



API Training Programs

API 570 - Authorized piping inspector





Described the API 570 Training Program

Certified API 570 Piping inspectors must have a broad knowledge base relating to maintenance, inspection, alteration and repair of in-service metallic piping systems. The API 570 examination is designed to determine if applicants have such knowledge.

This certification program benefits employers and the industry as a whole by helping to:

- ✚ Provide a continued high level of safety through the use of inspectors specialized in process piping
- ✚ Improve management control of process unit inspection, repair, alteration and rerating
- ✚ Reduce the potential for inspection delays resulting from regulatory requirements

API 570 certification is valid for a three-year term.

The examination consists of two parts.

- ✚ The closed-book part tests the candidate on knowledge and tasks requiring everyday working knowledge of API Standard 570 and the applicable reference documents.
- ✚ The open-book portion of the examination requires the use of more detailed information that the inspector is expected to be able to find in the documents, but would not normally be committed to memory.



Are you qualified to take the API 570 exam?

As outlined in the Annex A of the API 570 Standard, the qualification requirements for API 570 Piping inspector certification are based on the combination of education and experience related to in-service metallic piping systems. This experience must have been acquired within the last 10 years while employed by, or under contract with, an authorized inspection agency as defined in API 570.

Prior to submitting an application, please use the table below to determine if you qualify to take the API 570 exam.

Education	Minimum Years of Experience	Description of Experience Required
BS or higher in engineering or technology	1 year	Supervision or performance of inspection activities as described in API 570
	2 years	Design, construction, repair, operation, or inspection of in-service piping systems, of which one year <u>must</u> be in supervision or performance of inspection activities as described in API 570
2-year degree or certificate in engineering or technology	3 years	Design, construction, repair, operation, or inspection of in-service piping systems, of which one year <u>must</u> be in supervision or performance of inspection activities as described in API 570
	5 or more years	Design, construction, repair, operation, or inspection of in-service piping systems, of which one year <u>must</u> be in supervision or performance of inspection activities as described in API 570
High school diploma or equivalent	5 or more years	Design, construction, repair, operation, or inspection of in-service piping systems, of which one year <u>must</u> be in supervision or performance of inspection activities as described in API 570
No formal education	5 or more years	Design, construction, repair, operation, or inspection of in-service piping systems, of which one year <u>must</u> be in supervision or performance of inspection activities as described in API 570



Outline of API-570 Authorized piping inspector certification examination

I. Thickness measurements, Inspection Intervals and Piping

Integrity:

- ✚ Code calculation questions will be oriented toward existing in-service piping, not new piping.
- ✚ API Authorized Piping Inspectors should be able to check and perform calculations relative to in-service deterioration, repairs, rerates, or alterations

II. Welding Procedure and Qualification Evaluation Based On ASME Boiler and Pressure Vessel Code, Section IX:

- ✚ The inspector should have the knowledge and skills required to review a Procedure Qualification Record and a Welding Procedure Specification and to be able to determine the following:
 - A.** Determine if procedure and qualification records are in compliance with applicable ASME Boiler and Pressure Vessel Code and any additional requirements of API- 570 The weld procedure review will include:
 - ✓ One Weld Procedure Specification (WPS); and
 - ✓ One Procedure Qualification Record (PQR).
 - B.** Determine if all required essential and non-essential variables have been properly addressed. (Supplemental essential variables will not be a part of the WPS/PQR).
 - C.** Determine that the number and type of mechanical tests that are listed on PQR are the proper tests, and whether the results are acceptable.



III. NONDESTRUCTIVE EXAMINATION (ASME V, ASME VIII Div.1 & API 510):

- A.** Article 1, General Requirements
- B.** Article 2, Radiographic Examination
- C.** C. Article 6, Liquid Penetrant Examination, including Mandatory Appendices II and III
- D.** Article 7, Magnetic Particle Examination (Yoke and Prod techniques only)
- E.** Article 23, Ultrasonic Standards, Section SE-797 only
- F. ASME B31.3 and API-570: General nondestructive examination requirements:**
 - 1)** ASME B31.3: The inspector should be familiar with and understand the general rules for NDE (Chapter VI).
 - 2)** API Standard 570: The inspector should be familiar with and understand the general rules for NDE in API-570.

IV. PRACTICAL KNOWLEDGE - SPECIFIC:

- 1)** Organization and Certification Requirements.
- 2)** Types and Definitions of Maintenance Inspections.
- 3)** Welding on Piping
- 4)** Corrosion and Minimum Thickness Evaluation.
- 5)** Estimated Remaining Life.
- 6)** Inspection Interval Determination and Issues Affecting Intervals.
- 7)** Maintenance Inspection Safety Practices.
- 8)** Inspection Records and Reports.
- 9)** Repairs/Alterations/Reratings to Piping.
- 10)** Rerating Piping.
- 11)** Pressure Testing After Repairs, Alterations, or Rerating
- 12)** Pressure Temperature Ratings
- 13)** Markings
- 14)** 1Materials
- 15)** Dimensions
- 16)** Test



- 17) Limiting Dimensions of Gaskets
- 18) Methods for Establishing Pressure-Temperature Ratings
- 19) Methods of performing positive material identification and related record keeping.
- 20) API Recommended Practice 578 – Material Verification program for New and Existing Alloy piping Systems the entire document is subject to testing
- 21) ASME B16.5, Pipe Flanges and Flanged Fittings.

OVERALL OBJECTIVE OF THE TRAINING API 570 PROGRAM

The course provides participants with the knowledge necessary to:

- ✚ Be prepared for the next he API-570 Authorized piping inspector certification exam and have enough knowledge and skills to pass in order to receive the API-570 Authorized piping inspector certificate.
- ✚ Effectively use major codes: ASME B16.5 & B31.3; ASME B&PV Sections V & IX.
- ✚ Perform all basic Piping calculations needed for the API exam (e.g. tmin, test pressure, MAWP, MDMT, corrosion rates, remaining life, etc.).
- ✚ Use API's requirements during inspection, repairs, and alterations of piping.
- ✚ Review welding procedures (WPS/PQR) and welder performance qualifications (WPQ).

LIST OF REFERENCES

- ✚ **API Standard 570**, Piping Inspection Code: Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems, **4th Edition, February 2016, with Addendum 1 (May 2017)**
- ✚ **API Recommended Practice 571**, Damage Mechanisms Affecting Fixed Equipment in the Refining Industry, **2nd Edition, April 2011**

ATTENTION: Only the following sections / mechanisms from RP 571 are included on the exam:



Section 3 –Definitions

Par. 4.2.7 Brittle Fracture

4.2.9 Thermal Fatigue

4.2.14 Erosion/Erosion -- Corrosion

4.2.16 Mechanical Fatigue

4.2.17 Vibration-Induced Fatigue

4.3.1 Galvanic Corrosion

4.3.2 Atmospheric Corrosion

4.3.3 Corrosion Under Insulation (CUI)

4.3.5 Boiler Water Condensate Corrosion

4.3.8 Microbiologically Induced Corrosion (MIC)

4.3.9 Soil Corrosion

4.3.10 Caustic Corrosion

4.4.2 Sulfidation

4.5.1 Chloride Stress Corrosion Cracking (Cl-SCC)

4.5.3 Caustic Stress Corrosion Cracking (Caustic Embrittlement)

5.1.1.4 Hydrochloric Acid (HCL) Corrosion

5.1.1.10 Sour Water Corrosion (Acidic)

5.1.2.2 Amine Stress Corrosion Cracking

5.1.3.1 High Temperature Hydrogen Attack (HTTA)

📖 **API Recommended Practice 574**, Inspection Practices for Piping System Components, **4th edition, November 2016.**

📖 **API Recommended Practice 577**, Welding Inspection and Metallurgy, **2nd Edition, December 2013**

📖 **API Recommended Practice 578**, Material Verification Program for New and Existing Alloy Piping Systems, **2nd Edition, March 2010.**

📖 **American Society of Mechanical Engineers (ASME)**, Boiler and Pressure Vessel Code, **2015 Edition**

I. **Section V**, Nondestructive Examination, Articles 1, 2, 6, 7, 9, 10, and 23 (Section SE-797 only).

II. **Section IX**, Welding and Brazing Qualifications, (Welding only)

📖 **American Society of Mechanical Engineers (ASME)**

B16.5, Pipe Flanges and Flanged Fittings, **2013 Edition**

B31.3, Process Piping, **2016 Edition**



API 570, 2021 Calendar

API 570 Piping Inspector Certification			
Course ID	ST-API-02	City	Jeddah
Duration	10 Days	Fees (Seminar with Exam plus Books, classroom +coffee break)	SAR 13,000.00
Start Date		End Date	
05-Dec-21		16-Dec-21	

Free seats if available (without exam): 2

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