

Course No. 1291

Coating Inspection & Quality Control Training Course

CORROSION, INSPECTION & NDT
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Coating Inspection & Quality Control Training Course is a comprehensive professional program designed to develop the technical knowledge and practical inspection skills required to evaluate protective coating systems and ensure their quality, integrity, and long-term performance. The course focuses on the complete coating inspection process, from surface preparation and environmental conditions through coating application, inspection, testing, defect identification, documentation, and final acceptance. It is particularly relevant to organizations where corrosion protection and asset integrity are critical to operational reliability, safety, and lifecycle cost management.

Protective coatings are widely used to protect steel structures, pipelines, storage tanks, pressure equipment, industrial facilities, marine assets, bridges, infrastructure, and mechanical equipment from corrosion and environmental deterioration. Poor surface preparation, unsuitable coating selection, incorrect application conditions, inadequate film thickness, contamination, improper curing, and insufficient quality control can significantly reduce coating performance and lead to premature deterioration. Effective coating inspection therefore plays a critical role in ensuring that coating systems are applied in accordance with approved specifications, project requirements, manufacturer recommendations, and applicable industry standards.

This course provides participants with a structured understanding of coating technology, corrosion mechanisms, surface preparation methods, coating materials, application techniques, inspection procedures, testing methods, coating defects, repair requirements, and quality control documentation. Particular emphasis is placed on practical inspection activities such as environmental condition monitoring, surface profile measurement, soluble salt testing, dust assessment, wet film thickness measurement, dry film thickness measurement, adhesion testing, holiday detection, and visual inspection.

The Coating Inspection & Quality Control Training Course combines technical instruction with practical exercises, inspection scenarios, case studies, and quality-control activities. Participants will learn how to identify coating failures, interpret inspection results, evaluate compliance against project specifications, communicate non-conformities, and support corrective actions. The program is suitable for industrial and infrastructure projects where coating quality, corrosion control, asset integrity, and reliable inspection practices are essential to achieving safe and sustainable asset performance.

Objectives

- Analyze the fundamentals of corrosion protection and the role of protective coating systems within industrial asset integrity programs.
- Evaluate coating specifications, technical requirements, product data, and inspection criteria before coating work begins.
- Assess surface preparation methods and verify surface cleanliness, surface profile, and environmental conditions before coating application.
- Apply appropriate coating inspection and quality control techniques throughout the preparation, application, curing, and acceptance stages.
- Measure wet film thickness and dry film thickness accurately using appropriate inspection equipment and procedures.
- Evaluate coating adhesion, holiday detection results, surface contamination, curing conditions, and other relevant quality indicators.
- Identify common coating defects and determine their likely causes, severity, and appropriate corrective actions.
- Assess coating application activities against approved procedures, manufacturer requirements, project specifications, and applicable standards.
- Develop effective coating inspection records, non-conformance reports, test documentation, and final quality-control records during the course.
- Strengthen communication between coating inspectors, contractors, quality personnel, engineers, project managers, and asset owners through clear inspection reporting.
- Design a practical coating quality-control approach that supports corrosion prevention, asset reliability, and lifecycle performance.

Who Should Attend

This course is designed for coating inspectors, painting inspectors, quality control inspectors, quality assurance professionals, corrosion engineers, materials engineers, mechanical engineers, maintenance engineers, project engineers, construction engineers, welding and fabrication professionals, and technical specialists involved in protective coating activities. It is also suitable for supervisors, site managers, project managers, contractors, subcontractors, and personnel responsible for monitoring industrial painting and coating operations.

The program is particularly relevant to professionals working on pipelines, storage tanks, refineries,

petrochemical facilities, power plants, manufacturing facilities, steel structures, marine infrastructure, offshore and onshore assets, bridges, water treatment facilities, industrial equipment, and major construction and maintenance projects. It can also benefit procurement and technical personnel involved in evaluating coating materials, coating specifications, inspection requirements, and contractor performance.

Quality managers, QA/QC managers, corrosion management teams, asset integrity professionals, inspection departments, maintenance departments, engineering consultants, and project decision-makers can use the course to strengthen coating quality management and improve the consistency of inspection practices. The content is suitable for both professionals who perform field inspections and managers who supervise coating quality, contractor compliance, and project acceptance.

Learning Outcomes

- Explain the relationship between corrosion mechanisms, coating systems, surface preparation, and asset protection.
- Select appropriate inspection activities for different stages of a coating project.
- Verify surface cleanliness and surface preparation requirements before coating application.
- Measure environmental conditions including temperature, relative humidity, dew point, and surface temperature.
- Conduct surface profile measurements and evaluate results against specified requirements.
- Perform wet film thickness and dry film thickness measurements using appropriate techniques.
- Assess coating adhesion and interpret relevant inspection and test results.
- Detect common coating defects including pinholes, blistering, cracking, runs, sagging, dry spray, under-thickness, over-thickness, poor adhesion, and contamination.
- Evaluate coating application and curing conditions against approved procedures and technical specifications.
- Prepare clear inspection reports, quality records, non-conformance reports, and corrective-action documentation.
- Determine appropriate inspection and testing requirements for different coating systems and industrial applications.
- Support final coating acceptance through systematic inspection, documentation, defect resolution, and verification.

Course Outline

DAY 01

Fundamentals of Protective Coatings, Corrosion, and Inspection

- Principles of corrosion and corrosion prevention
- Role of protective coatings in asset integrity and lifecycle management
- Types of industrial coating systems and their applications
- Coating components, properties, compatibility, and performance characteristics

PRACTICAL APPLICATION

Review of a coating specification and identification of critical inspection requirements

DAY 02

Surface Preparation and Environmental Condition Inspection

- Surface preparation methods including abrasive blasting, mechanical preparation, and power-tool cleaning
- Surface cleanliness requirements and visual assessment
- Surface profile measurement and profile acceptance criteria
- Environmental conditions: air temperature, surface temperature, relative humidity, and dew point
- Contamination assessment including dust, oil, grease, moisture, and soluble salts

PRACTICAL APPLICATION

Conducting a surface preparation inspection and determining whether conditions are acceptable for coating application

DAY 03

Coating Application and Quality Control

- Coating application methods including brush, roller, conventional spray, and airless spray
- Mixing, thinning, induction time, pot life, and material handling requirements

DAY 03 — CONTINUED

- Stripe coating, multi-coat systems, recoat intervals, and curing requirements
- Wet film thickness measurement and quality control
- Dry film thickness measurement and interpretation of inspection results

PRACTICAL APPLICATION

Inspecting a multi-coat protective coating system and evaluating film thickness compliance

DAY 04

Coating Testing, Defects, and Failure Analysis

- Adhesion testing principles and practical considerations
- Holiday and pinhole detection for protective coating systems
- Visual inspection techniques and defect classification
- Common coating defects, their causes, and prevention methods
- Coating failure investigation and corrective-action planning

PRACTICAL APPLICATION

Analyze coating defects from inspection scenarios and determine probable causes and recommended corrective actions

DAY 05

Coating Quality Assurance, Documentation, and Final Acceptance

- Developing coating inspection and test plans
- Quality-control documentation and inspection checkpoints
- Non-conformance reporting and corrective-action verification
- Contractor and applicator quality monitoring
- Final inspection, acceptance criteria, punch-list management, and close-out documentation

DAY 05 — CONTINUED

FINAL WORKSHOP

Develop a complete Coating Inspection & Quality Control plan covering surface preparation, environmental monitoring, coating application, testing, defect management, documentation, final acceptance, and ongoing quality improvement

Register or Request More Information

Course page: <https://quest-training.com/courses/coating-inspection-quality-control-training-course>

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