MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

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STRUCTURAL COATINGS FOR THE OIL AND GAS INDUSTRY – MATERIALS DESIGN AND SELECTION, APPLICATION AND TESTING

"Protecting Infrastructure and Extending Asset Life in Harsh Oilfield Environments"

Schedule

Date	Venue	Fees (Face-to-Face)
21 – 22 Sep 2026	London – UK	USD 3495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

Structural coatings are a critical line of defense against corrosion, erosion, chemical attack, and environmental degradation in oil and gas infrastructure. With operations spanning offshore platforms, pipelines, storage tanks, and process facilities, selecting the right coating system—and applying it correctly—is essential for long-term asset protection and compliance with international standards.

This comprehensive 5-day training course covers the full lifecycle of structural coatings, including material selection, surface preparation, application techniques, inspection, failure analysis, and standard testing. Participants will develop the skills needed to optimize coating performance, reduce downtime, and ensure safe, cost-effective operations in challenging oilfield environments.

Objectives

By the end of this course, participants will be able to:

- Select suitable coating systems based on service environment, substrate, and performance requirements
- Apply international standards for coating design, surface preparation, and testing (ISO, NACE, SSPC, API)
- Evaluate coating failures and recommend remediation or replacement strategies
- Understand application methods and quality control procedures in field and shop conditions
- Implement effective inspection and maintenance plans to extend coating life

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Why Attend

- Strengthen your understanding of coating materials and performance properties
- Learn how to design coating systems to meet lifecycle, safety, and operational goals
- Improve coating reliability through best-practice application and inspection methods
- Avoid costly failures by recognizing early signs of coating degradation
- Stay compliant with global standards and client specifications

Target Audience

This program is designed for:

- Coating engineers and corrosion engineers
- QA/QC and inspection professionals
- Maintenance and asset integrity managers
- EPC contractors and project engineers
- Materials, mechanical, and surface preparation specialists

Individual Benefits

Key competencies that will be developed include:

- Knowledge of coating chemistry, application technologies, and degradation mechanisms
- Capability to evaluate and select protective coatings based on field demands
- Proficiency in reviewing technical specifications and interpreting coating failures
- Familiarity with coating test methods and documentation standards
- Confidence in overseeing coating operations from planning to inspection

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Increased coating longevity and reduced maintenance frequency
- Improved quality assurance and safety across coated infrastructure
- Fewer shutdowns and repair costs due to premature coating failure
- Enhanced compliance with client, regulatory, and industry standards
- Stronger collaboration between operations, engineering, and inspection teams

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Core principles of coating technology, standards, and selection strategies
- Case Studies – Real-world coating failures and remediation success stories
- Workshops – Exercises on coating specification, failure diagnosis, and inspection planning
- Peer Exchange – Group discussions on coating issues across asset types and geographies
- Tools – Checklists, inspection forms, coating system design templates, and standards references

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Course Outline

DETAILED 5-DAY COURSE OUTLINE

Training Hours: 7:30 AM – 3:30 PM Daily Format: 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Introduction to Coatings and Service Environments

- Module 1: Overview of Protective Coatings (07:30 – 09:30) • Role of coatings in oil and gas asset protection • Coating types: epoxy, polyurethane, zinc-rich, ceramic, fluoropolymers • Substrate considerations and design factors
- Module 2: Environmental and Operational Conditions (09:45 – 11:15) • Offshore vs. onshore, splash zone, buried, and high-temperature exposures • Chemical, mechanical, and UV degradation • Material compatibility and coating selection matrix
- Module 3: Coating System Design Principles (11:30 – 01:00) • Coating thickness, layers, and system architecture • Adhesion, flexibility, abrasion resistance • Use of primers, tie coats, and topcoats
- Module 4: Workshop – Coating Selection Case Review (02:00 – 03:30) • Matching coating systems to operational requirements • Review of datasheets and performance criteria • Group recommendations and discussion

Day 2: Surface Preparation and Application Methods

- Module 1: Surface Preparation Standards and Methods (07:30 – 09:30) • SSPC, ISO 8501, NACE surface prep grades • Mechanical and abrasive blasting techniques • Surface profile and cleanliness verification
- Module 2: Coating Application Techniques (09:45 – 11:15) • Spray (airless, conventional), brush, and roller methods • Environmental controls (humidity, dew point, temperature) • Curing methods and overcoat windows
- Module 3: Quality Assurance During Application (11:30 – 01:00) • Wet film and dry film thickness measurement • Holiday detection and adhesion testing • Documentation and site records
- Module 4: Workshop – Application Method Selection (02:00 – 03:30) • Review of field and shop application scenarios • Equipment selection and procedural planning • Group task: develop an application plan

Day 3: Coating Failures and Performance Evaluation

- Module 1: Common Coating Failures (07:30 – 09:30) • Blistering, delamination, underfilm corrosion, chalking • Causes of premature failure and case study reviews • Coating system compatibility issues
- Module 2: Failure Analysis and Remediation (09:45 – 11:15) • Failure investigation methodology • Sample collection and lab analysis • Remedial actions and touch-up protocols
- Module 3: In-Service Coating Performance Monitoring (11:30 – 01:00) • Inspection frequency and methods • Non-destructive testing (NDT) tools for coatings • Corrosion under insulation (CUI) inspection
- Module 4: Workshop – Failure Diagnosis Lab (02:00 – 03:30) • Review failed coating samples or images • Root cause identification • Remediation recommendations

Day 4: Coating Inspection and Testing Standards

- Module 1: Coating Inspection Process (07:30 – 09:30) • Roles of inspectors and project quality teams • Inspection planning and hold points • Contractor vs. third-party responsibilities
- Module 2: Laboratory and Field Testing Methods (09:45 – 11:15) • Adhesion (pull-off), impact, abrasion, salt spray, cathodic disbondment tests • Accelerated aging and field performance simulation • Interpreting test results for acceptance
- Module 3: Standards and Specifications Review (11:30 – 01:00) • API RP 583, NACE SP0108, ISO 12944, SSPC standards • Specification writing and enforcement • Integration into procurement and QA/QC
- Module 4: Workshop – Test Plan Development (02:00 – 03:30) • Create a coating test plan for a facility or pipeline • Align testing with expected performance and risks • Group feedback and refinement

Day 5: Lifecycle Planning and Coating Program Optimization

- Module 1: Coating Lifecycle Management (07:30 – 09:30) • Service life estimation and warranty expectations • Maintenance planning and touch-up strategies • Budgeting and coating program ROI

- Module 2: Digital Tools and Emerging Technologies (09:45 – 11:15) • Coating inspection drones, data capture apps • AI-assisted coating failure prediction • New smart coating technologies
- Module 3: Final Case Study and Review (11:30 – 01:00) • Group review of a complex coating project • Identification of risks, milestones, and QA needs • Lessons learned and industry best practices
- Module 4: Final Assessment and Closing Session (02:00 – 03:30) • Knowledge quiz and open Q&A • Certificate distribution • Course wrap-up and networking

Certification

Participants will receive a Certificate of Completion in Structural Coatings for the Oil and Gas Industry, confirming their expertise in coating design, selection, application, inspection, and lifecycle management tailored to oil and gas environments.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**