

CASE STUDY

DoubleTrac® Stainless Steel Piping for Convenience Stores

- Saves Time
- Saves Money
- Increases Installation Options

Product:

DoubleTrac® Stainless Steel Piping for Re-Pipe of Fuel Dispensing Convenience Store

Location: Augusta, GA

Throughout the 1990's, first-generation double wall, flexible fuel piping systems were installed all across the United States. These new piping systems were engineered to provide quicker and easier installations with minimal fitting connections. This was a huge contrast to installing the traditional double wall fiberglass piping system.

Over time, several of these double wall flexible fuel piping systems proved to be unsuitable for underground use. Many of the first-generation double wall flexible fuel piping swelled and grew which stressed the pipe connections, penetration boots, and sump walls. Lots of these flexible piping contained polymers not suited for underground performance. Certain elastomeric materials can degrade when exposed to water, gasoline and microbes. Failures in these first-generation double wall flexible fuel piping systems allowed petroleum products to leak into the soil and create environmentally hazardous situations.

Today, some Convenient Stores (C-Stores) that dispense petroleum fuels all across the United States still have outdated and unreliable first-generation double wall flexible pipe installed underground. As a result of the poor performance of these first-generation double wall flexible fuel piping systems, Underwriters Laboratory had to revise UL 971 to its current July 1, 2005 edition. All piping manufactures had to retest to the new UL 971 standard. First Generation double wall flexible pipe would not pass the new UL 971 testing procedures.

Consequently, some fuel dispensing C-Stores are not code compliant to the latest UL 971 / UL 971A requirements and have non-conforming underground double wall Flexible pipe installed. Complying with these new regulatory requirements are often times costly. The biggest challenge these owners face, is repairing the fuel dispensing side of the C-Store in the most cost-effective way possible, with minimal loss of revenue.

A National Oil Marketer had a retail site in Georgia with old, failing double walled flexible fuel piping. The premium lines at the site were leaking and had to be shut down until they were fixed. The marketer was concerned with finding a long-term, sustainable solution for this site.

Southern Pump and Tank Co. of Charlotte, NC was the chosen distributor for this project and Elite Petroleum of Taylors, SC was the contractor. DoubleTrac® By OmegaFlex was presented to the National Oil Marketer as the best option for re-piping the C-store, based on the features and benefits of DoubleTrac®.

An initial survey of the site was performed to determine the condition of the existing equipment and identify the materials necessary for a re-pipe. The existing site had underground lines for unleaded, premium, and diesel products and six gas dispensers.

A layout of the existing piping is shown in figure 1. There were two lines for each product going to three dispensers. The piping ran several "S" curves underground.

The degraded double wall flexible fuel piping was installed within a 4" chase pipe. By using the existing chase pipe when re-piping a c-store saves considerable project time and cost because there is substantially less excavating required.

DoubleTrac® was easily spooled off the shipping reel and pulled/pushed through the existing chase piping with no issues. The distributor and contractor were very pleased with the results. By the time the National Oil Marketers management team arrived on site, to witness DoubleTrac® piping being installed

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Existing TCI Retail Site Underground Piping Layout

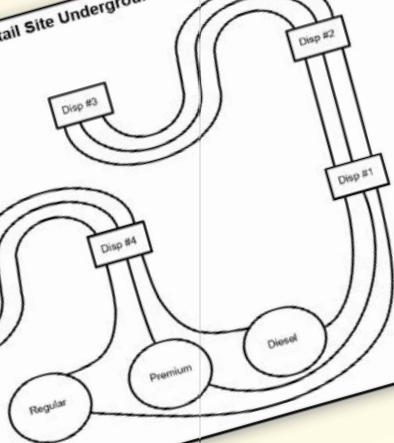


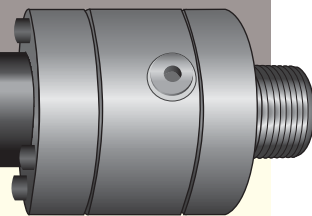
Figure 1: Existing flexible piping layout at the site



Removed Failed Flexible Fuel Piping

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DoubleTrac® Stainless Steel Piping for Convenience Stores



Exposed Tank Field with old flexible fuel piping removed

Re-piping with DoubleTrac®

DoubleTrac® is unique in its ability to easily pull through existing chase pipes. DoubleTrac is lightweight (1.5" is only 1.5 pounds per linear foot). DoubleTrac® is flexible, yet the corrugated stainless-steel primary does not hold a memory. It does not curl up once unreeled. And it is durable. DoubleTrac does not kink even when navigating tough turns underground.



DoubleTrac® running through new UDCs



Secondary Pressure Test on DoubleTrac®

When pressurizing DoubleTrac® through the secondary port of the DoubleTrac® fitting it proof pressure tests both the primary and secondary seals.

into the existing chase pipe, all of pipe runs were installed into the under-dispenser Containment Sumps (UDC's). DoubleTrac® is a proven replacement to failing first-generation double wall flexible fuel piping. DoubleTrac® provides all the key benefits of the first-generation double wall flexible fuel piping systems offered such as, long continual lengths, flexibility, and fewer fitting connections.

DoubleTrac is engineered with features and benefits that benefit both the contractor and end user.

Retail Owners & Marketers

- **Long-Term Solution:** Engineered for years of reliable performance. 30 Year Warranty
- **Future Fuel Ready:** 316L Stainless Steel Primary is suitable for any current of Future Fuels
- **Suitable for Any Conditions:** Nylon-12 Outer Jacket can be exposed to petroleum products. Can be installed in a "hot" site without voiding warranty.

Contractors & Installers

- **Re-pipe without Trenching:** DoubleTrac® can be run through existing chase pipe and installed without breaking concrete.
- **Minimal Down Time:** DoubleTrac® can be installed in any weather condition. No glue or adhesive to wait to set.
- **Safety:** DoubleTrac®'s end fitting can be installed outside the sump.

In the end the best system won. The combination of S.A. Bravo tank sumps, UDC's, and entry fittings along with DoubleTrac® piping and field attachable fittings was the key to success.

DoubleTrac® is a double wall fuel piping that has a 316L Stainless Steel primary and an Engineered Fluoropolymer EFEP (Ethylene Fluorinated Ethylene Propylene) as a second barrier that is bonded to a Nylon 12 outer jacket which is UV protected. DoubleTrac® can be considered a "Green Product" because, the primary Stainless Steel piping has zero permeation and the EFEP/Nylon12 outer jacket has nearly zero percent permeation (.000001%). DoubleTrac® is a true Future Fuel ready pipe, and is the best choice for today's Recreational Fuels, Bio Diesel and Low Sulphur Diesel blends.

DoubleTrac® pipe and fittings are UL 971A listed and meet the salt spray test requirements of ASTM-B-117-90.

DoubleTrac® passed a 2-hour Fire test witnesses by UL (Underwriters Laboratory).

DoubleTrac® also meets the stringent requirements of the Florida Department of Environmental Protection for Marina piping systems.

DoubleTrac® has a patented mechanically field attachable fitting that creates a Metal to Metal Seal that requires NO O-rings which have a finite life span and can degrade over time. DoubleTrac® is a highly engineered piping and fitting assembly that has the chemical compatibility to be used with other products such as, propylene glycol (antifreeze).

DoubleTrac® can be purchased in a variety of lengths supplied on reels. One of the advantages of DoubleTrac® is the ability to be delivered in long lengths. The benefit of long lengths is fewer transition sumps and fitting connections. Reducing the amount of potential leak paths. DoubleTrac® can be ordered in shorter lengths as well, to minimize waste and control cost.

DoubleTrac® has a 15 Year Above Ground Warranty and a 30 Year Below Ground Warranty.

DoubleTrac® also offers Double Wall Elbows and Tee fittings.

OmegaFlex offers a team of in house Engineers dedicated to assist with any type of piping layout, or technical question about DoubleTrac®.

Contractors must be certified to install DoubleTrac® OmegaFlex offers onsite training free of charge.



DoubleTrac® Reel