



MOVE OVER GLASS

TANK CONNECTION IS TAKING THE LEAD IN MUNICIPAL WATER STORAGE!



Since the founding of Tank Connection in 2004, we have promoted to clients and specifying engineers to specify the BEST coating systems available for potable water storage. The #1 factor in fabricating steel tanks for water storage is the tank design, followed by the #2 factor, tank coatings. Tank Connection is the exclusive provider of a proprietary coating system, LIQ Fusion 7000 FBE™, developed by Akzo Nobel, the #1 powder coating supplier in the world. Testing has proven that LIQ Fusion 7000 FBE™ is the best coating system available for potable water storage in steel tank construction. It is simply unmatched in performance globally and is only offered by one company, Tank Connection.

Tank Connection routinely advises specifiers in potable water storage to specify our coating system, along with glass coatings and stainless steel tank construction. In essence, we promote that bid specifications should be released that include all three options. Review the bids and merits of each product and then make your selection. We are confident upon review, that the merits of a superior tank design, coated with the top performance coating system, will be recognized as the preferred choice. Why are we so confident? Because TC is now “crossing the border” as the largest bolted tank manufacturer in the world for liquid and bulk storage applications. There must be a reason why.

Tank Connection’s growth over the last decade has been unprecedented in the steel tank industry and now includes over 500 employees and five tank manufacturing facilities, dedicated solely to storage tank design, manufacturing and field installation services. Combined with our affiliate field-weld tank company, we have over 580 employees and 6 tank manufacturing facilities. Our marketing promotion is simple and straight forward.

WE OFFER THE BEST RTP (ROLLED, TAPERED PANEL) TANK DESIGN,

- *The **BEST** coating system*
- *The **BEST** construction process (EMR .59)*
- *The **BEST** quality control*
- *The **BEST** support team of experienced personnel*

Tank Connection is leading the industry in bolted tank production on a global basis and all of our products and raw materials are manufactured in the U.S. As of 2015, we installed a second high tech powder coating line at another new facility that will allow us to double our bolted tank production. Our client’s global demand for Tank Connection storage products remains “off the charts”; therefore, we are moving ahead with continuous expansions to fulfill their needs.

As Tank Connection is focused on the design, fabrication and field installation of the best storage tank products available, the industry has responded by making us #1 in bolted storage tank systems. Industry specifiers that previously released tank specifications for water storage with a preference for vitreous enamel (glass) coatings are now undergoing a wake-up call. Needless to say, this wake-up call is long overdue and is driven by increased failures of vitreous enamel coatings in water storage applications. Tank Connection’s LIQ Fusion 7000 FBE™ is becoming the specified coating by many municipalities with glass coatings specified as an alternate coating. The simple facts remain, LIQ Fusion 7000 FBE™ by Tank Connection is a stronger system than glass coatings for potable water storage applications.

Glass coating formulations have been changed over the years to address a variety of product deficiencies. When glass spalling was an issue in the early 1990’s, TiO₂ was added to the formulation to alter the glass bubble structure. Regardless of other formulation changes that have been made, today’s glass coatings are not yesterday’s coatings. All of the advances in specialized coatings for water storage across the last decade have been in high performance powder coating systems.

To compound the problem associated with glass coatings, manufacturers of these panels continue to fabricate bolted panels utilizing light gauge steel with web stiffeners on the outside of the tank. As we stated in 2004 and again today, this is a poor design approach for liquid storage. Any municipal client should demand plate thickness in their water tank design, not cheap web stiffeners. In municipal water storage, do you want 12 or 14 gauge in the top rings of your tank with external stiffeners or do you want a tank designed with heavier plate thickness? In comparison, welded tanks designed per AWWA D100 specification will utilize a ¼” minimum thickness.

The failures in tanks coated with glass coatings are significant across the last decade. Unlike the storyline touted by their suppliers, glass tanks have an expiration date. They fracture, they corrode and they fail. Let’s review two of the most recent incidents that have occurred in the last few months that depict glass coating failure and light gauge steel rings. We will point out the facts only and let you draw your own conclusion



GLASS TANK DISASTERS IN THE NEWS

National News:

Waddy, KY

A water tower collapsed in eastern Shelby County on Saturday. Now, officials are trying to determine how it happened. "It reminds you of a tsunami-type wave of water. It just came across and took everything in its path with it," said James Riddle with the Waddy Fire District.

Date of Failure:

August 2014

Tank Age:

29 years old

Tank Type:

Bolted water tank design with glass coating

FIG 1



FIG 2



FIG 3: Depicts corrosion (rusty) break in joint connection. Failure was imminent.

Note: Light gauge steel thickness

FIG 3



Local News:

Parsons, KS

Water Tank Springs Leak

Engineers from a local manufacturer are investigating a burst seam on a tank at the city's water treatment plant to try to determine why it happened and how it will be repaired.

Date of Failure:

October 2014

Tank Age:

15 years old

Tank Type:

Bolted water tank design with glass coating

Joint corrosion and failure

Over 40 panels were replaced

FIG 6: web stiffener utilized

Note: Light gauge steel thickness

FIG 4



FIG 5



FIG 6



In review, we have two glass coated tanks that unzipped and failed in the last three months that made the news. One failure was disastrous. The other failure was controlled because a single row bolt seam intercepted a double row bolt seam. The issues with tanks coated with vitreous enamel continue to grow. There are joint rotation issues, glass coating formulation issues, spalling, light steel tank designs and a simple fact that these tanks can NEVER be recoated. Once you have a problem you can only patch or replace panels, but they can never be recoated.

The field construction issues associated with glass panels also warrant concern. In the field, when glass panels are bolted together it is common that glass shards will be evidenced on the tank floor and in the clothing of the installers. Common sense will tell you that it is difficult to assemble glass coated panels without fracturing the glass in the bolted connection, which is torqued with impact wrenches. Any area where glass has been fractured and is exposed to water becomes a corrosion point. Now return to the pictures on the previous page. The glass coating in the bolt holes was inadequate. Additionally, it is highly likely that areas surrounding the bolt connection were fractured. Relative to the latter tank, dissimilar metal corrosion inside the tank advanced the failure. In summary, the bolted connection on glass coated panels is a problem area and a deficiency of this product line.

In contrast, Tank Connection's bolted panel connection experiences none of the problems associated with glass coated panels. LIQ Fusion 7000 FBE™ is a high tech powder epoxy coating designed for liquid immersion service. Electrostatically applied and baked to the substrate surface, this coating wraps around panel edges and into bolt holes with superior coverage. This proprietary coating system is designed for flexibility and passes 1/8" mandrel testing, which means that it is "perfect" for a bolted connection that is torqued with impact wrenches. The bolted connection of Tank Connection's bolted RTP (rolled, tapered panel) construction coated with LIQ Fusion is one of the superior aspects of our bolted tank design.

Compare and review the facts and you will find that Tank Connection's RTP (rolled, tapered panel) bolted tank design coated with LIQ Fusion 7000 FBE™ is the top performance storage system in the world for potable water storage. It is simply unmatched for municipal water storage applications.

Get the Facts! www.tankconnection.com



Tank Connection is an ISO 9001 certified company. TC leads the storage industry in application expertise, storage innovation and solutions, storage tank manufacturing technology, vertical integration of operations and field construction services. When you specify Tank Connection, you have selected the top performance storage systems and field construction services available globally.

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