



8252 S. Harvard Avenue.,
Suite 102 (918) 8096292
Tulsa, OK 74137 brenkes@fiberglassstankandpipe.com
fiberglassstankandpipe.com Fiberglassstankandpipe.com

Fiberglass Underground Petroleum Storage Tanks & Piping 50+ Year History

Sullivan D. Curran P.E., Former Executive Director

Fiberglass Tank & Pipe Institute

50+ Year History: For more than 50 years, fiberglass underground petroleum storage tanks and piping have established an outstanding reputation for corrosion resistant, product compatible storage and distribution of motor fuels, including today's generation of biofuels, chemicals, and various petroleum products.

30 Year Limited Warranty: Institute tank and piping manufacturer's warranty their petroleum tanks and piping for 30 years based on their confidence, which can only stem from a long history of success, and knowledge that properly installed UL Listed fiberglass tanks and piping will last for decades with little or no maintenance.

1960s: In the very early 1960s Owens Corning, a major glass fiber manufacturer, began manufacturing lightweight reinforced plastic underground storage tanks with ribs and hemispherical end caps designed to handle common burial site and loading conditions. Similarly, lightweight fiberglass pipe was developed that was designed for shipment to the job site in lengths up to 40 foot, easily installed with leak free joints, corrosion resistant, and able to withstand high pressures with a low friction flow rates. The tanks and piping were tested and listed by Underwriters Laboratories (UL) Standards 1316, "Glass Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol Gasoline Mixtures" and 971 "Standard for Nonmetallic Underground Piping for Flammable Liquids", and Factory Mutual for the underground storage of flammable and combustible liquids.

1970s: In the early 1970's the major manufacturers of fiberglass tanks (Owens Corning, now Containment Solutions Inc. and Xerxes Corporation) and major manufacturers of fiberglass piping (Ameron and Smith Fiberglass, now NOV Fiber Glass Systems) trained major oil company personnel and their contractors to properly install fiberglass underground tanks and piping at vehicle refueling facilities and other industrial locations. Witnessing the early installation and performance success of fiberglass tanks and piping, state and local building officials recognized the corrosion resistant advantages of properly installed underground storage tanks and piping. This, in turn, prompted model building and fire code organizations (e.g. National Fire Protection Association, Uniform Fire Code, Standard Fire Protection Code) to recognize and include fiberglass tanks, piping and their proper installation in their model codes.

1980's and 1990's: By 1980 certain major oil companies required UL listed tanks to be compatible with fuels

with up to 100% ethanol and methanol. In 1983, the Underwriters Laboratories Listing UL 1316 was revised, and a new listing was included for the storage of fuels with up to 100% ethanol and methanol. In 1988, the UL 971 Listing for fiberglass piping was also changed to include up to 100% ethanol and methanol.

2015: On July 15, 2015 the Environmental Protection Agency's (EPA's) updated Underground Storage Tank Regulations (including piping) were published in the *Federal Register*. The updated regulations adds secondary containment release and detection requirements for new and replaced tanks and piping.

- Double Wall: Today's regulated (petroleum and chemical) fiberglass tanks and piping are both double walled with the ability to monitor the interstitial space for integrity, either hydraulically or with sensors.
- Triple wall underground fiberglass tanks and piping systems are also available with two interstitial spaces for integrity monitoring and are typically used for large volume storage in ultra-sensitive environments.
- Multi-compartment fiberglass tanks are being used more extensively today to store multiple products in the same tanks rather than storing different products separately in smaller tanks. Multi-compartment tanks reduce installation and other multiple storage tank operating costs.
- Tank sizes: Underground fiberglass tank sizes range from 4-foot diameter with 600 gallons capacity to 12-foot diameter with 50,000 gallons capacity. Today, most fuel applications utilize 10-foot diameter single and multi-compartment tank capacities ranging from 25,000 to 50,000 gallons. Large tanks capacities are also typically used for water and wastewater treatment applications.
- Piping sizes: Underground double wall fiberglass pressure piping and fittings are UL 971 listed materials for underground tank installations ranging from 2 through 6- inch diameters.
- Limited Warranty: Fiberglass Tank & Pipe Institute manufacturers of the foregoing described UL listed fiberglass tanks, piping and fittings include a 30-year Limited Warranty.