

API 510 Pressure Vessel Inspector Practice Training Course

7 – 11 November 2027
Cape town

AGILE LEADERS
Training Center

API 510 Pressure Vessel Inspector Practice Training Course

Ref: 2161_258293 **Date:** 7 – 11 November 2027 **Location:** Cape town **Fees:** 6000 Euro

Overview

API 510 Pressure Vessel Inspector Practice Training Course is a one-week advanced course for inspectors, mechanical integrity engineers, inspection supervisors, reliability specialists and maintenance engineers, who leave with a Pressure Vessel Inspection Decision File. The course connects in-service pressure vessel inspection, corrosion rate calculations, remaining life assessment, inspection interval planning and pressure vessel repair decisions. Agile Leaders Training Center presents API 510 inspector practice.

Who Should Attend

- Inspection teams responsible for pressure-vessel condition findings and records
- Mechanical integrity teams responsible for inspection plans and continued-service decisions
- Reliability teams responsible for deterioration trends and intervention priorities
- Maintenance teams responsible for repair, alteration and rerating interfaces
- Engineering teams responsible for calculations and technical acceptance

The course assumes participants already work with pressure equipment, inspection data or mechanical integrity controls; it leaves out certification promises, exam eligibility decisions and new-vessel design instruction.

Departments and Industries

The course supports in-service pressure-equipment assurance across process and asset-intensive operations.

- Oil, gas and petrochemical operations
- Chemical and industrial processing plants
- Power, utilities and energy facilities
- Mechanical integrity and inspection departments
- Maintenance, reliability and engineering services

Learning Objectives

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

- Apply API 510 responsibilities to in-service inspection work.
- Analyze damage mechanisms and examination evidence.
- Calculate corrosion rate, remaining life and inspection intervals.
- Evaluate minimum thickness, MAWP and continued-service findings.
- Compare repair, alteration and rerating pathways.
- Build a Pressure Vessel Inspection Decision File.

Course Agenda

Day 1: Frame API 510 Inspection Work

- API 510 Scope and Inspector Responsibility Map
- Owner-User Inspection Organization Interface Chart
- Pressure Vessel Service and Design-Record Review Sheet
- Inspection History and Data-Quality Checklist
- Condition Monitoring Decision Workflow

Day 2: Plan Damage-Based Examination

- API RP 571 Damage Mechanism Screening Matrix
- API RP 572 Vessel Inspection Practice Map
- Internal and External Examination Planning Template
- Nondestructive Examination Selection Table
- Pressure-Relieving Device Coordination Register

Day 3: Calculate Integrity Limits

- Metal Loss and Corrosion Rate Calculation Sheet
- Remaining Corrosion Allowance and Service Life Model
- Inspection Interval Determination Worksheet
- Required Thickness and MAWP Calculation Record
- Joint Efficiency and Static Head Review Method

Day 4: Decide Repair and Rerating Actions

- Inspection Finding Acceptance Decision Tree
- ASME PCC-2 Repair Method Screening Guide
- Repair and Alteration Documentation Checklist
- Rerating Basis and Approval Record
- Pressure Test Planning and Safety Review Sheet

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Day 5: Practice Inspector Decisions

- Exercise: Validate a Vessel Inspection Record Set
- Exercise: Build a Damage-Based Examination Plan
- Exercise: Calculate Remaining Life and Inspection Interval
- Exercise: Evaluate Repair and Rerating Evidence
- Capstone Exercise: Complete the Pressure Vessel Inspection Decision File

Practical Exercises

The course uses suggested activities based on process, utility and industrial pressure-vessel cases.

- Suggested activity: reconcile nameplate, design and inspection-history records.
- Suggested activity: connect credible damage mechanisms to examination locations and methods.
- Suggested activity: calculate corrosion rate, remaining life, thickness and MAWP findings.
- Suggested activity: document a repair, rerating or continued-service recommendation.

FAQs

Who suits API 510 pressure vessel inspector training, and what does it assume?

API 510 pressure vessel inspector training suits inspection, integrity, reliability, maintenance and engineering personnel. It assumes experience with pressure equipment or inspection information and does not determine certification eligibility.

How does API 510 inspector training differ from pressure vessel design training?

API 510 inspector training focuses on equipment already in service, its deterioration, examination, calculations, repair, alteration and rerating. Pressure vessel design training focuses on new-construction design and fabrication requirements.

How are API 510 inspection intervals determined?

API 510 inspection intervals are determined from applicable code limits, corrosion behavior, remaining life, service conditions, inspection effectiveness and documented integrity information.

What calculations support API 510 pressure vessel decisions?

API 510 pressure vessel decisions use inspection data to evaluate metal loss, corrosion rate, remaining corrosion allowance, remaining life, required thickness, MAWP and inspection intervals.

How are pressure vessel repair and rerating decisions documented?

Pressure vessel repair and rerating decisions are documented through findings, engineering calculations, repair methods, examination and testing requirements, approvals and updated equipment records.

Conclusion

Participants take back a Pressure Vessel Inspection Decision File containing scope, records, damage screening, examination planning, calculations and action controls. The file improves traceability from inspection evidence to continued-service, repair or rerating decisions. It also supports coordination among inspection, integrity, maintenance and engineering teams.