

With the trend toward cleaner burning biofuels, retail marketers are evaluating their UST systems to determine if upgrades are necessary to meet current regulations. Many of the earliest generation fiberglass tanks were not tested nor were they warranted for either biodiesel or ethanol blends exceeding 10%. Containment Solutions' Biofuel Tank Upgrade (BTU®) is a cost-effective solution to upgrade your existing fiberglass tank. Ethanol blends up to and including E100, and biodiesel blends up to B100 are all compatible with the BTU system from Containment Solutions, Inc. (CSI).

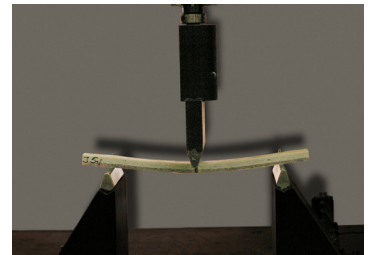
Unlike conventional tank lining methods, the BTU is truly a tank enhancement and not a sprayed liner. The BTU is completed by CSI technicians who are experts in fiberglass tank manufacturing techniques. Our nationwide network of technicians always have the latest certifications in OSHA confined space entry and HAZMAT training.

API 1631 TESTING

CSI completed API 1631 laminate testing on the BTU tank liner. Coupons were taken from actual tank wall laminate and the surface was abraded in the same manner as tanks in the field. After abrasion, multiple layers of resin and glass mat were applied to create the new BTU tank liner. The samples were then totally immersed in the fluids specified in API 1631 as well as some additional alcohol fuel blends for 180 days in an oven with continuous temperature monitoring at 100°F. Samples were pulled and tested at one, three, and six months time intervals. Testing included:

- Flexural Strength (ASTM D790)
- Impact Resistance (ASTM D2794)
- Barcol Hardness (ASTM D2583)
- Film Integrity (ASTM D543)
- Bonding Strength (ASTM D4541)

The results showed that the BTU process results in a liner that is permanently attached to the host tank and that the BTU system did not deteriorate when exposed to the fluids and fuels required in API 1631 including gasoline blends with 10%, 15%, 30%, 50%, and 85% EtOH, 100% EtOH and 100% biodiesel. The CSI BTU system testing met all of the requirements of API 1631.



3-point bending flexural strength testing per ASTM D790.



Bonding strength test per ASTM D4541

BTU® ADVANTAGES:

- Eliminates costly tank replacement and downtime
- Complies with:
 - API Standard 1631
 - NLPA Standard 631
 - FTPI Recommended Practice T-95-02
- Compatible with:
 - Biodiesels per (ASTM) D 6751
 - All blends of ethanol, including 100%
 - ULSD (Ultra Low Sulfur Diesel)

THE UPGRADE PROCESS:

- Step 1 Tanks are inspected, evacuated and cleaned to provide a safe environment.
- Step 2 Manways are added as needed to provide tank access.
- Step 3 Visual interior inspection is performed to verify an acceptable tank condition.
- Step 4 Tank wall is uniformly abraded to allow for a strong mechanical bond.
- Step 5 Layers of resin saturated fiberglass mat are applied then allowed to cure.
- Step 6 Deflector plates are installed under all manways and fittings.
- Step 7 Final tank tightness test may be performed by a licensed third party.

CSI TECHNICIANS ARE CERTIFIED IN THE FOLLOWING:

- Confined Space Entry
- Scaffolding and Fall Protection
- HAZMAT/DOT General Awareness
- Hazardous Waste Site Supervisor
- Hazardous Waste Operations and Emergency Response
- Hazardous Communication Safety Training



The tank surface is abraded to allow for a strong mechanical bond.



Field Service technicians are direct employees of Containment Solutions.

BTU® Additional Services:

While CSI technicians are completing your tank upgrade, they can also install containment collars and watertight sumps. Standard sizes include 42", 48", and 54" diameters in either round or polygon shapes.



CONTAINMENT SOLUTIONS SERVICES
(800) 822-1997

