Fiberglass: Follow the Facts

When it comes to critical infrastructure, facts matter. When it comes to engineering and manufacturing reliable solutions for underground storage, it's the science – not the spin – that counts.

Fiberglass long ago overtook steel as the preferred tank material for underground storage of fuel products because of its inherent corrosion resistance. In contrast, steel tanks have an inherent weakness because they are highly vulnerable to corrosion – despite corrosion mitigation through the addition of linings, coatings, jackets and/or cathodic protection, which all have limitations and drawbacks. For decades, leaking steel underground tanks drove a series of regulatory changes, as evidence of the problem.

With the emergence of new fuels (including E10, E15, E85, ULSD) and endangered groundwater, choosing fiberglass became good for business and good for the environment. *Here's why* –

THE FACTS	Fiberglass Fuel Tanks	Steel Fuel Tanks
#1 Materials	• Inherently corrosion-resistant both inside and out • No added corrosion protection needed • Premium UL-listed and tested resins and glass that are compatible with corrosive fuel products	• Vulnerable to corrosion from surrounding soil and stored products • Need linings, coatings, jackets and/or cathodic protecton to guard against corrosion • Heavier but not stronger
#2 Warranties	• 30-year limited warranty, with an explicit reference to their being no limitation on internal tank water bottoms • Covers both internal and external corrosion of tank • Comprehensive coverage of a wide range of current generation fuels	• 10-year to 30-year warranty (which varies by manufacturer) with no mention of allowing for water bottoms • Covers corrosion but generally requires maintenance records for a warranty claim • Limited list of current fuels
#3 Maintenance	• Not vulnerable to aggressive microbial influenced corrosion due to water bottoms • No required inspection or maintenance for removal of water bottoms • Ongoing cost-savings with no tank-related maintenance required	• Biofuels often cause microbial influenced corrosion, which can lead to tank failure • Required maintenance for removal of water bottoms over the life of the tank • Long-term added cost for ongoing inspection and maintenance

*"As far as protecting my owners and their future, I'm looking at 30 to 40 years down the road. **Fiberglass is the way to go.** It allows us to go with the new biofuels and not worry."* – U.S. Fuel Marketer & Xerxes Customer

Fiberglass vs. Steel Fuel Tanks

What are the facts about price?

In the base tank price, a true double-wall fiberglass tank and a jacketed steel tank may start out comparably priced. The cost difference begins with the cost of adding internal corrosion protection to the steel tank. Beyond that, steel tank owners incur ongoing costs for the maintenance required to ensure the integrity of the corrosion protection over the life of the tank.

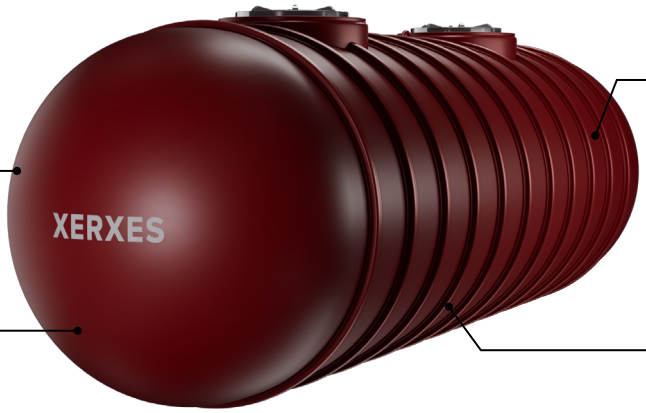
Another fact that tips the scale in favor of fiberglass is that a jacketed steel tank is not actually a true double-wall tank. Evidence is in the steel tank's UL 1746 standard – which merely calls for a "secondary containment barrier." Owners of a Xerxes fuel tank get the secondary containment wall required by the ANSI/CAN/UL/ULC1316:2018 standard for fiberglass – "a structure that is external to the primary tank designed to create an interstice and capture and contain leakage in case of failure of the primary tank."

GEOMETRY

Double-wall cylindrical tank with hemispherical or elliptical end caps

3D GLASS-FABRIC

Creates interstitial space for monitored leak detection and bonds primary & secondary tanks for added strength



MATERIALS

Premium UL-listed and tested resins & glass compatible with corrosive liquids

INTEGRAL RIBS

Integrally constructed, circumferential, high-profile fiberglass ribs

What does the steel tank industry say about internal corrosion?

For more than 20 years, the steel tank industry has acknowledged the likelihood of internal corrosion in their tanks. In 2003, they published a statement about a planned design change, which is yet to be made.

"In light of emerging research on microbial activity within tanks, STI recently has taken another step in a long history of assuring that steel tanks provide a proper storage environment for motor vehicle fuel. Beginning with tanks manufactured after June 30, 2003, certain underground storage tanks bearing the STI label will have either internal zinc anodes or an internal coating installed at the factory to alleviate any possible internal corrosion that may occur at the bottom of the tank during operations."

Steel Tank Institute (STI) Tank Talk newsletter article (April 2003) "Doing the Right Thing Through Internal Tank Maintenance"

Follow the facts to the inevitable conclusion

Fiberglass underground fuel tanks are superior to steel tanks. Fiberglass' inherent corrosion resistance is a significant differentiator because of the inevitable presence of water in fuel systems.

It's no wonder that the vast majority of North America's largest fuel retailers, convenience stores and big-box stores choose fiberglass – and particularly Xerxes fiberglass tanks – as their tank of choice for underground fuel installations.

And that's a fact.

For over 45 years, Xerxes has designed and manufactured fiberglass underground storage tanks for fuel, water and wastewater. Xerxes' most recent expansion is its HydroChain™ stormwater product line — highly engineered products with site-specific designs for stormwater management solutions. Xerxes is a key brand of Mattr, a global materials technology company serving critical infrastructure markets.

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