T.L.E.F.  Spokane Washington
Bio Fuels
Equipment Compatibilities Guide
According to NACS 2017 Retail Fueling report:

There are about 154,000 fueling sites in the United States.

There are currently about 154,958 retail convenience stores. There are 122,552 that sell fuel. (As of December 31, 2017)

About 1600 new stores are built a year.

About 61% of retail fueling facilities are individually owned.

$56K is the average profit of a retail fueling facility.

As of the end of 2017 there are
  about 4300 selling E85
  About 1200 selling mid range ethanol

20% of underground storage tanks are over 30 years old.
Whenever you read or hear of a discussion on biofuels and equipment compatibilities, the focus tends to gravitate towards the tanks, dispensers and piping.
Those are the big ticket items. But that is not the complete fueling system.

And the fuel storage system’s integrity is as only as sound as its weakest link or component.
The typical fueling system is made up of about 60 components.
How to make a fueling system compatible with bio fuels

When introducing a bio fuel product into a fueling facility it will happen through one of two options:

The easiest path is when you are constructing a new fueling facility or new fueling system.

The more challenging option is to retrofit an existing fueling site.
In an ideal world we would be able to build with materials that are universal and compatible with all present and future fuel options.

But the reality is we are not at that point. Each storage tank and associated fueling system is designed for the product being stored and dispensed.

**Challenges to achieving the ideal world:**

- **Cost** – some bio fuel compatible equipment has a significant higher cost

- **Functionality differences** - a part or component may have a required physical/functional difference designed specific to the product being stored and dispensed.

- **Lack of 3rd party listing and test protocol** – new or revised U.L. listings and their test protocol are helping drive universality forward.
Overfill Prevention Valve

The Overfill Prevention Valve is designed to prevent the overfill of USTs by providing a positive shut-off of product delivery.
Submersible Pump

The Submersible Pump is a pump that is located inside a casing. The casing is placed in the fluid to be pumped. When the pump is turned on, the fluid is forced through the pump, causing it to move. In most cases, the fluid is moved to another location, such as a storage tank or a reservoir.
Overfill Prevention Valve

The Overfill Prevention Valve is designed to prevent the overfill of USTs by providing a positive shut-off of product delivery.
Flex Steel Futura E25 and E85 hose is designed for dispensing applications with ethanol blends up to 25% and 85%. (UL330A) Only UL approved E10+ Hose on the market.
To properly upgrade a fueling site:

A comprehensive and thorough site survey should be performed by a qualified contractor, technician or distributor.

Every manhole cover and dispenser door should be removed so all equipment can be evaluated.

Every component and piece of equipment should be documented and identified.

Pictures should be taken for later reference and documentation.
UL 971 and UL 971A Listed Pipe
Pipe dope, also known as thread sealant, is used with threaded ends to make threaded joints leak-proof and pressure tight.
Thank You