

## STRUCTURAL COATINGS

*"Enhancing Durability, Protection, and Performance of Structures Through Advanced Coating Technologies"*

### Schedule

| Date             | Venue           | Fees (Face-to-Face)   |
|------------------|-----------------|-----------------------|
| 26 - 30 Apr 2026 | Manama, Bahrain | USD 3495 per delegate |

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

### Introduction

Structural coatings play a vital role in preserving the integrity and service life of buildings, bridges, industrial plants, and infrastructure exposed to environmental and mechanical stress. The right coating system can prevent corrosion, chemical attack, moisture ingress, and structural deterioration—saving costs and ensuring safety.

This 5-day intensive course provides participants with practical knowledge on coating technologies, application methods, failure analysis, inspection, and maintenance strategies. Emphasis is placed on surface preparation, coating system selection, specification writing, and adherence to global standards such as SSPC, NACE, ISO, and ASTM.

### Objectives

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

- Select appropriate structural coatings based on substrate, environment, and service life
- Apply industry standards for surface preparation, priming, and multi-coat systems
- Evaluate coating performance through testing and inspection techniques
- Diagnose common coating failures and propose effective remedies
- Develop maintenance plans and specifications for protective coatings

## Why Attend

- Prevent premature degradation of structural assets through correct coating practices
- Reduce life-cycle maintenance costs with optimal protective systems
- Understand the science behind corrosion and material deterioration
- Gain practical skills in specifying, inspecting, and troubleshooting coatings
- Ensure compliance with global protective coating standards and practices

## Target Audience

This program is designed for:

- Civil, mechanical, and materials engineers
- Maintenance and asset integrity managers
- Inspection and quality assurance professionals
- Project managers and contractors in infrastructure and plant projects
- Anyone responsible for selecting, applying, or managing structural coatings

## Individual Benefits

Key competencies that will be developed include:

- Understanding coating chemistries and performance characteristics
- Mastery of application techniques and surface preparation methods
- Skills in defect detection and resolution
- Ability to interpret and enforce coating specifications and standards
- Knowledge in developing lifecycle coating and maintenance plans

## Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved protection of structural assets against corrosion and degradation
- Reduced cost of rework, failures, and premature coating failures
- Enhanced inspection, quality assurance, and contractor oversight
- Alignment with industry standards (SSPC, NACE, ISO, ASTM)
- Support for safe, durable, and reliable facility operations

## Instructional Methodology

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

- Strategy Briefings - Coating system selection, environmental factors, and material compatibility
- Case Studies - Real-world coating failures and success stories in infrastructure and industry
- Workshops - Coating system specification, surface profile assessment, and defect evaluation
- Peer Exchange - Project experiences, QA/QC challenges, supplier insights
- Tools - SSPC surface prep guides, coating thickness charts, inspection templates

## 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: Fundamentals of Structural Coatings

- Module 1: Introduction to Protective Coatings (07:30 - 09:30) • Types of coatings, coating chemistry, functions
- Module 2: Corrosion and Degradation Mechanisms (09:45 - 11:15) • Electrochemical corrosion, UV, moisture, abrasion
- Module 3: Coating System Components and Selection Criteria (11:30 - 01:00) • Primers, intermediates, topcoats; environmental conditions
- Module 4: Workshop - Select Coatings for Different Structures (02:00 - 03:30) • Coating systems for steel, concrete, and marine environments

### Day 2: Surface Preparation and Application Techniques

- Module 5: Surface Preparation Standards (07:30 - 09:30) • SSPC-SP, ISO 8501, abrasive blasting, power tools
- Module 6: Application Methods and Equipment (09:45 - 11:15) • Brush, roller, spray (airless, conventional), curing
- Module 7: Environmental Conditions and Application Variables (11:30 - 01:00) • Humidity, dew point, temperature, film thickness
- Module 8: Workshop - Evaluate Surface Profiles and Prep Quality (02:00 - 03:30) • Hands-on inspection techniques using visual standards

### Day 3: Inspection and Quality Control

- Module 9: Inspection Tools and Procedures (07:30 - 09:30) • Dry film thickness (DFT), adhesion, pinhole detection
- Module 10: Acceptance Criteria and Tolerances (09:45 - 11:15) • ASTM D1186, SSPC-PA 2, ISO 19840
- Module 11: Contractor Oversight and Documentation (11:30 - 01:00) • Inspection records, non-conformance, corrective actions
- Module 12: Workshop - Develop a Coating QA/QC Plan (02:00 - 03:30) • Project-based inspection checklist creation

### Day 4: Failure Analysis and Remediation

- Module 13: Common Coating Failures and Root Causes (07:30 - 09:30) • Peeling, blistering, underfilm corrosion, chalking
- Module 14: Failure Investigation and Reporting (09:45 - 11:15) • Sample collection, lab testing, documentation
- Module 15: Repair Strategies and Recoating (11:30 - 01:00) • Surface prep for repair, compatibility of new coats
- Module 16: Workshop - Diagnose and Report on a Coating Failure (02:00 - 03:30) • Analyze images and specs, propose repair options

### Day 5: Lifecycle Planning and Standards Integration

- Module 17: Maintenance and Recoating Schedules (07:30 - 09:30) • Inspection intervals, degradation monitoring
- Module 18: Coating Specification Development (09:45 - 11:15) • Writing scope, technical clauses, QA/QC inclusion
- Module 19: Codes, Certifications, and Contractor Evaluation (11:30 - 01:00) • SSPC-QP, NACE certification, bid evaluation
- Module 20: Final Workshop - Draft a Structural Coating Plan (02:00 - 03:30) • Create a lifecycle coating strategy for a facility asset

## Certification

Participants will receive a Certificate of Completion in Structural Coatings, validating their capability to evaluate, specify, apply, inspect, and manage protective coatings to ensure long-term structural durability and regulatory compliance.

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