

Eddyfi Technologies
Beyond current

Applications
Brochure

TANK INTEGRITY INSPECTION SOLUTIONS

Increase your tank's productivity

Everything you need for a confident integrity assessment.

Greater coverage with a higher probability of detection leads to a more confident maintenance decision.

EDDYFI TECHNOLOGIES STORAGE TANK INSPECTION SOLUTIONS

Tank inspection ensures the safety and integrity of aboveground storage tanks. It contributes to extending the asset's life cycle and preventing accidental leaks and costly decontamination and environmental issues while providing critical data for lifetime assessment and repair strategies.

Two common inspection standards are EEMUA 159 and API 653. When followed, tank owners and operators can determine an optimal repair and maintenance strategy. Calculating corrosion rates from trend information can increase the interval between inspections resulting in increased asset revenue.

There are continued advances in modern non-destructive testing (NDT) technologies that improve detection of defects and sizing accuracy while minimizing inspection turnaround times. Knowing which tool is best for each NDT measurement is essential. NDT techniques can be complementary, and in some cases, they may need to be combined to give the best result.



Associated Piping

- Semi-Autotomated Weld Inspection
- NDT Sweeper
- XY Corrosion Mapping
- Automated Solution
- Pipescan HD
- Sonyks

Roof Plates

- XY Corrosion Mapping
- Scorpion 2
- Paintbrush

Shell Plates

- XY Corrosion Mapping
- Scorpion 2
- Paintbrush
- NDT Sweeper

Annular Plates

- Amigo2
- Reddy
- Gekko

Floor Plates

- FloormapX
- Mantis
- Lyft

Welds

- Amigo2
- Reddy
- Gekko

TECHNOLOGY SYNERGIES

Eddyfi Technologies develops advanced NDT integrated systems to exceed today's inspection demands. Experts in multiple inspection techniques, we can provide a one-stop shop tank inspection solution.

Techniques include:

- Magnetic Flux Leakage (MFL) and STARS
- Automated and manual Ultrasonics (UT)
- Automated and manual Phased-Array Ultrasonics (PAUT)
- Alternating Current Field Measurement (ACFM®)
- Pulsed Eddy Current (PEC)
- Eddy Current Array (ECA)
- Guided Wave Ultrasonics (GWUT)

KEEPING STORAGE TANKS IN-SERVICE LONGER

Choose the right systems for a comprehensive, cost effective storage tank integrity assessment.

TANK PIPING

Piping connected to a storage tank has various vital roles in daily operation, such as product import/export, water drain off, and vapor recovery systems. This piping can be at a low level, high level or even buried underground. Selecting the correct NDT inspection technique is critical to the overall integrity of the storage tank system.

Products

- PAUT corrosion mapping: Automated solutions, NDT Sweeper, NDT Paintbrush or XY Corrosion Mapping and Mantis™
- Conventional UT: Automated solutions
- High-speed MFL corrosion mapping: Pipescan HD
- Insulated piping: Lyft® and Sonyks™
- Buried and restricted access pipelines: Sonyks

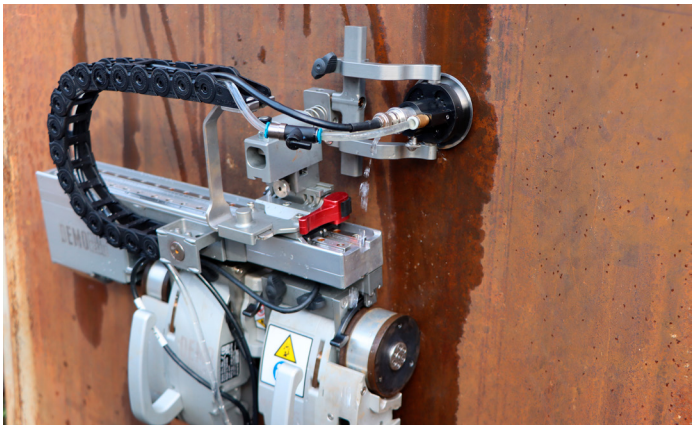


Figure 1: Weld inspection of tank wall with Nav2

TANK FLOOR PLATES

The most common technology used to inspect bottom plates for corrosion is Magnetic Flux Leakage (MFL) because of its sensitivity to corrosion pitting and the ability to inspect nearly 100% of the tank bottom efficiently.

Due to the nature of MFL, it is recommended that a percentage of the detected defects are accurately quantified using Ultrasonics (UT), typically with a UT flaw detector. With advances in technology and scanners, phased array (PAUT) has become the preferred technique due to its superior ability to categorize and size a type of defect, thus ensuring a more accurate integrity assessment.

Products

- Detailed MFL mapping: Floormap®X
- High-speed MFL screening: FloormapX
- Restricted area MFL screening
- Manual phased array: NDT Sweeper or XY Corrosion Mapping and Mantis
- Automated phased array: Automated solutions
- Annular plate with Pulsed Eddy Current (PEC): Lyft®

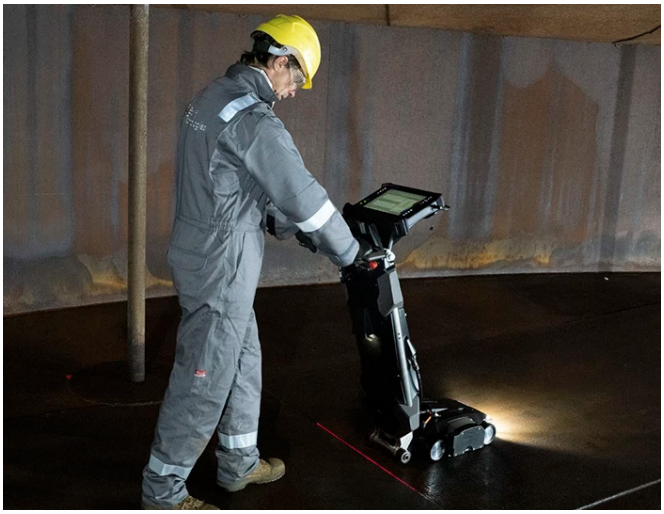


Figure 2: FloormapX for inspecting tank floor plates.

TANK SHELL PLATES

Traditionally, an inspection technician would take three ultrasonic thickness measurements per shell course. The technician would use rope access, scaffolding, or a mobile elevating work platform to access the predetermined locations. This technique can result in misleading results due to the low Probability of Detection (PoD). In addition, providing access for manual inspection is extremely costly and is not productive.

Modern tank shell inspection utilizes automated robotic crawlers. The remote controlled crawlers drive up the tank shell collecting thousands of UT thickness measurements, or a more advanced PAUT system collects corrosion mapping data. This modern technique has many advantages, such as a much higher PoD, increased operator safety, reduced inspection costs, and recorded auditable inspection data.

Products

- High-speed, automated PAUT corrosion mapping
- Manual UT lines scans: NDT Sweeper
- High-speed, automated PAUT corrosion mapping
- Manual PAUT corrosion mapping: NDT Sweeper or XY Corrosion Mapping and Mantis



Figure 3: One-axis corrosion scanning.

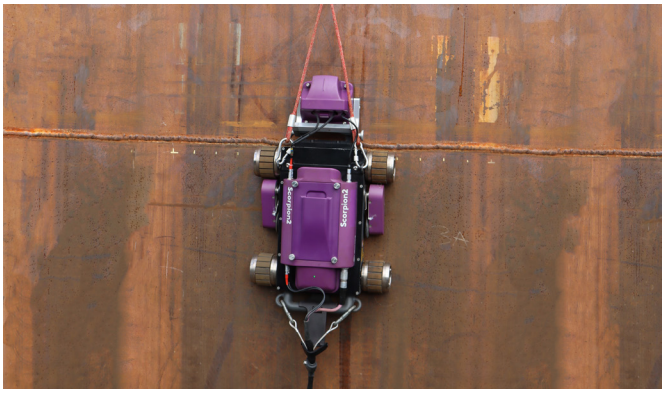


Figure 4: Tank inspection using Scorpion2.

TANK ROOF PLATES

Like the other components of aboveground atmospheric storage tanks, roof plates must be inspected for corrosion and deformation, and cracking in welding joints.

Inspection standards state that walking on tank roofs can be hazardous. The condition and thickness of roof plates should be confirmed before access is permitted. Automated remote access UT scanners can be utilized to determine the roof plate's condition without any human access.

Products

- High-speed, automated UT line scans: Scorpion2
- Manual UT lines scans: NDT Sweeper
- Automated PAUT corrosion mapping
- Manual MFL screening



Figure 5: Scorpion2 for inspecting tank roof plates.

TANK WELDS

The traditional technology for inspecting welds for non-through-wall defects is Magnetic Particle Inspection / Magnetic Testing (MPI/MT).

Inspection authorities now recognize Alternating Current Field Measurement (ACFM) and Eddy Current Array (ECA) as an alternative method to MPI/MT.

These modern techniques do not require the removal of any coatings and can accurately detect and size a weld crack faster and more costeffective than MPI and without the need for consumable chemicals.

Products

- Advanced ACFM instrument: Amigo™ 2
- Portable ECA instrument: Reddy®
- Comprehensive PAUT and ToFD: Semi-automated solution and Mantis



Figure 6: ACFM tank weld inspection.

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