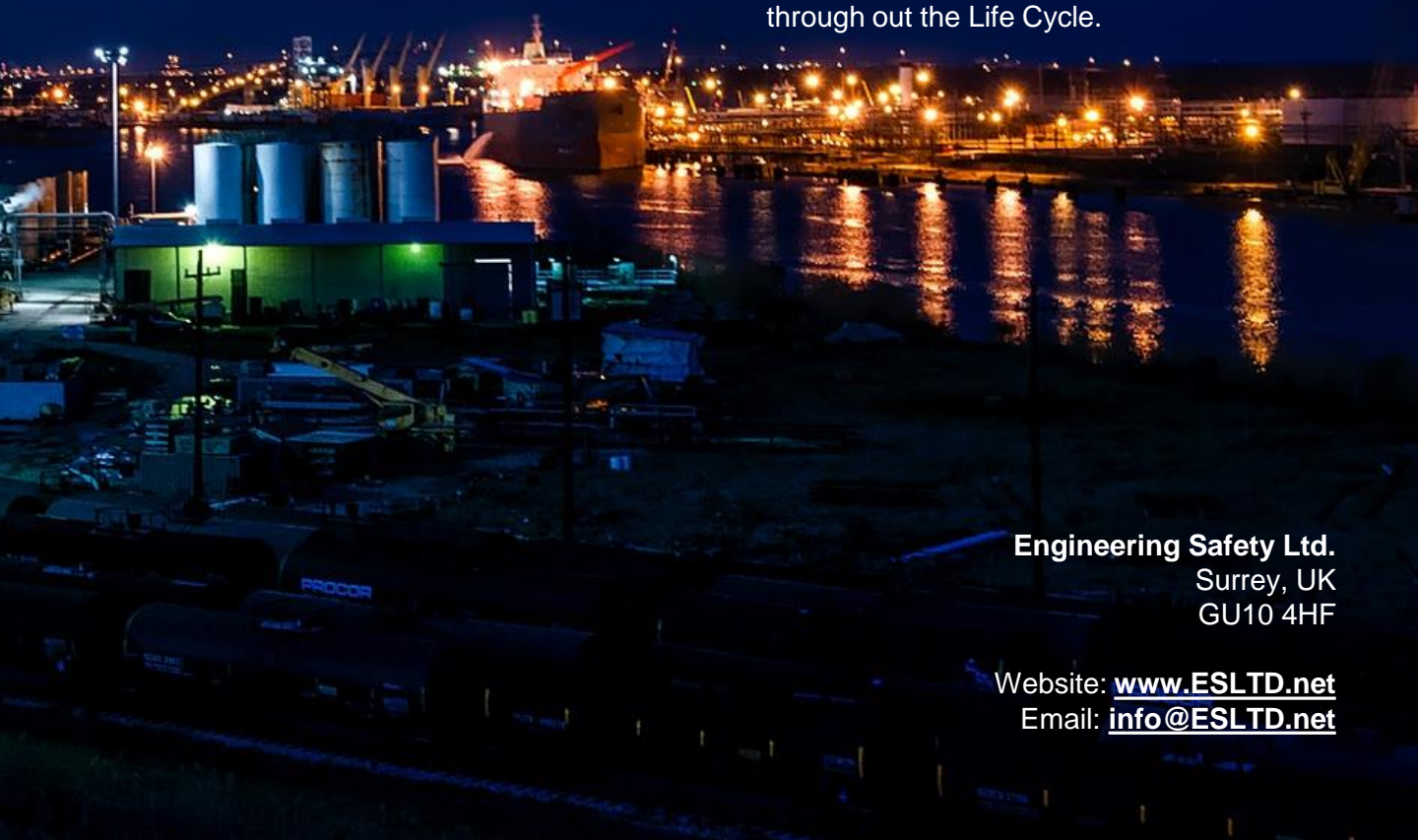


## Our Consultants

We work across the world with engineering organisations, equipment manufacturers and end-users providing services across all industries in every aspect of functional safety for systems, inspection and testing. Our consultants are TUV Functional Safety Engineers and NDT PCN level 3 certified, Quality focused through ISO 9001 Management Systems.

## Our Pledge

Feasibility study, conceptional or detailed design, installation, modification, operation, maintenance through to decommissioning, Engineering Safety have the experience, expertise and in depth knowledge of the international standards as well as the practical knowledge as to how they should be applied so you can be assured that your installations or projects are compliant and remain compliant with all required aspects through out the Life Cycle.



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