MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

STORAGE TANKS – DESIGN, CONSTRUCTION, INSTALLATION, STRUCTURAL AND MECHANICAL INTEGRITY

"Ensuring Safe, Compliant, and Reliable Storage Tank Systems"

Schedule

Date	Venue	Fees (Face-to-Face)
13 – 17 Jul 2026	London, UK	USD 3495 per delegate

Introduction

This comprehensive course covers the essential principles, standards, and best practices for the design, construction, installation, and maintenance of storage tanks. Participants will gain critical knowledge to ensure the structural and mechanical integrity of storage systems used across industries, minimizing risks, ensuring compliance, and improving operational reliability.

Through expert-led sessions, real-world case studies, and hands-on workshops, attendees will learn how to apply international codes (API, ASME, EEMUA) and manage the full lifecycle of storage tanks, from design and construction to inspection, repair, and decommissioning.

Objectives

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

- Understand key design considerations and material selections for storage tanks
- Apply international standards (API 650, API 653, EEMUA 159) in construction and maintenance
- Identify common structural and mechanical integrity issues and how to address them
- Conduct effective inspection, testing, and repair activities
- Enhance safety, reliability, and compliance across storage tank operations

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Why Attend

- Gain practical, up-to-date knowledge on storage tank design and maintenance
- Learn to apply international best practices and standards
- Improve your ability to detect, prevent, and mitigate integrity issues
- Enhance safety, environmental protection, and operational efficiency
- Access valuable tools, templates, and expert insights

Target Audience

This program is designed for:

- Mechanical and structural engineers
- Maintenance and integrity engineers
- Asset and facility managers
- Inspection, QA/QC, and reliability professionals
- Project engineers involved in storage tank projects

Individual Benefits

Key competencies that will be developed include:

- Mastery of design and construction principles for storage tanks
- Ability to manage tank integrity and prevent failures
- Strong understanding of inspection and repair strategies
- Enhanced decision-making in selecting materials and methods
- Confidence in ensuring regulatory compliance and best practices

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved structural and mechanical reliability of storage assets
- Reduced risk of leaks, spills, and catastrophic failures
- Stronger compliance with industry standards and environmental regulations
- Increased operational efficiency and cost savings
- Enhanced asset life extension and performance

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – In-depth exploration of storage tank design, codes, and integrity management
- Case Studies – Real-world examples of tank failures, repairs, and performance improvements
- Workshops – Interactive exercises on tank design calculations, inspections, and assessments
- Peer Exchange – Group discussions on industry challenges and lessons learned
- Tools – Practical templates for inspection checklists, maintenance plans, and risk assessments

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Course Outline

Detailed 5-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Introduction to Storage Tanks and Standards

- Module 1: Fundamentals of Storage Tank Systems (07:30 – 09:30)
- Types of storage tanks and their applications
- Key components and materials used
- Overview of industry codes (API 650, API 653, EEMUA 159)
- Module 2: Design Considerations (09:45 – 11:15)
- Design criteria and loading conditions
- Material selection and compatibility
- Foundation and anchoring requirements
- Module 3: Construction Practices (11:30 – 01:00)
- Fabrication, welding, and assembly processes
- Quality assurance and control during construction
- Addressing common construction challenges

Day 2: Mechanical and Structural Integrity

- Module 4: Mechanical Integrity Principles (07:30 – 09:30)
- Understanding stresses, corrosion, and fatigue
- Evaluating tank thickness, nozzles, and roofs
- Failure modes and preventive measures
- Module 5: Structural Analysis and Stability (09:45 – 11:15)
- Assessing stability under wind, seismic, and thermal loads
- Buckling, settlement, and deformation issues
- Strengthening and retrofitting techniques
- Module 6: Inspection and Testing (11:30 – 01:00)
- Visual, ultrasonic, radiographic, and acoustic methods
- Hydrostatic testing and leak detection
- Setting inspection schedules and criteria

Day 3: Maintenance and Repairs

- Module 7: Maintenance Strategies (07:30 – 09:30)
- Preventive, predictive, and corrective maintenance
- Coating systems and cathodic protection
- Managing aging tanks and extending service life
- Module 8: Repair Techniques (09:45 – 11:15)
- Welding repairs, patching, and component replacement
- Tank bottom replacement and roof repairs
- Ensuring compliance during repairs
- Module 9: Risk Assessment and Management (11:30 – 01:00)
- Conducting risk-based inspections (RBI)
- Assessing hazards and safety risks
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Developing mitigation and contingency plans

Day 4: Environmental and Safety Considerations

- Module 10: Environmental Compliance (07:30 – 09:30)
- Emission control and spill prevention
- Regulatory frameworks and permitting
- Managing waste and secondary containment
- Module 11: Safety and Emergency Response (09:45 – 11:15)
- Hazard identification and safety protocols
- Emergency planning and response procedures
- Integrating safety into maintenance and operations
- Module 12: Lessons Learned from Case Studies (11:30 – 01:00)
- Review of historical incidents and root causes
- Best practices for preventing recurrence
- Applying lessons to organizational practices

Day 5: Integration and Action Planning

- Module 13: Group Workshop: Tank Integrity Assessment (07:30 – 09:30)
- Hands-on integrity assessment exercise
- Developing action plans based on findings
- Peer review and feedback
- Module 14: Roadmap for Continuous Improvement (09:45 – 11:15)
- Setting long-term maintenance and inspection strategies
- Leveraging technology for data-driven decisions
- Building a culture of continuous improvement
- Module 15: Course Wrap-Up and Certification (11:30 – 01:00)
- Summary of key insights and takeaways
- Participant presentations and discussion
- Certificate presentation and closing remarks

Certification

Participants will receive a Certificate of Completion in Storage Tanks – Design, Construction, Installation, Structural and Mechanical Integrity, demonstrating their expertise in designing, maintaining, and managing storage tanks in compliance with international standards.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**

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