Adresse :Cité 11Décembre 1960 N° 120
2ème Etage Baba Hassen- ALGER
N RC : 16-01 - 20A1551304
NIF : 19517310150012900000
Telephone : 0782 83 79 88
Email: kitalgeria@kit-egy.com
Site web : www.kit-egy.com

Course Title:
ACFM (Alternating Current Field Measurement) Inspection Techniques
DURATION : 8 DAY

Prerequisites: Basic understanding of NDT principles and experience with electromagnetic testing methods is beneficial but not required.

Course Description:
This course offers a comprehensive overview of Alternating Current Field Measurement (ACFM), an advanced electromagnetic testing method primarily used for detecting surface-breaking cracks in both ferromagnetic and non-ferromagnetic materials. Through theory and hands-on practical sessions, participants will learn how ACFM works, how it differs from other nondestructive testing (NDT) techniques, and why it is especially effective for inspecting welds and critical structural components. Emphasis will be placed on understanding ACFM equipment operation, signal interpretation, and reporting techniques for accurate flaw detection.

Course Target:
This course is ideal for NDT inspectors, engineers, and technicians who seek to add ACFM to their skill set, as well as asset integrity specialists and managers responsible for structural integrity assessments. It's also suited for personnel working in sectors such as oil and gas, marine, aerospace, and manufacturing, where structural inspections and high-confidence crack detection are critical.

Course Content Outline:
Introduction to ACFM Technology

Overview of ACFM principles
Comparison with other NDT methods like Eddy Current and Magnetic Particle Testing
Advantages of ACFM for surface-breaking crack detection
Electromagnetic Theory for ACFM

Fundamentals of electromagnetic fields and their interactions with materials
Basics of alternating current (AC) in field measurement applications
ACFM Equipment and Setup

Overview of ACFM inspection tools and sensors
Equipment calibration and setting operational parameters
Hands-on training on ACFM probe handling
Inspection Procedures and Techniques

Best practices for ACFM inspections on welds and structural components
Detailed inspection procedures for both ferromagnetic and non-ferromagnetic materials
Safety protocols during ACFM inspection
Data Collection and Signal Interpretation

Basics of interpreting ACFM signals
Understanding ACFM data representation (real-time images, crack depth estimation)
Practical session on data collection and signal processing
Defect Detection and Sizing

Techniques for identifying and sizing surface-breaking cracks
Recognizing different defect types and their impact on material integrity
Applications of ACFM in Industry

Case studies across various industries (e.g., offshore, marine, aviation)
Real-world applications and inspection challenges
Reporting and Documentation

Standard report preparation for ACFM findings
Documenting inspection results and ensuring regulatory compliance
Practical exercises on report creation
Hands-on Practical Session

Performing ACFM inspections on various sample materials
Troubleshooting common equipment issues during field applications
Final Assessment and Certification

Practical exam and theoretical test
Issuance of course completion certificate upon successful evaluation
Learning Outcomes:
By the end of the course, participants will be able to:

Explain the fundamental principles and advantages of ACFM technology.
Operate ACFM equipment effectively and conduct standard inspections.
Interpret ACFM signals to detect and size surface-breaking defects accurately.
Document and report findings according to industry standards.