

## THE BASICS: WATER PROCESSING AND STORAGE TANKS

Cool, clear, refreshing water. A simple liquid that plays a significant role in dictating the production of society. Referring to water as the “liquid of life” is no understatement. From drinking to manufacturing, very few functions are performed without this simple resource. To utilize H<sub>2</sub>O in all aspects of life, steel potable water tanks ensure safe storage and efficient processing.

Steel water storage tanks and steel water processing tanks are a solution for generating, storing, and providing quicker access to clean water. In residential homes, water tanks are used for washing, drinking, cleaning, etc. Industrial complexes may install a water storage tank for manufacturing, cleaning, and more. Depending on the intended use of a tank, water storage tanks and water processing tanks come in a range of shapes, sizes, and materials. [1]

### Uses of Water Tanks

Many industries use steel water storage tanks and steel water processing tanks for uniform pumping. Using the main irrigation systems would result in the pumping capacity going twice over the average requirement. In addition, industries that utilize their own systems are unaffected by any emergencies and power outages where water service would be interrupted. [2]

### Popular industries for water tanks:

- Municipal
- Commercial
- Schools
- Hospitals
- Prisons
- Hotels
- Resorts/Casinos
- Apartment Complexes
- Housing Developments
- RV Parks and Farms



### Adhering to Standards

The National Sanitation Foundation’s standards keep water in safe, drinkable conditions for the public. NSF water storage tanks and NSF water processing tanks with the NSF/ANSI Standard 61 certification are a signal that a product is safe to be installed in a potable water system for public use or consumption.

The American Water Works Association (AWWA) sets the minimum requirement standards for design, installation, performance, and manufacture of products used in the drinking water industry. Most of all steel potable water storage tanks constructed in the United States adhere to specifications that reference the following AWWA water storage tank and the AWWA water processing tank standards. The list below are the standards that have approval from AWWA and the American National Standards Institute (ANSI). [3]

## Standards:

- ANSI/AWWA D100, Standard for Welded Carbon Steel Water Storage Tanks.
- ANSI/AWWA D102, Standard for Coating Steel Water Storage Tanks.
- ANSI/AWWA D103, Standard for Factory-Coated Bolted Carbon Steel Water Storage Tanks.
- ANSI/AWWA D104, Standard for Automatically Controlled, Impressed Current Cathodic Protection for the Interior Submerged Surfaces of Steel Water Storage Tanks.
- ANSI/AWWA D106, Standard for Sacrificial Anode Cathodic Protection Systems for the Interior Submerged Surfaces of Steel Water Storage Tanks.
- ANSI/AWWA D107, Standard for Composite Elevated Tanks for Water Storage.
- ANSI/AWWA D108, Standard for Aluminum Dome Roofs for Water Storage Facilities.

These standards (except ANSI/AWWA C652) are developed and maintained under the direction of the AWWA Standards Committee on Reservoirs, Standpipes, and Steel Elevated Tanks. This committee is composed of members representing producer (constructor and manufacturer), consumer (utility), and general interest (academic and consulting engineering) groups. ANSI/AWWA C652 was developed and is maintained by the AWWA Standards Committee on Disinfection of Facilities. [3]

Drafts of revisions or standards must meet approval from a standards committee. Once it meets approval, it is sent to the AWWA Standards Council. If it is approved, the draft is forwarded for public review and presented to the AWWA Board for Directors for final approval. [3]

All types of water storage systems must meet these standards. Resistance to various temperatures and weather are crucial to preventing the formation of algae and the interference of disease or debris. Furthermore, these units must be structurally sound against wind and seismic loads to prevent the deterioration of a unit. Most systems are lined with coatings to provide an aesthetically pleasing architectural appearance and reduce maintenance costs. [4]

## Inspections

Regular inspections should be expected after installing a water storage tank or a water processing tank. To inspect a water tank without completely draining it, trained divers would typically be required. However, this option can be costly. Utilizing a submersible robotic camera may provide the same results without hassling over diver costs or coordination. [5]

The AWWA recommends inspections every 3 to 5 years and many manufacturers provide warranties, provided tanks are regularly inspected. Keeping up with tank inspections reduces long-term costs by prioritizing placement and repair. [5]

If left neglected, most tank materials are in danger of rust, cracks, or corrosion. Furthermore, sediment can build in massive quantities at the bottom of the tank over time and jeopardize the purity of the water. Unattended, massive amounts of sediment can turn into a thick sludge material, resulting in inferior water or degradation of the system. [5]

## Choosing the Right Fabrication

Dixie Southern manufactures several steel water storage tanks and steel water processing tanks. Depending on your needs and the type of water you have, certain applications are more likely to work for you. Choosing the right one will prevent unsafe water.

Types of water storage and water processing tanks fabricated by Dixie Southern:

- Steel water treatment tanks
- Steel water storage tanks
- Distillation tanks
- Condensate tanks
- Condensate storage tanks
- Water holding tanks
- Deaerators
- Hydro-pneumatic vessels
- Condensate polishers
- Steel potable water storage

Dixie Southern fabricates steel water processing tanks, steel water storage tanks, and steel potable water tanks to NSF 61 standards. Steel water processing tanks and steel water storage tanks are also fabricated to AWWA standards by Dixie Southern. We provide service in all kinds of tanks, including customizations. Contact us today to receive your quote!

## References

1. <https://www.wwdmag.com/editorial-topical/what-is-articles/article/10940672/what-is-water-tank-storage>
2. [https://workforce.libretexts.org/Bookshelves/Water\\_Systems\\_Technology/Water\\_141%3A\\_Water\\_Distribution\\_Operator\\_II\\_\(Alvord\)/01%3A\\_Chapters/1.02%3A\\_Water\\_Storage](https://workforce.libretexts.org/Bookshelves/Water_Systems_Technology/Water_141%3A_Water_Distribution_Operator_II_(Alvord)/01%3A_Chapters/1.02%3A_Water_Storage)
3. <https://www.awwa.org/portals/0/files/publications/documents/m42lookinside.pdf>
4. <https://www.waterworld.com/drinking-water/article/14069816/water-storage-systems>
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