

DESIGN & SPECIFICATION

Your source for unmatched designs and specifications for water storage tank rehabilitation projects

TIC's specifications and contract documents are project specific and more extensive than provided by most engineers due to our experience and extensive familiarity with the latest AWWA, NACE, NFPA, and SSPC standards and how they must be implemented. Specifications are prepared in accordance with local, state, and federal laws, and the specific requirements of each tank owner.



Project Consultation: Throughout design and execution procedures, TIC's project team is in direct communication with the tank owner's representatives to assure that project specifications and contract documents match their expectations and requirements.

Detailed Construction Cost Estimates: Tank Industry Consultants provides budget estimates for tank construction to meet your maintenance and financial goals. After all reviews are complete, TIC concludes document approvals and prepares a final detailed cost estimate for the project.

Reduce Construction Costs: Although most engineering firms can provide generic specifications, it is our uniquely developed specifications that identify only work that actually needs to be performed on a specific tank. This reduces change orders to only those that have competitive unit prices already negotiated prior to starting the project. Our specifications also address potential problems that may come up during a tank rehabilitation project. These include containment and proper removal and disposal/treatment of coatings containing regulated heavy metals. While our specifications are designed to protect tank owners, our designs and specifications also offer the most cost-effective alternatives available.

Our specifications reduce both construction and future rehabilitation costs. By **designing out problem maintenance areas**, for example, a newly applied coating system will not only last longer but future maintenance will be easier and therefore less expensive.

Since 1979, Tank Industry Consultants has been providing specialized professional engineering and inspection services to clients nationwide. TIC's team is committed to continuing to provide the finest engineering and inspection services available to tank owners and operators. This is achieved through our selection of knowledgeable tank experts, regular, systematic training and continual education on the latest industry standards, regulations, and technology, and continual oversight of work at all project levels.

We do tanks...only tanks!

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Offices Nationwide

Repair and Rehabilitation Design: It is important to include the appropriate upgrades during a tank rehabilitation project. Since 1979, TIC has found that a specification that is oriented only to re-painting is not adequate when repair and rehabilitation is required. TIC's tank-specific designs provide a better finished product.

Engineered solutions are vital to the successful completion of tank rehabilitation projects.

Coating System Design: Our AWWA involvement allows continual research into alternative coating systems that meet or exceed the specific requirements and expectations of tank owners. When designing the coating system for your tank, the engineers at TIC take into consideration the uniqueness of each project. Some of the specific issues that we consider include:

- out-of-service time
- typical weather conditions during application
- compliance with regulatory agencies
- aesthetics and logos
- service life and life cycle costs

TIC does not just take an existing coating specification and reuse it for every project we design. ***TIC's specialty is designing unique solutions to specific project challenges.***

- Bidding
- Submittal Review
- Contract Administration
- Construction Observation

STEEL WATER STORAGE TANK STANDARDS AND GUIDELINES

Chip Stein, TIC's Managing Principal, chairs the **AWWA Standards Committee on Steel and Composite Water Storage Tanks**. In this capacity he oversees all standards development and revision processes for all steel and composite tank standards including D100 (design and construction), D101 (inspection), D102 (coatings), D103 (bolted tanks), D104 (cathodic protection), D106 (sacrificial anode cathodic protection systems), D107 (composite), D108 (aluminum dome roofs), M42 (Tank Manual), and the proposed new stainless steel bolted tank standard.

The **AWWA D101 standard for the inspection of water storage tanks** was last revised in 1953. The standard was reaffirmed without revision in 1986, and withdrawn by AWWA in December of 1998. In 2013, the AWWA Standards Council authorized the formation of a Revision Task Force to completely re-write D101. Chip also chairs the D101 Committee that is in the process of revising the standard.

In 1998, AWWA published the **Steel Water-Storage Tanks Manual M42**. Mr. Crone Kroy (deceased), TIC's founder, was the Technical Editor for the Manual. Chip Stein authored a chapter in the Manual. The Manual was designed to fill in some of the gaps left with the withdrawal of D101, and to amplify on its content. Chip Stein revised the Manual in 2012 and chairs the current revision task force.

In 2010, McGraw Hill, in conjunction with AWWA, published the **Steel Water Storage Tanks handbook**. Chip Stein authored a chapter for the handbook.

It is easy to understand why ***no other tank engineering or inspection firm has better insight into current — and past — water tank inspections standards and guidelines.***