



# API Training Programs

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API 653 - Authorized Aboveground Storage  
Tank Inspector







## ***Described the API 653 Training Program***

The American Petroleum Institute initiated an API 653 Aboveground Storage Tank Inspector Certification Program with the participation of storage tank owners and users. It establishes a uniform national program that assists state and local governments in aboveground storage tank regulations.

The API 653 Aboveground Storage Tank Inspector must have a broad knowledge base relating to tank inspection and repair of aboveground storage tanks, and will satisfy the minimum qualifications specified in API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

API 653 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 653 exam?***

As outlined in Annex D of the API 653 Aboveground Storage Tanks Standard, the qualification requirements for API 653 applicants are based on the combination of education and experience related to aboveground storage tanks.



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 653.

Prior to submitting an application, please use the table below to determine if you qualify to take the API 653 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 653
2-year degree or certificate in engineering or technology	2 years	Design, construction, repair, operation, or inspection of aboveground storage tanks, of which one year <u>must</u> be in supervision or performance of inspection activities as described in API 653
High school diploma or equivalent	3 years	Design, construction, repair, operation, or inspection of aboveground storage tanks, of which one year <u>must</u> be in supervision or performance of inspection activities as described in API 653
No formal education	5 or more years	Design, construction, repair, operation, or inspection of aboveground storage tanks, of which one year must be in supervision or performance of inspection activities as described in API 653



# **Outline of API 653 Authorized Aboveground Storage Tank Inspector certification examination**

## **I. Thickness measurements, Inspection Intervals and Tank Integrity:**

- ✚ Code calculation questions will be oriented toward existing in-service tank, not new tank.
- ✚ Authorized Aboveground Storage Tank Inspector 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- 653The 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):**

- 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. API-650 and API-653: General nondestructive examination requirements:**
  - 1)** API Standard 650, Welded Steel Tanks for Oil Storage: The inspector should be familiar with and understand the general rules for NDE in API-650, Section 8.
  - 2)** API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction: The inspector should be familiar with and understand the general rules for NDE in API-653, Section 12.

### **IV. PRACTICAL KNOWLEDGE - SPECIFIC:**






- 1)** Organization and Certification Requirements.
- 2)** Types and Definitions of Inspections.
- 3)** Types Corrosion and Deterioration.
- 4)** Materials and Fabrication Problems.
- 5)** Welding.
- 6)** Non-destructive Examination (NDE) Methods
- 7)** Corrosion and Minimum Thickness
- 8)** Estimated Remaining Life.
- 9)** Inspection Interval Determination and Issues Affecting Intervals.
- 10)** Inspecting Relief Devices.
- 11)** Inspection Safety Practices.
- 12)** Inspection Records and Reports.
- 13)** Repairs / Alterations.
- 14)** Disassembly and Reconstruction.




- 15) Hydro Testing,
- 16) Pneumatic Testing
- 17) API Recommended Practice 651, Cathodic Protection of Aboveground Petroleum Storage Tanks
- 18) API Recommended Practice 652, Lining of Aboveground Petroleum Storage Tank Bottoms

## **OVERALL OBJECTIVE OF THE TRAINING API 653 PROGRAM**





**The course provides participants with the knowledge necessary to:**

-  Be prepared for the next API 653 Authorized Aboveground Storage Tank Inspector certification exam and have enough knowledge and skills to pass in order to receive the API 653 Authorized Aboveground Storage Tank Inspector certificate.
-  Effectively use major codes: API 650 and ASME B&PV Sections V & IX.
-  Perform all basic tanks calculations needed for the API exam (e.g. t<sub>min</sub>, MRT, max settlement, 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 (WPO).

## **LIST OF REFERENCES**

-  **API Recommended Practice 571, Damage Mechanisms Affecting Fixed Equipment in the Refining Industry, Second 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
  - 4.2.16 Mechanical Fatigue
  - 4.3.2 Atmospheric Corrosion



- 4.3.3 Corrosion Under insulation (CUI)
- 4.3.8 Microbiologically Induced Corrosion (MIC)
- 4.3.9 Soil Corrosion
- 4.3.10 Caustic Corrosion
- 4.5.1 Chloride Stress Corrosion Cracking (Cl-SCC)
- 4.5.3 Caustic Stress Corrosion Cracking (Caustic Embrittlement)
- 5.1.1.10 Sour Water Corrosion (Acidic)
- 5.1.1.11 Sulfuric Acid Corrosion
-  **API Recommended Practice 575**, Inspection of Atmospheric and Low-Pressure Storage Tanks, **Third Edition, April 2014**
-  **API Recommended Practice 577 – Welding Inspection and Metallurgy**, **Second Edition, December 2013**
-  **API Standard 650**, Welded Tanks for Oil Storage, Twelfth Edition, March 2013 **with Addendum 1 (September 2014), Errata 1 (July 2013), and Errata 2 (December 2014).**
-  **API Recommended Practice 651**, Cathodic Protection of Aboveground Petroleum Storage Tanks, **Fourth Edition, September 2014.**
-  **API Recommended Practice 652**, Lining of Aboveground Petroleum Storage Tank Bottoms, **Fourth Edition, September 2014**
-  **API Standard 653**, Tank Inspection, Repair, Alteration, and Reconstruction, **Fifth Edition, November 2014.**
-  **American Society of Mechanical Engineers (ASME)**, Boiler and Pressure Vessel Code, **2013 Edition**
  - i. ASME Section V, Nondestructive Examination, Articles 1, 2, 6, 7 and 23 (section SE-797 only)



## API 653, 2021 Calendar

API 653 Aboveground Tank Inspector Certification			
Course ID	ST-API-03	City	Jeddah
Duration	10 Days	Fees (Seminar with Exam plus Books, classroom +coffee break)	SAR 13,000.00
Start Date		End Date	
27-June-2021		8-July-2021	

Free seats if available (without exam): **2**

For more enquiries, please Contact.

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