



www.tanxperts.com

Tanxperts Hungary llc.

Engineering provisions

Company overview

2014

TANXPERTS™ is a new and innovative company with its focus on tanks and nothing but tanks. Our services do not stop at just inspections and consultancy.

Our motto is: 'preventing is better than repairing'.

TANXPERTS™ is a strategic international collaboration of two companies in Hungary and in The Netherlands, which started as a friendship between two highly trained engineers with mutual interest in tanks and with special and unique knowledge regarding the storage tank service capability.

- Tanxperts Hungary Llc – Hungary
- T.I.S. (Tank Inspection Services) – Netherlands

TANXPERTS™ - focusing the aboveground vertical, cylindrical steel storage tanks, and to make them safe, minimize the deteriorations and operation problems, extend lifetime, and to keep under control the degradation mechanism of the tanks.



TANXPERTS™
Quality policy

tanxperts.com

- The primary purpose of TANXPERTS™ to deliver our services to satisfy the various needs of the customers and to comply with the highest level of quality, safety and environmental rules, including the quality control planning and tank assessment as well.
- To comply with the market requirements and in order to achieve the highest standards, the members of the company continuously train themselves and participate the relevant courses to improve their skills, and knowledge.



Tanxperts Hungary Llc.
brief introduction
tanxperts.com

- The company was founded the beginning of 2012 as a brand new company with main activity as such: technical inspection , expediting and assessment.
- As the managing director of Tanxperts Hungary Llc. intend specifically to expand the range of pursuit onto the engineering and technical assessment and/ or consultancy field.
- **Company Details – Tanxperts Hungary Llc:**
 - Mr. Attila Dömötör managing director
 - Reg.no.# 19-09-515238
 - EU tax no.#: HU23900107
 - Mobil: +36 302 355 521
 - E-mail: attila.domotor@tanxperts.com

Tanxperts Hungary Llc.

Mr. Attila Dömötör –
qualifications

tanxperts.com



Mr. Attila Dömötör , manager – qualifications

- VCA - Safety for Operational Supervisors SCC
- Storage tank assessment - 11/1994. (III. 25.) IKM
- EOQ MNB – Quality system auditor (EN ISO 9001)
- Fire protection exam for combustible and flammable liquids, fueling stations
- TankAssessor™ Certificate of Core Competence - EEMUA 159
- Mechanical engineer - material technology & quality expert engineer

Some important accomplishment

- Quality management handbook as per ISO/IEC 17025:2000:
 - Árkovits and Sons Ltd. Material Testing NDT Laboratory – Hungary
- Entire Quality system foundation, auditing, and maintenance as per EN ISO 9001:2000:
 - Masa Mosodák Ltd. Laundry and dry cleaning – Hungary
 - Autogard Holding Ltd. Industrial torque limiters, couplings – UK, Cirencester
- Aviation fueling operation quality system & maintenance, auditing, feasibility study and expediting:
 - IATA Fuel Quality Pool & JIG - aviation refueller truck operation and maintenance, storage fuel base operation and maintenance - BUD International Airport
 - Project launch management of Airport Train Unloading Station - feasibility study, and permit design;
 - TITAN Aviation refueller truck complete maintenance for TOTAL Hungary as per MOCQAT (JIG) - Airport Debrecen 2012
 - TITAN Aviation refueller truck set into operation with entire homologation (tank & meter verification, translation of maintenance manual, etc.) for TOTAL Hungary as per MOCQAT (JIG) - Airport Debrecen 2013
 - Africa - Hungary - Cooperation with a complete configuration the technology of a test bench system for jet turbine
 - *Aviation refueller trucks and fixed de-/refuelling system monthly/quarterly/ half yearly, and annually maintenance* for TOTAL Hungary as per MOCQAT (JIG) - Airport Debrecen from May 2013
- Operational instruction, manual, preparation for audit, feasibility study:
 - LUKOIL terminal, Dunaföldvár – Hungary - Operational Manual, site preparation for audit
 - LUKOIL terminal, Dunaföldvár – Hungary - Mixing of bioethanol - feasibility study
- River navigation - Configuration the entire technology of a tanker (barger) vessel de-/ refuelling system as per the Germanischer Lloyd & National Legislation - Budapest Hungary



We are Exclusive Partners in reference to **RBI Tank/ Piping Integrity Softwares**

- ***Inventure Technologies*** developed an innovative and unique software program for executing **RiskBasedInspection studies on storage tanks**. The program is fully compliant to all the required industrial standards and guidelines (EEMUA 159, API 653) and the studies contribute to the optimisation of the reliability and profitability of storage tanks in general.
- **RB-IT Piping integrity** software is an innovative, web-based software program to determine the condition and remaining life of pipelines. The program complies with all major industry standards and guidelines (API 570/571, ASME B31.3). The studies contributes to optimize the safety and reliability of the pipelines.

We are Partners in reference to the Tank Storage and Pipeline Industry technologies:

- **Total Tank Management** (high-end NDT; pipeline inspection and monitoring; pipeline support system; non-man entry cleaning; and hydrocarbon recovery; hydro-testing and recommissioning; consultancy service);
- ***T-type acoustic sludge measurement system***

We are Partners in reference to **high-tech fire protection for storage tanks by Foam Fatale**

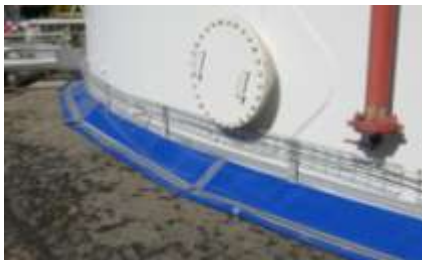
- Break through method to extinguish fire in storage tanks handling flammable liquids!
- The automatic ***Self-Expanding Foam system*** responds immediately after the ignition and does not require any external supply of water or energy to operate.

We are Partners in reference to the **industrial communication** - ***ENTEL handheld radios***



'tanxkirt@' - Patent pending

- 'tanxkirt@' protects the tank bottom from rain water ingress without excluding the possibility of any inspection or maintenance.
- Principal of 'tanxkirt@' is that rain and/ or drip tightness between the conserved tank wall and aluminum profile is achieved by a high spec sealant.
- The advantages of 'tanxkirt@' is one of the most cost effective rainwater protection systems on the market.



NDT inspection plug & labels - Patented:

- Cost effective access for periodic inspections at the same locations!
- Superior sealing capability to prevent corrosion under insulation (CUI)!
- Easy, reusable and resealable access for nondestructive testing of insulated pipe and equipments.



For further information about the products, please contact us!



**Please be aware that information in the following pages is provided
with the permission of EEMUA!**

EEMUA is an international non-profit membership organisation that aims to improve the safety, environmental and operating performance of industrial facilities in the most cost-effective way, developing and promoting leadership in industrial asset management. EEMUA Members pursue these aims by sharing engineering experiences and expertise, and by the promotion of their distinct interests as the users of engineering products. For more information, visit www.eemua.org

NOTE: EEMUA Publication 159 and all other EEMUA Publications are the copyright of and wholly owned by The Engineering Equipment and Materials Users Association also trading as EEMUA*. CompeTank and CompEx are Trade Marks of and wholly owned by The Engineering Equipment and Materials Users Association also trading as EEMUA*. Full rights asserted.

***Note:** For the purposes of conducting its business, The Engineering Equipment and Materials Users Association is incorporated in England and Wales as a private company, limited by guarantee, not having share capital. Company number 477838.

Oil and petrochemical industry feedstock and products have been stored in above-ground, vertical cylindrical tanks for many years. At first sight these tanks appear of simple design and construction with innocuous working environments. However, this is not the case in practice as the numerous accidents associated with such tanks testify.



Storage tanks

Large storage tanks can be difficult and costly to inspect and maintain. Direct visual internal inspection requires the tank be emptied and cleaned, which is time-consuming and expensive and wasteful of resources if the tank is found to be sound. EEMUA's awareness of the problem has led to the development of strategies aimed at minimising the time equipment is out of use, whilst taking risk and consequence of failure into account.

EEMUA 159:

Users' guide to the inspection, maintenance and repair of aboveground vertical cylindrical steel storage tanks

This users' guide is considered to be the most comprehensive available on storage tank inspection, maintenance and repair. It offers guidance on the inspection and maintenance of tanks built to BS or API standards for the storage of petroleum and chemical feedstocks and products and refrigerated gases. Key features for planning and executing inspection, maintenance and repair works on above ground vertical cylindrical steel storage tanks are set out. The publication covers description of the key tank components that require inspection and maintenance, degradation mechanisms and common inspection techniques, together with a description of the probabilistic (risk- and reliability-based) preventative mechanism concept. This latest third edition includes details on hydrotesting, repair and re-siting of tanks.



EEMUA 159

Introduction

This publication is intended primarily to assist in the establishment of essential inspection requirements for aboveground, vertical, cylindrical, steel storage tanks, in order to minimise in-service problems, and extend useful life. However for such requirements to be properly interpreted and understood, comprehensive guidance is given on many key design features, on common problems experienced during operation and on repair methods.

The publication addresses, primarily, storage tanks built in accordance with relevant British Standards, but where appropriate it also refers to and makes use of commonly accepted international standards and codes such as those of the American Petroleum Institute. These differ little from the in-service conditions that they cover and the resulting inspection requirements.

It should be noted, however, that some tanks in particular or unusual locations or operating situations may require additional or special attention.

Scope

The description of key tank components that require inspection and/ or maintenance, of degradation mechanisms, and of common inspection techniques.



EEMUA 159

1) Operation, and integrity management issues:

- Corrosion
- Hydro-testing and putting into service
- Process safety management, instrumentation and control
- Repairs of storage tanks
- Operation boundary consideration

2) Tank shell:

- Corrosion assessment, theoretical shell thickness calculation

3) Tanks re-sitting, and jacking up, relocation, and demolition

- Stability consideration, define height-, and number of secondary wind girders, remaining life calculation
- Shell plate thickness safety and rejection limit calculation

4) Tank bottom, tank roof and roof framing, safety and rejection limit-, and remaining life calculation

5) Settlement and the design of foundation

6) Venting, over-pressure and environmental consideration

7) Overview of tank integrity and inspection issues

- Potential welding defects
- Non-destructive testing techniques
- Brittle fracture consideration



EEMUA 159 - Inspections, and evaluation

- 1) External inspection evaluation, corrosion, erosion and wear, as the following:
 - Isolation, painting
 - Shell-, roof plate thickness
 - Venting, valves, instrumentations, fittings
 - Floating roof rim seals
 - Storage tank foundation, -bunds, settlement, conditions, arrangement, out-of verticality
 - Bottom leakage at tank shell
- 2) Internal inspection evaluation, corrosion, erosion and wear as the following:
 - Tank bottom condition:
 - Corrosion
 - Welding defects
 - Deformation
 - Tank shell condition:
 - Corrosion
 - Welding defects
 - Coating
 - Tank roof condition:
 - Frangible storage tank roof joints
 - Corrosion on roof plates, and framing
 - Corrosion and liquid set-up on floating roof pontoons
 - Floating roof rim seals, reinforcement, drain



EEMUA 159 – TankAssessor™ certification

- Gain an understanding of the design, material and fabrication aspects of tank construction with respect to repair or restrictions of use after degradation in service.
- Understand the principles, output and limitations of inspection methods and techniques.
- Be able to make a sound assessment of the integrity of a storage tank and foundation, and offer guidance on the need for repair, its urgency and methods of effecting such repair.
- An outline of products stored, codes of practice, tank types, materials, design parameters, venting, settlement jacking, insulation.
- An understanding of EEMUA 159, integrity assessment, methods of repair or restrictions of service.
- In-service problems such as corrosion, erosion and wear.
- Visual and NDT inspection, reporting and evaluating results.
- Failures.
- Repairs, welding processes and qualifications, quality control and testing.
- Use of EEMUA 154 (tank demolition) and EEMUA 180 (frangible roof joints).
- Case history studies.