QUEST
Professional Center

PROFESSIONAL TRAINING COURSE

Course No. 1293

Welding Inspection Training Course

CORROSION, INSPECTION & NDT
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION
5 Days

DELIVERY
Classroom

LOCATION
Vienna, Austria

DATES
7 – 11 Dec 2026

Scheduled Event Details

CITY	Vienna, Austria
DATE	7 – 11 Dec 2026
DELIVERY TYPE	Classroom
COURSE FEE	€6,400

Course Overview

The Welding Inspection Training Course is a professional technical program designed to develop the knowledge and practical skills required to inspect welding activities, evaluate weld quality, identify welding defects, and verify compliance with approved procedures, project specifications, drawings, codes, and quality requirements. The course provides a structured approach to welding inspection before, during, and after welding, enabling participants to contribute effectively to quality assurance, fabrication control, asset integrity, and operational reliability.

Welding is a fundamental manufacturing and construction process used across pipelines, pressure vessels, storage tanks, steel structures, industrial equipment, power generation facilities, manufacturing plants, infrastructure projects, and maintenance operations. The quality of welded joints directly influences the structural and mechanical integrity of equipment and structures. Effective welding inspection helps organizations detect defects at the appropriate stage, reduce unnecessary rework, verify compliance, and support the safe and reliable operation of welded assets.

This course covers the essential elements of welding inspection, including welding processes, welding terminology, materials, welding procedure specifications, welder qualifications, joint preparation, consumable control, preheating, interpass temperature, visual inspection, dimensional inspection, non-destructive testing, weld defects, acceptance criteria, repair requirements, and inspection documentation. Participants will develop a systematic understanding of inspection activities and learn how to distinguish acceptable workmanship from conditions requiring corrective action.

The Welding Inspection Training Course combines technical instruction with practical exercises, case studies, inspection scenarios, defect identification activities, and documentation exercises. Participants will learn how to inspect welding activities systematically, interpret inspection findings,

communicate non-conformities, support corrective actions, and prepare clear inspection records. The program is suitable for organizations seeking to strengthen welding quality control, improve fabrication consistency, and support the integrity and reliability of welded equipment and structures.

Objectives

- Analyze fundamental welding inspection principles and their role in quality assurance and asset integrity.
- Evaluate welding specifications, drawings, procedures, and inspection requirements before welding activities begin.
- Apply systematic inspection techniques before, during, and after welding operations.
- Assess welding procedure specifications and welder qualification records against applicable project requirements.
- Verify base materials, welding consumables, identification, storage, and traceability requirements.
- Evaluate joint preparation, fit-up, alignment, preheating, interpass temperature, and welding parameters.
- Identify and classify common welding defects and determine their potential causes and significance.
- Apply appropriate visual inspection techniques and recognize when non-destructive testing is required.
- Interpret basic non-destructive testing results and compare findings with specified acceptance criteria.
- Prepare accurate welding inspection reports, non-conformance records, and corrective-action documentation.
- Strengthen technical decision-making regarding weld acceptance, repair, rejection, and re-inspection.
- Develop a practical welding inspection approach that supports quality, safety, reliability, and project requirements.

Who Should Attend

This course is designed for welding inspectors, quality control inspectors, QA/QC professionals, welding engineers, mechanical engineers, fabrication engineers, project engineers, inspection engineers, materials engineers, maintenance engineers, construction supervisors, welding supervisors, fabrication supervisors, and technical specialists involved in welding and fabrication activities.

The program is particularly relevant to professionals working on pipelines, pressure vessels, storage tanks, steel structures, industrial equipment, power plants, manufacturing facilities, petrochemical installations, construction projects, maintenance operations, and infrastructure projects. Contractors, subcontractors, engineering consultants, fabrication companies, and personnel responsible for reviewing welding documentation and inspection records can also benefit from the program.

Quality managers, project managers, fabrication managers, inspection managers, asset integrity professionals, and technical decision-makers will gain practical knowledge that can support effective control of welding activities, improved communication between inspection and production teams, and more consistent decisions regarding weld quality and acceptance.

Learning Outcomes

- Explain the principles, terminology, and objectives of welding inspection.
- Identify major welding processes and understand their influence on weld quality.
- Review welding drawings, specifications, welding procedures, and inspection requirements.
- Verify welder qualifications and welding procedure documentation.
- Inspect base materials and welding consumables for identification, condition, storage, and traceability.
- Evaluate joint preparation, fit-up, alignment, preheating, and interpass temperature requirements.
- Perform systematic visual inspection of welded joints and identify common discontinuities.
- Identify welding defects including cracks, porosity, lack of fusion, incomplete penetration, slag inclusions, undercut, excessive reinforcement, and distortion.
- Understand the applications and basic interpretation of non-destructive testing methods used for weld inspection.
- Compare inspection findings with applicable acceptance criteria and project requirements.
- Prepare professional inspection reports and document non-conformities and corrective actions.
- Support weld acceptance, repair, and re-inspection decisions using objective inspection evidence.

Course Outline

DAY 01

Fundamentals of Welding and Welding Inspection

- Introduction to welding inspection and quality assurance
- Common welding processes and industrial applications
- Welding terminology, symbols, joint types, and weld configurations
- Welding materials, consumables, and basic metallurgy
- Welding specifications, drawings, codes, and inspection requirements

PRACTICAL APPLICATION

Review a welding drawing and inspection specification and identify critical inspection points

DAY 02

Welding Procedures, Materials, and Pre-Weld Inspection

- Welding Procedure Specifications and essential requirements
- Welder qualification and performance qualification
- Base material identification and traceability
- Welding consumable selection, storage, handling, and control
- Joint preparation, fit-up, alignment, and dimensional requirements
- Preheating, interpass temperature, and environmental conditions

PRACTICAL APPLICATION

Conduct a pre-weld inspection and identify potential non-conformities before welding begins

DAY 03

In-Process and Visual Welding Inspection

- Inspection requirements during welding operations
- Monitoring welding parameters and process controls
- Visual examination of weld profiles and surface conditions

DAY 03 — CONTINUED

- Weld dimensions, reinforcement, alignment, and workmanship
- Common visual welding discontinuities and defect identification
- Inspection checkpoints, hold points, and witness points

PRACTICAL APPLICATION

Perform a simulated visual welding inspection and prepare an inspection record

DAY 04

Welding Defects and Non-Destructive Testing

- Classification and causes of welding defects
- Cracks, porosity, slag inclusions, lack of fusion, and incomplete penetration
- Undercut, overlap, excessive reinforcement, burn-through, and distortion
- Overview of visual testing, liquid penetrant testing, magnetic particle testing, ultrasonic testing, and radiographic testing
- Basic interpretation of non-destructive testing reports
- Acceptance criteria, weld repair, and re-inspection requirements

PRACTICAL APPLICATION

Analyze welding defect cases and determine appropriate corrective and inspection actions

DAY 05

Welding Quality Control, Documentation, and Final Acceptance

- Welding Inspection and Test Plans
- Inspection records, weld maps, traceability, and quality documentation
- Non-conformance reporting and corrective-action management
- Repair procedures and re-inspection
- Final weld inspection and acceptance
- Integration of welding inspection with quality assurance and asset integrity

DAY 05 — CONTINUED

FINAL WORKSHOP

Develop a complete Welding Inspection Plan covering pre-weld inspection, material verification, welding procedure review, in-process inspection, visual examination, non-destructive testing, defect evaluation, acceptance criteria, repair management, documentation, and final weld acceptance.

Register or Request More Information

Course page: https://quest-training.com/courses/welding-inspection-training-course
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