



API 653
Covering
the latest
updates

API 653 WORKSHOP: Storage Tank Assets

Don't miss out on this 5-day API 653 training covering the latest updates on:

- How to decide optimum size & capacity.
- How to optimize layouts of tank farms, recent trends in tank layout management & Modern methods of managing tank farm upgrade projects.
- Understanding corrosion resistance barriers, how critical operating parameters impact IOW's and controlling damage mechanisms.
- Application of non-metallics in storage tanks to eliminate corrosion problems.
- Repairing storage tanks as per ASME PCC-2.
- Uplift conditions and anchor bolting requirements
- Inspection and testing plans for construction activities, handling plates optimally and avoid wastage in site.

Register Now!

DATES

☐ **MAY: 12,13,14,15&16**
Protea Breakwater | V&A Waterfront
Cape Town

☐ **MAY: 19,20,21,22 & 23**
Coastlands Hotel | Umhlanga | Durban

COURSE FEE

R14 999⁰⁰

Per Delegate | Excl. Vat

Book your place today:

Ravin on +27 82 571 9292 or **Trisha** on +27 72 468 7141

About the workshop

API 653 is a critical standard in the oil and gas industry, making it essential for professionals working in the petroleum sector to stay updated with its latest edition. Understanding the revisions of API 653 is vital, as they directly impact safety, regulatory compliance, and the overall condition of storage tanks. Keeping up with these changes ensures that professionals maintain the highest standards in their operations.

The most recent updates to API 653 introduce significant improvements in inspection requirements, enhancing the safety and integrity of storage tanks. These updates emphasize advanced corrosion control, better welding practices, environmental considerations, and safety protocols.

Empire Training's course on API 653 provides an in-depth understanding of storage tanks, including their design, application, operation, maintenance, and repair. It covers essential topics like the API 650 design standard, ASME Section IX & V, API 575, damage mechanisms affecting storage tanks, and modern construction strategies for asset integrity management. The course also delves into modern trends in repairs according to API 653, as well as advanced tank protection systems, including release prevention barriers, cathodic protection, internal liners, foam dams, and floating roof safety systems.

Who should attend this course:

- Tank farm/Managers Operators/Maintenance, Inspection,
- Project team members,
- Seniors Engineers

Course format:

This course is delivered in adult learning format, with focus on practical applications, required theory background, discussions, classroom design activities, use of codes and standards in actual design through exercises.

Pre-requisites:

Basic knowledge about petroleum storage, safety, basic mathematics, interest to learn storage tanks.

Course Objectives

On completion of the course, the participants will be able to

- **Understand** common tank configurations, how to decide optimum size & capacity, how to optimize layouts of tank farms, recent trends in tank layout management.
- **Modern methods** of managing tank farm upgrade projects.
- **Learn** how storage tanks are constructed and key areas to focus in the construction phase to avoid settlement problems later.
- **Learn** current design principles as per API 650 / API 620 recent revisions in the standards. How to select right material of construction, understanding corrosion resistance barriers, how critical operating parameters impact IOW's and controlling damage mechanisms.
- **Current developments** in coating and liner technologies. Application of non-metallics in storage tanks to eliminate corrosion problems.
- **Be able to prescribe** required testing for the storage tanks construction and maintenance projects.
- **Inspection and testing** plans for construction activities, handling plates optimally and avoid wastage in site. Importance of PMI and application of modern testing methods in site.
- **Learn modern inspection** and condition monitoring methods as per API 653 standard.
- **Apply recommended** practices for repairing storage tanks as per ASME PCC-2.
- **Learn modern protective** systems such as Release prevention barriers, CP systems, internal liners and other protective measures to prevent loss of containment.
- **Understand uplift conditions** and anchor bolting requirements, wind effects and requirement of wind girders.
- **Trouble shooting common** storage tank problems and solving engineering and operational problems.
- **How to perform basic storage** tank inspection, assess settlements, plan corrective actions as per API 653 standard.
- **Be able to decide** the right test height for hydrostatic testing of older tanks, principles of tank farm integrity and safety management as recommended in API 653 standard.
- **Tank farms, how to design layouts** for quicker turnaround activities, shut down for optimizing facilities. Recent trends & regulations, developments in fire protection and fighting systems and methods for storage tanks.
- **Modern trends in layouts.**
- **Floating roof sealing systems**, construction, maintenance & management.



COURSE AGENDA

DAY ONE	Course introduction, pre-assessment, ice-breaker.
	Storage tanks – configurations, applications, current industry data and trends.
	How to size storage tanks, decide capacities, optimize layouts and key principles adopted in industry.
	Introduction to petroleum & gas storage tank standards.
DAY TWO	Overview of materials for Storage tank construction. How to select right materials, understand barriers and prevention of corrosion damage.
	How storage tanks are constructed and inspection and testing plans recent trends.
	Managing the storage tank plate materials, optimum usage, cutting plans.
	Design of storage tank as per API 650 / 620 standards & application.
	Design activities, practical exercises in applying API 650 / 620 standards.
	Storage tank release prevention barriers and their application in modern construction.
DAY THREE	Storage tank protection systems – barriers management & IOW's, CPV's monitoring for corrosion control, CP system installation and upkeep as per API 651 standard.
	Modern coatings, internal liners installation and maintenance, application of API 652 standard.
	In-service inspection standard API 653 & its application, assessment of roof, shell and bottom plates, how to plan and develop inspection strategies, apply onstream inspection, learn to exempt hydrostatic tests as per API 653 standard.
	Monitoring storage tank settlements, planning hydrostatic tests, calculating hydrostatic test height for older tanks, re-rating storage tanks as per API 653.
	How to re-construct and re-site tank assets for optimizing cost of ownership.
DAY FOUR	Uplift conditions, anchor bolting requirements as per API 620 standard.
	Storage tank inspection scheduling principles and best practices.
	Trouble shoot common tank problems and best practices.
	Preparing storage tanks for shutdown and entry.
DAY FIVE	Repairing storage tanks, repair methods, application of ASME PCC 2 standards.
	Modern non-metallics and application in storage tanks.
	Robotics, resident robots for storage tanks & Modern trends. Introduction to digital twins and application. Modern drones for tank farm management.
	Post assessment test / open forum discussions.
	Conclusion / group photo.

TRAINER:



Mr. Ganapathy Balasubramaniam

Mr. Ganapathy Balasubramaniam, is a mechanical engineer with 30 years oil & gas experience, has operated large tank farms, managed and solved several storage tank issues and is a storage tank specialist. He holds API 653 / API-TES / API 580 certifications, an OPITO certified assessor, qualified in digital twins, and in wellness diploma.

He has experience training

teams of Engen refineries, Transnet, Vopak Durban, OQ, Qatar petroleum, Oryx GTL, KOC, DNV-GL Brunei, Petronas Malaysia,

QAPCO, Engen refineries, SASOL, Transnet, etc. he has taught this course in far east, middle east, South Africa, Europe, & USA regions, he is member of ASME and forums of API, Hydrogen embrittlement, energy institute, Hydraulics institute, Society of petroleum engineers.

He is very passionate and inspires participants to learn and grow in their careers and is renowned for simplifying complex topics. He is associated with Tracez global as a trainer for storage tanks / piping / static assets / design, operations & maintenance / RBI courses.

For in-house trainings please contact:

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CONFERENCE

RESERVE YOUR PLACE TODAY!

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SELECT

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Delegate substitutions. Substitutions is welcome at any time and do not occur any additional charges. Please notify EMPIRE in writing of any such changes at least 3 days before the date of the event.

- Please note that the speakers and topics were confirmed at the time of publishing however circumstances beyond the control of the organizers may necessitate substitutions, alterations or Cancellations of the speakers and/or topics.
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- or any cancellations received in less than 7 working days before the date of the event, the full fee will be payable and no refunds or credit notes will be
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