

**ZCL | XERXES®**  
making a **lasting** difference®

# Fiberglass Underground Storage Tanks







ZCL | XERXES

## RELIABLE, CORROSION-RESISTANT TANKS

OVER **200,000** FIBERGLASS STORAGE TANKS MANUFACTURED AND SHIPPED  
IN NORTH AMERICA





## A history of **innovation** in the **fuel industry**

When ZCL Composites Inc. and Xerxes Corporation joined in 2007, it brought together North America's two leading fiberglass tank brands: ZCL (founded in 1987) and Xerxes (founded in 1979). Today, ZCL | Xerxes is one of the world's leading innovators in composite tank engineering. Nearly 40 years of manufacturing experience and more than 200,000 tanks manufactured and shipped stand as proof of the reliability and quality of our products.

This solid track record provides our customers with peace of mind, which is why petroleum equipment distributors, fuel marketers and commercial accounts rely on our double-wall tanks for safe underground storage of fuel products. We have provided customers with durable and sustainable products that protect the environment for decades. Our proven track record along with our financial strength assures customers that we will be around to support our industry-leading products and warranties. Currently, 29 of the 30 top c-store marketers<sup>1</sup> choose E15-, E85- and ULSD-compatible, corrosion-resistant fiberglass storage tanks from industry leaders like ZCL | Xerxes.

1 CSP's Convenience Top 101, <http://www.cspdailynews.com/industry-news-analysis/top-convenience-stores/archive/2015>

### Our history of **storage solutions** includes:

- developing the first UL-listed double-wall fiberglass tank
- incorporating our factory-installed hydrostatic monitoring system (TRUCHEK®)
- incorporating our unique 3D glass fabric (Parabeam®) into our tank design



# WHY CHOOSE A FIBERGLASS TANK?

## Best Product Investment

Fiberglass tanks have rapidly grown in popularity since they were first introduced more than 50 years ago as the corrosion-resistant alternative to underground steel tanks that were rusting, leaking and creating serious environmental damage. Major oil companies and large fuel marketers were the first to realize the benefits of fiberglass over steel for underground tanks. Today, a large majority of North American fuel marketers choose fiberglass, and the preference for fiberglass reaches all segments of the market, including industrial, commercial and government accounts who specify, install and own underground storage tanks. The growing understanding of fiberglass' benefits goes well beyond external corrosion protection with the recognition that fiberglass is corrosion-resistant, both inside and out.

## FIBERGLASS OUTPERFORMS STEEL CORROSION RESISTANCE

It's now common knowledge that fiberglass tanks are protected from external rusting due to corrosive soil environments. Today, the widespread use of ethanol-blended gasoline (E10, E15, E85), biodiesel fuels and ultra-low sulfur diesel (ULSD) has shifted the concern about corrosion to include internal protection. Most significantly, new ethanol-blended fuels raise questions about the compatibility of storage tank materials with stored fuel. When today's buyers compare fiberglass and steel tanks they see the clear advantage of our fiberglass tanks, which are not vulnerable to aggressive internal corrosion caused by storage of today's biofuels. The fact that fiberglass tanks are corrosion-resistant both inside and out give them a distinct advantage over steel tanks.

## FUEL COMPATIBILITY

Customers today want to be confident that they are choosing a tank material that is compatible with the new fuels as well as traditional fuels. Our UL-listed (1316) and ULC-listed (S615) double-wall fiberglass tanks are UL-compatible with 0-100 percent ethanol storage. They are also warranted for the full range of ethanol-blended gasoline. The correlating UL listing (58) for steel fuel tanks does not require testing for ethanol compatibility. This third-party compatibility verification for fiberglass tanks – that steel tanks do not have – makes fiberglass the clear and superior choice for fuel tanks.



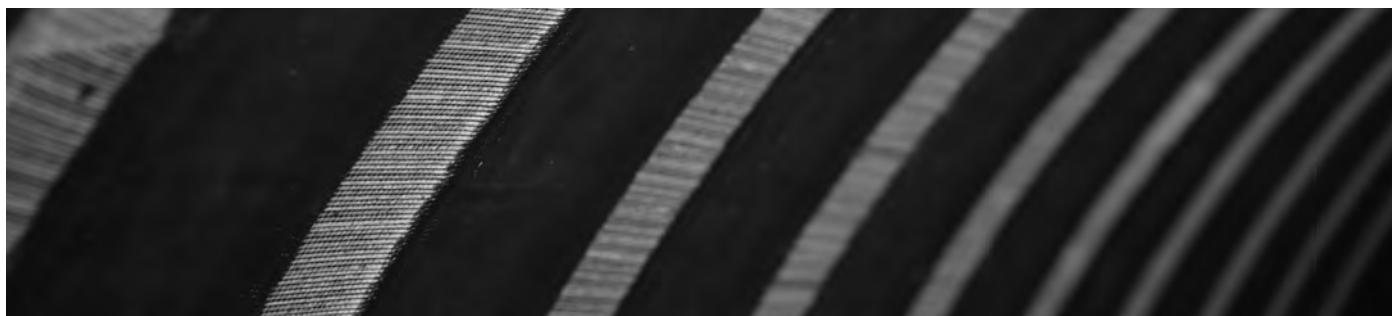




# OUR FIBERGLASS TANKS PROVIDE **UNMATCHED BENEFITS**

## The ZCL | Xerxes Advantage

ZCL | Xerxes double-wall underground storage tanks offer customers several significant design and performance differences that make them a superior choice to both steel tanks and other fiberglass tanks.



### **RIB DESIGN FOR STRUCTURAL INTEGRITY**

As engineers, system designers and customers compare products, the rib geometry of our tanks is an important consideration in their analysis. Our uniform, high-profile ribs are fabricated directly into the tank cylinder. In some other tanks, ribs are incorporated as a separate step in the manufacturing process. Integrally constructed ribs increase the overall strength of the tank and create a structurally superior product.

### **30-YEAR WARRANTY**

ZCL | Xerxes offers a 30-year limited warranty with no restrictions regarding water-bottom monitoring and removal. In contrast, many steel tank manufacturers now have a 10-year rather than 30-year warranty, and make ongoing maintenance and water-bottom removal a condition of warranty coverage.

### **PARABEAM®**

Our proprietary 3D glass fabric, Parabeam®, also enhances the overall structural integrity of our tank by creating a bond between the tank walls, while providing a free-flowing interstitial space for monitoring capabilities. This technology also eliminates the potential for false alarms (created by fluctuating reservoir levels) that can occur in other hydrostatically monitored tanks.

### **MAINTENANCE-FREE**

The presence of water in the bottom of fuel tanks is a common condition. Maintenance to remove it can be frequent and expensive. The requirement to do so, which is found in most steel-tank warranties, can leave a steel-tank owner vulnerable to a denied warranty claim should the tank corrode internally.

### **TRUCHEK® CONTINUOUS LEAK DETECTION**

Our patented TRUCHEK® hydrostatic tank monitoring system for double-wall tanks is an easy, reliable method for true continuous leak detection and tank-tightness testing. Hydrostatic monitoring – now the industry standard for continuous monitoring – gives tank owners greater peace of mind than with a simple liquid sensor, which can fail to detect an outer-wall breach. (See p. 10 for more information.)



# ZCL | XERXES STORAGE TANK SOLUTIONS

Today, double-wall tanks are the industry standard in fuel applications. To meet the needs of our customers we also offer several other fiberglass tank options for a variety of applications and requirements. Our tank options include: double-wall tanks, multicompartment tanks, triple-wall tanks, diesel exhaust fluid tanks and oil-water separators. We also have a tank upgrade system when tank replacement is not viable.

## DOUBLE-WALL TANKS

Tank owners and system designers of underground fuel systems need tanks that provide secure storage of fuel over time. ZCL | Xerxes fiberglass double-wall tanks are an excellent solution because they are corrosion-resistant, both inside and out. Our tanks have a proven record of compatibility with traditional petroleum fuel as well as with new biofuels, which are increasing in use. Our double-wall fiberglass tanks are not vulnerable to the corrosion problems inherent in storing ethanol-blended fuels (E10, E15, E85), biodiesel fuels and ultra-low sulfur diesel (ULSD). Nor are they vulnerable to rust caused by corrosive soil environments. Options such as protective coatings and cathodic protection don't guard entirely against external corrosion and rust. This makes ZCL | Xerxes fiberglass double-wall tanks a superior choice for a wider range of fuel applications.

### FEATURES

- UL-listed (1316) & ULC-listed (S615) for alcohol fuels
- Secondary containment around full tank circumference
- Dry & hydrostatic monitoring options
- Capacities up to 50,000 gal. (USA)
- Capacities up to 155,000 L (Canada)

## MULTICOMPARTMENT TANKS

These tanks are a popular choice among retail gasoline marketers and fleet fueling owners. The ability to store two or three grades or types of fuel in a single tank is particularly appealing when the amount of onsite space makes multiple tanks impossible or difficult. Customers may also find installation and insurance cost savings with a multicompartment tank.

The ZCL | Xerxes double-wall multicompartment tank comes standard with a double-wall bulkhead, while some other tank manufacturers require an upgrade to a double-wall bulkhead. Tanks are available in a wide range of capacities and in diameters of 6 to 10 feet.

### FEATURES

- UL-Listed (1316) & ULC-listed (S615) for alcohol fuels
- Secondary containment around full tank circumference
- Dry & hydrostatic monitoring options
- Two- & three-compartment models
- Capacities up to 40,000 gal. (USA)
- Capacities up to 155,000 L (Canada)





## TRIPLE-WALL TANKS

Some customers and regulatory agencies now require protection beyond secondary containment. Site conditions that could lead to a requirement for tertiary containment are the following: the presence of sensitive groundwater aquifers, lakes or streams. Our UL-listed triple-wall tank, with an additional Parabeam® interstice, is the innovative and cost-effective answer for this level of containment.

### FEATURES

- UL-listed (1316) for alcohol fuels
- Tertiary containment around full tank circumference
- Dry & hydrostatic monitoring options
- Capacities up to 50,000 gal. (USA)
- Capacities up to 155,000 L (Canada)

## DIESEL EXHAUST FLUID TANKS

ZCL | Xerxes has become a leading provider of diesel exhaust fluid (DEF) tanks in truck stops and vehicle fleet fuel facilities in the relatively short time DEF has been in demand in North America. Many fueling facilities now need to add bulk storage of DEF to meet the growing number of vehicles with diesel engines that require diesel exhaust fluid. A fiberglass underground storage tank has a number of benefits over the alternatives.

Since DEF cannot be exposed to carbon steel, a tank constructed of fiberglass is the clear choice. Using our fiberglass underground tank avoids the need for protective coatings or linings to protect the integrity of the product.

Underground storage of DEF has clear advantages over aboveground storage, in part because of the product's specific temperature requirements. An underground DEF tank also allows for storage of larger capacities than an aboveground tank and avoids an unsightly, space-consuming aboveground installation.

### FEATURES

- Single-wall & double-wall models
- UL label available for future product storage flexibility
- Extensive third-party compatibility testing
- Capacities up to 50,000 gal. (USA)
- Capacities up to 155,000 L (Canada)

## OIL-WATER SEPARATORS

With a fiberglass underground tank at the heart of the design, a ZCL | Xerxes oil-water separator incorporates unique refinements within the vessel to create a separator that removes free-floating oils and settleable solids from oil-water mixtures.

A properly sized coalescer is designed to produce effluent quality acceptable to most regulatory requirements for water runoff. Our oil-water separator is an excellent choice for managing water runoff from parking lots or equipment washdown stations.

This product is also available as a UL-listed (2215) and ULC-listed (S656) model.

### FEATURES

- UL-listed (2215) & ULC-listed (S656) models available
- Single-wall & double-wall models
- Flexible design options
- Coalescer & gravity-flow models available
- Capacities up to 30,000 gal. (USA)
- Capacities up to 113,000 L (Canada)



# ZCL | XERXES STORAGE TANK SOLUTIONS



## TANK UPGRADE SYSTEM

In a growing number of situations, secondary containment needs to be added to single-wall tanks, and site challenges make removal of existing tanks either cost-prohibitive or difficult. In instances where tanks are covered or surrounded by buildings, roads or rail lines, adding secondary containment to a single-wall fiberglass or steel tank can be accomplished with our Phoenix System®.

This upgrade system consists of two corrosion-resistant laminates with the proprietary Parabeam® glass fabric between the laminates creating an interstitial space. The interstice can be either dry or hydrostatically monitored. The Phoenix System®, applied onsite by trained installers, is compatible with biofuels, including ethanol-blended fuels and biodiesels.

## FEATURES

- ULC/ORD-listed (C58)
- Corrosion-resistant fiberglass system
- Viable alternative in difficult tank replacement situations
- Suitable for both fiberglass & steel tanks





# ZCL | XERXES FUEL TANK ACCESSORIES

## Your Complete Solution

Today's retail and commercial fueling facilities are sophisticated systems that are installed in a highly regulated environment. While the storage tank is the critical component in an underground fuel system, other important accessories are necessary to provide spill containment, tank anchoring, secondary pipe-drain collection, leak detection and other important functions. ZCL | Xerxes engineers have designed innovative, complementary products that provide system designers and installers with cost-effective, easy-to-install accessories. Very few tank manufacturers provide the wide range of accessories that we can supply. This is yet another example of how our innovative spirit benefits customers.

## Installation & Technical Support

ZCL | Xerxes provides a comprehensive Installation Manual and Operating Guidelines (IMOG) document that outlines the proper – yet easy – steps necessary for a successful installation.

### LEARN MORE ONLINE

Search our online database ([zcl.com](http://zcl.com)) for hundreds of resources for our fuel tanks and accessories, including:

- a pdf version of the Installation Manual
- a video of our Installation Manual
- technical drawings (available in CAD, DWG & BIM)
- guide specifications
- typical installation drawings

## CONTAINMENT SUMPS AND COLLARS

Sumps and collars are common accessories found on virtually all double-wall tanks installed today. ZCL | Xerxes offers factory-installed containment collars that provide secondary containment around tank fittings and manways.

Designed to be a custom-match to the collar, our containment sump comes in a variety of models and sizes, all engineered to accommodate different customer preferences and needs. Our sumps and collars are also available in double-wall models, which are growing in popularity given changes to tank regulations.

### FEATURES

- Flat-sided & round models for various piping layouts
- Watertight or friction-fit cover & open top options
- Diameters of 42 & 48 inches
- Heights of 36-72 inches
- Field-adjustable heights
- Custom options





## ANCHORING SYSTEM

Site-specific installation conditions generally dictate whether a tank-anchoring system is necessary. Some customers choose to anchor all their tanks.

ZCL | Xerxes offers a complete tank-anchoring system, including reinforced precast concrete deadmen (designed to American Concrete Institute standards), fiberglass anchoring straps and galvanized turnbuckles.

Each component is engineered to specific tank sizes and for ease of installation. In most cases, concrete deadmen can be delivered on the same trailer as the tank, which minimizes the shipping cost and assures that deadmen are ready when the tank is set.

### FEATURES

- Deadmen sizes for tank diameters 6-12 feet
- Corrosion-resistant anchor straps
- Optional man-out-of-hole straps available
- Galvanized turnbuckles

## TRUCHEK® CONTINUOUS MONITORING

TRUCHEK® is the ideal solution to the growing regulatory interest in leak-detection methods that provide true continuous leak detection. Unlike dry interstitial monitoring methods, TRUCHEK® is able to monitor both walls of a tank 24/7 in all installation conditions.

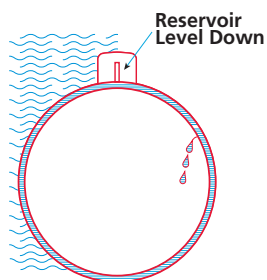
When you order our double-wall tank with the TRUCHEK® option, the interstice is filled at the factory with a calcium-chloride fluid that also partially fills a reservoir, creating an interstitial hydrostatic pressure. An electronic probe placed in the tank's reservoir alarms when the fluid level falls below or rises above the acceptable level.

### FEATURES

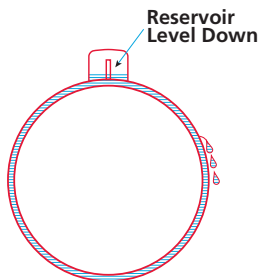
- 24/7 continuous tank monitoring regardless of installation conditions
- UL-verified as meeting the EPA criteria for tank-tightness testing
- Designed for dry-hole & wet-hole installations

## How TRUCHEK® Works

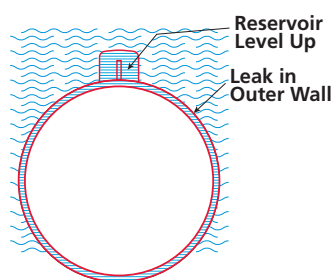
Primary-Tank Leak in Wet Hole or Dry Hole



Secondary-Tank Leak in Dry Hole



Secondary-Tank Leak in Wet Hole



## TANK-TIGHTNESS TESTING

Besides providing true continuous monitoring of both tank walls – regardless of site conditions – TRUCHEK® also provides a simple and precise method to perform tank-tightness tests. A 10-hour tightness-test procedure meets the strict NFPA329 criteria. A 4-hour test (while product is dispensing) exceeds EPA's criteria for a tank-tightness test.

# Underground Double-Wall Tank Data

|     | Nominal Capacity (gallons) | Tank Length (feet/inches) | Nominal Shipping Weights (lbs) (dry interstitial) | Nominal Shipping Weights (lbs) (wet interstitial) | Number of Anchor Straps Required |  | Nominal Capacity (liters) | Tank Length (mm) | Nominal Shipping Weights (Kg) (dry interstitial) | Nominal Shipping Weights (Kg) (wet interstitial) | Number of Anchor Straps Required |
|-----|----------------------------|---------------------------|---------------------------------------------------|---------------------------------------------------|----------------------------------|--|---------------------------|------------------|--------------------------------------------------|--------------------------------------------------|----------------------------------|
| 4'  | 600                        | 7'-3 1/2"                 | 900                                               | 1,100                                             | 2                                |  | 2,500                     | 2,303            | 400                                              | 500                                              | 2                                |
|     | 1,000                      | 11'-7 1/2"                | 1,100                                             | 1,300                                             | 2                                |  | 3,900                     | 3,395            | 500                                              | 600                                              | 2                                |
|     | 2,000                      | 22'-3 5/8"                | 2,800                                             | 3,400                                             | 2                                |  | 5,000                     | 4,380            | 600                                              | 700                                              | 2                                |
| 6'  | 2,500                      | 13'-5 3/4"                | 2,200                                             | 2,800                                             | 2                                |  | 10,000                    | 4,520            | 900                                              | 1,100                                            | 2                                |
|     | 3,000                      | 16'-4 1/4"                | 2,600                                             | 3,300                                             | 2                                |  | 15,000                    | 6,604            | 1,300                                            | 1,600                                            | 4                                |
|     | 4,000                      | 20'-8"                    | 3,600                                             | 4,400                                             | 2                                |  | 20,000                    | 8,465            | 1,700                                            | 2,000                                            | 4                                |
|     | 5,000                      | 26'-5"                    | 4,300                                             | 5,200                                             | 4                                |  | 25,000                    | 10,420           | 2,200                                            | 2,500                                            | 4                                |
|     | 6,000                      | 30'-8 3/4"                | 5,000                                             | 6,100                                             | 4                                |  |                           |                  |                                                  |                                                  |                                  |
| 8'  | 4,000                      | 15'-1 1/2"                | 2,700                                             | 3,600                                             | 2                                |  | 15,000                    | 3,994            | 900                                              | 1,100                                            | 2                                |
|     | 5,000                      | 17'-8 1/2"                | 3,200                                             | 4,200                                             | 2                                |  | 20,000                    | 5,137            | 1,200                                            | 1,500                                            | 2                                |
|     | 6,000                      | 20'-6 1/2"                | 3,700                                             | 4,900                                             | 2                                |  | 25,000                    | 6,090            | 1,400                                            | 1,700                                            | 2                                |
|     | 8,000                      | 26'-1 1/2"                | 4,800                                             | 6,200                                             | 4                                |  | 30,000                    | 7,264            | 1,700                                            | 2,100                                            | 4                                |
|     | 10,000                     | 31'-6 1/2"                | 5,900                                             | 7,500                                             | 4                                |  | 35,000                    | 8,185            | 2,000                                            | 2,300                                            | 4                                |
|     | 12,000                     | 37'-1 1/2"                | 7,000                                             | 8,800                                             | 4                                |  | 40,000                    | 9,392            | 2,300                                            | 2,700                                            | 4                                |
|     | 15,000                     | 46'-9"                    | 9,100                                             | 11,200                                            | 6                                |  | 45,000                    | 10,363           | 2,500                                            | 3,000                                            | 4                                |
|     |                            |                           |                                                   |                                                   |                                  |  | 50,000                    | 11,328           | 2,700                                            | 3,200                                            | 4                                |
|     |                            |                           |                                                   |                                                   |                                  |  | 60,000                    | 13,500           | 3,400                                            | 3,900                                            | 6                                |
| 10' |                            |                           |                                                   |                                                   |                                  |  | 65,000                    | 14,522           | 3,700                                            | 4,300                                            | 6                                |
|     | 10,000                     | 21'-5 1/4"                | 4,900                                             | 6,400                                             | 4                                |  | 50,000                    | 7,449            | 2,900                                            | 3,300                                            | 4                                |
|     | 12,000                     | 24'-1 1/4"                | 5,600                                             | 7,200                                             | 4                                |  | 55,000                    | 8,280            | 3,200                                            | 3,600                                            | 4                                |
|     | 15,000                     | 29'-5 3/4"                | 7,000                                             | 8,900                                             | 4                                |  | 60,000                    | 8,827            | 3,300                                            | 3,800                                            | 5                                |
|     | 20,000                     | 37'-8 3/4"                | 9,000                                             | 11,300                                            | 6                                |  | 65,000                    | 9,576            | 3,600                                            | 4,200                                            | 5                                |
|     | 25,000                     | 47'-6 3/4"                | 11,800                                            | 14,600                                            | 8                                |  | 70,000                    | 10,395           | 3,900                                            | 4,500                                            | 6                                |
|     | 30,000                     | 55'-9 3/4"                | 14,000                                            | 17,200                                            | 10                               |  | 75,000                    | 10,903           | 4,100                                            | 4,700                                            | 6                                |
|     | 35,000                     | 64'-3/4"                  | 16,500                                            | 20,100                                            | 12                               |  | 80,000                    | 11,582           | 4,400                                            | 4,900                                            | 6                                |
|     | 40,000                     | 73'-8 1/4"                | 19,000                                            | 23,100                                            | 14                               |  | 85,000                    | 12,268           | 4,700                                            | 5,300                                            | 7                                |
| 12' |                            |                           |                                                   |                                                   |                                  |  | 90,000                    | 13,068           | 5,000                                            | 5,600                                            | 7                                |
|     |                            |                           |                                                   |                                                   |                                  |  | 100,000                   | 14,345           | 5,400                                            | 6,100                                            | 8                                |
|     |                            |                           |                                                   |                                                   |                                  |  | 110,000                   | 15,723           | 5,900                                            | 6,700                                            | 9                                |
|     | 20,000                     | 29'-4"                    | 14,000                                            | 16,700                                            | 6                                |  |                           |                  |                                                  |                                                  |                                  |
|     | 25,000                     | 35'-7"                    | 16,600                                            | 19,700                                            | 8                                |  |                           |                  |                                                  |                                                  |                                  |
|     | 30,000                     | 43'-1"                    | 19,900                                            | 23,500                                            | 10                               |  |                           |                  |                                                  |                                                  |                                  |
|     | 35,000                     | 49'-4"                    | 22,500                                            | 26,500                                            | 12                               |  |                           |                  |                                                  |                                                  |                                  |
|     | 40,000                     | 54'-4"                    | 24,600                                            | 28,900                                            | 12                               |  |                           |                  |                                                  |                                                  |                                  |
|     | 45,000                     | 60'-7"                    | 27,400                                            | 32,100                                            | 16                               |  |                           |                  |                                                  |                                                  |                                  |
|     | 48,000                     | 65'-7"                    | 29,500                                            | 34,500                                            | 18                               |  |                           |                  |                                                  |                                                  |                                  |
|     | 50,000                     | 68'-1"                    | 30,500                                            | 35,700                                            | 18                               |  |                           |                  |                                                  |                                                  |                                  |

## Notes:

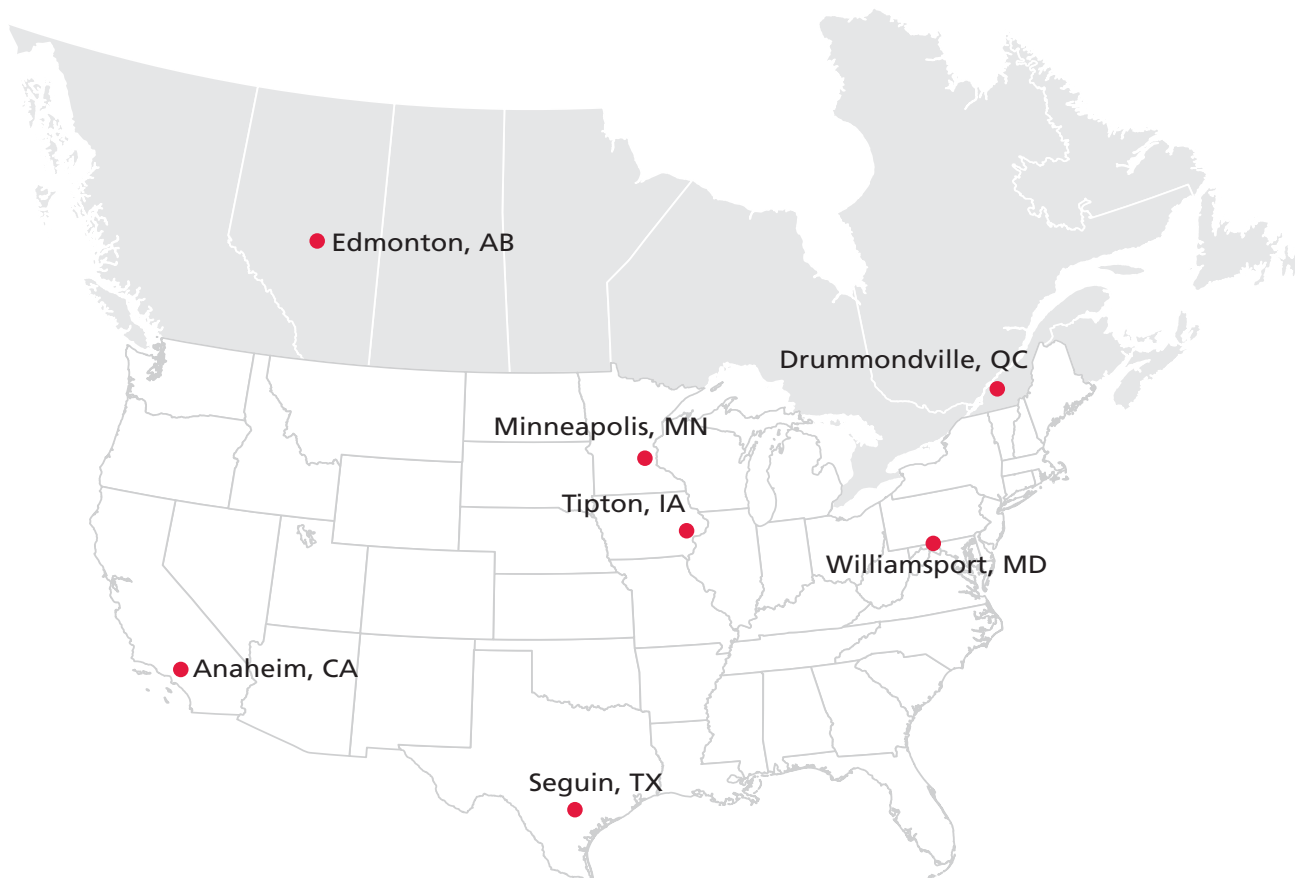
1. Tank data for multicompartment tank models is available at [www.zcl.com](http://www.zcl.com).
2. Actual height of the tank may be greater than the actual diameter due to fittings and accessories. Load height during shipping may vary due to tank placement on the shipping trailer.
3. If an overflow-protection device is installed in the tank, the actual capacity will be reduced.



# Multiple Facilities

## Customers Can Rely on Timely Manufacturing and Delivery of Tanks and Accessories.

With six manufacturing facilities – four in the United States and two in Canada – no matter where customers need fiberglass tanks and accessories shipped, a ZCL | Xerxes manufacturing facility is not far away. No other tank producer offers this kind of manufacturing capability in North America. All our facilities are either UL-listed or ULC-listed.



## Contact Us

We're ready to design a double-wall tank, multi-compartment tank, triple-wall tank, diesel exhaust fluid tank or oil-water separator for your next project.

**On the Web:**  
[www.zcl.com](http://www.zcl.com)

**Technical Support:**  
**1.800.661.8265**  
**USA: 952.887.1890**  
**Email: [eng.support@zcl.com](mailto:eng.support@zcl.com)**

### Corporate Head Office

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1420 Parsons Road SW  
Edmonton, AB T6X 1M5

### US Office

**Xerxes Corporation**  
7901 Xerxes Avenue S  
Minneapolis, MN 55431

### Manufacturing Facilities:

#### Canada

Edmonton, AB  
Drummondville, QC

#### USA

Anaheim, CA  
Seguin, TX  
Tipton, IA  
Williamsport, MD