

API 570

Piping Inspectors

Certification Preparation Course

For Inspectors & Engineers



Applicable Sectors: Petro-Chemical & Energy.

Expertise: Beginner/ Intermediate

Training Setup: Class.

Course Structure

The Training provides participants with:

1. Knowledge of API publications and other accompanying standards. This include:
 - ≡ API Standard 570, Piping Inspection Code.
 - ≡ API RP 571, Damage Mechanisms Affecting Fixed Equipment in the Refining Industry.
 - ≡ API RP 574, Inspection Practices for Piping System Components.
 - ≡ API RP 577, Welding Inspection and Metallurgy.
 - ≡ API RP 578, Material Verification Program for New and Existing Alloy Piping Systems.
 - ≡ American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code, 2017 Edition I.
 - Section V, Nondestructive Examination.
 - Section IX, Qualification Standard for Welding, Brazing and Fusion Procedures.
 - ≡ American Society of Mechanical Engineers (ASME)
 - B16.5, Pipe Flanges and Flanged Fittings.
 - Edition B31.3, Process Piping.
2. Maintenance, rating, inspection, repair and alteration of in-service process piping system;
3. Information of API Individual Certification Program and API 570 Inspector certification process;
4. Practical tests simulating the API 570 ICP exam;
5. Competence and confidence to finally achieve API 570 ICP qualification.

Who should attend?

The course is a five days training designed for plant personnel who are engaged in the design, inspection, maintenance and repair of process piping equipment. This course is particularly targeted for preparations of the API 570 certification examination. The structure entails the exam body of knowledge and the API570 publication effectivity sheet.

Plant personnel would typically include experienced:

- ≡ Unit inspectors
- ≡ Plant engineers
- ≡ Asset integrity specialists and engineers
- ≡ Operations engineers
- ≡ Maintenance engineers
- ≡ Welding engineers and allied personnel.

A general working knowledge of pressure equipment and their usual construction materials is a requirement to attend this course.

Topics Covered

Day 1

- ≡ Introduction, Publications, Course Outline & Body of Knowledge
- ≡ API 570, Piping Inspection Code.
- ≡ Scope and definitions.
- ≡ Inspection, examination and pressure testing practices.
- ≡ Frequency and extent of inspection.
- ≡ Data evaluation, analysis and recording.

Day 2

- ≡ API 570, Piping Inspection Code: Repair, alterations and rerating. Inspection of buried piping
- ≡ API RP 574, Inspection Practices for Piping System Components
- ≡ Piping components: piping, tubing, valves, fittings and flanges.
- ≡ Pipe joining methods & Inspection planning.
- ≡ Inspection procedures and practices
- ≡ Determination of minimum required thickness Recording.
- ≡ API RP 578 Material Verification Program for New and Existing Alloy Piping
- ≡ Scope and definitions.
- ≡ Extent of verification – new construction, existing piping system and maintenance systems
- ≡ Test methods & Evaluation of test results.
- ≡ Marking and record keeping.

Day 3

- ≡ ASME B31.3 Process Piping: Introduction, scope and definitions.
- ≡ Design requirements and sample calculations
- ≡ Materials specifications and limitations.
- ≡ Fabrication, assembly and erection requirements.
- ≡ Inspection, examination and testing.
- ≡ ASME B16.5 Pipe Flanges and Flanged Fittings: Introduction, scope and definitions.
- ≡ Pressure Temperature Ratings
- ≡ Markings, Materials and Dimensions
- ≡ Test Methods for Establishing Pressure Temperature Ratings.
- ≡ API RP 571, Damage Mechanisms (related to process piping, in general).

Day 4

- ≡ ASME Section 5: Article 1: General requirement. Article 2: Radiographic Examination. Article 6: Liquid Penetrant Examination. Article 7: Magnetic Particle Examination. Article 9: Visual Examination. Article 10: Leak Testing. Article 23, Section SE-797, Ultrasonic Standards.
- ≡ ASME Section 9: Article 1, Welding General Requirements & Article 2, Welding Procedure Qualifications & Article 3, Welding Performance Qualifications & Article 4, Welding Data

DAY 5

- ≡ API RP 577, Welding Inspection and Metallurgy: Definitions, Welding inspection, processes, procedure, materials, Welder qualifications, welding Non-destructive examination, Metallurgy, Refinery and Petrochemical Plant Welding Issues.

500 example questions for practice to be reviewed during the training and open/close book exams at various stages.



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