

What Does a Water Tank Have in Common with a Kitchen Gadget?

Ron Popeil coined the phrase “set it and forget it” to sell those amazing kitchen gadgets. But the phrase applies to more than slow roasting a rotisserie chicken.

Take water storage, for example. When you’re a rural district serving a vast area with limited resources and staff, you need to be able to trust your equipment. You want to know your tanks and pumps are humming 24/7 month to month and year to year because you don’t have the time to constantly check on them.



The Aquastore® tank from CST was designed with that in mind and it’s the preferred choice of districts like Millstone in southern Illinois. Ken Richards, district manager, needs to ensure every single one of his 2,400 customers spread throughout a 2,080 square mile area are satisfied all the time. Proper storage is critical to water quality and Richards relies on Aquastore because it’s the industry’s leading tank for durability, reliability and low maintenance.

In fact, Millstone has an Aquastore tank that’s over 20 years old. It’s performed so well they opted to buy another one.

“We took it offline for retooling and decided to build a second tank to meet our long-term demand,” says Richards. “We put the new tank online to handle storage while the old one was undergoing maintenance.”

Richards marvels that workers didn’t have to detach a single panel for retooling, which saves time and money. Not having to repaint does, too.

“Typically, repainting a tank has to be done in the summer and you need to plan for roughly three months of down time,” says Dave Hemauer, project manager at Cady Aquastore. “But it took only nine days after the tank was drained and washed out to rehab and make improvements to the older Aquastore tank. After a few days of sealer curing time, the tank was ready for sanitizing and bacteriological testing and back in service.”

Hemauer adds this maintenance can be done any time of year.

The folks at Millstone are counting on both their Aquastores to withstand extreme weather conditions and continual use—unlike concrete or steel tanks. Refined metals and concrete break down or oxidize over time. Corrosion can impact the life of a tank, so the materials used in the tank’s construction make a difference in its longevity. Consider the Aquastore difference:

1. A panel of high strength low carbon steel is blasted and alkaline cleaned.
2. The edges of the panel are beveled and then it’s sprayed with a stainless steel alloy.
3. The panel is sprayed with a specially formulated slurry that gives it durability, consistency and impermeability. Unlike powder coatings or paint, the slurry is inorganic so it blocks corrosion.
4. The panel is then fired at temperatures above 1,500° F (815° C) to fuse the porcelain coating and the steel.
5. Tests are conducted to verify integrity and durability, including high voltage testing to detect discontinuities.

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“We prefer the Aquastore because it’s impervious to the weather and the chemicals in water,” says Joe Boyke, project manager at Clarida & Ziegler Engineering, which is consulting on Millstone’s expansion. “I’ve built 35 to 40 Aquastore tanks in my career and I’ve never seen corrosion, cracking or failure like you see with concrete and steel tanks.”



The glass-fused-to-steel system was designed in anticipation of the wear and tear a liquid storage tank will undergo in its lifetime. By constructing a tank in a way that’s resilient, CST has devised a solution that requires far less maintenance over time. A municipal water provider in South Dakota recently estimated that maintenance for a glass-fused to steel tank over a 60-year span would cost \$266,000 compared for \$906,000 for a painted welded tank.

Millstone’s Aquastore tank is a beauty. Sporting a deep blue luster that won’t fade, it stands 28 feet tall and 81 feet in diameter and features an aluminum geodesic roof and cathodic protection bars on the interior. The glass-fused-to-steel panels were forged in CST’s factory in DeKalb, Illinois and shipped to the site, where they were assembled one level at a time. Scissor lifts were used to raise the dome while panels were secured underneath.

“Aquastore beats other tanks when it comes to construction,” says Andy Rainwater, project manager at Clarida & Ziegler Engineering. “There’s no need for scaffolding because all work can be performed from the ground and the panels fit easily together.”

Rainwater credits Cady Aquastore, the area’s exclusive CST dealer, for much of the success behind Millstone’s tanks.

“They’re always really responsive—whether it’s repair, cleanout or if we just have questions,” he says. “They’re also an essential partner when we need help with a spec or if we have specific design challenges.”



Millstone is preparing to grow and Aquastore helps make it possible. The district sells water to nearby prisons and communities and the boundaries of its service area will soon be extended.

“We’re rehabbing our treatment plant and the Aquastore tanks will be the centerpiece,” says Richards.

Benefits of CST's Aquastore® glass-fused-to-steel tanks:

- No painting for life of tank
- Will not corrode or rust
- Lowest total life cycle cost compared to concrete & welded
- Turnkey services from approval drawings to tank testing
- Faster construction
- No need for cranes or other large equipment for construction
- Expandable
- Interior & exterior easily cleaned
- Tank can be easily relocated
- Available in diameters from 11 feet (3.3 m) to 204 feet (62.2 m) and capacity from 20,000 gallons (75 cu m) to over 6 million gallons (22,700 cu m)
- Specific tank designs, options and accessories to meet customer needs
- Industry best warranty
- White interior coating
- Multiple color options
- Authorized network of local Aquastore Dealers for convenient service and support

OptiDome® geodesic aluminium domes are the preferred cover solution for any storage application. Aluminum dome structures are superior to other cover designs of alternate materials due to: corrosion resistance, low lifetime maintenance cost, clear-span capability, fast and low cost construction and design flexibility.

CST Contact Information:

CST Industries, Inc.

Kim Mathis
Global Marketing Director
713.351.3769
kmathis@cstindustries.com

Cady Aquastore

Dave Hemauer
Project Manager
815.899.5678
daveh@cadyaquastore.com