



Stainless Steel Double Containment Fuel Piping for Marina Applications

Product Information Guide



DoubleTrac® Piping System by OmegaFlex®

UL 1369 Listed with Special Use Ratings for Fixed, Semi-Fixed or Floating Docks

Overview

DoubleTrac® piping system by OmegaFlex® is the perfect piping system for marina fueling applications. DoubleTrac® is the only piping system listed under both UL971A for Belowground Piping Systems and UL1369 for Aboveground Applications made in the U.S.A. Dual UL Listings allow DoubleTrac® to be used without the need for transition sumps when coming off an AST Tank or at the shoreline. Additionally, DoubleTrac® is a direct burial piping so use of chase piping is not required. This has allowed DoubleTrac® to reduce the overall cost of projects.

Tidal Cyclic Testing was performed on DoubleTrac® piping to simulate the effects of tidal movement on piping connected to semi-fixed or floating docks. Per UL1369 requirements, DoubleTrac® was pressurized while being subjected to dynamic bending at the minimum bend radius for 10,000 complete cycles. DoubleTrac® passed all UL1369 Cyclic Testing requirements and is UL1369 listed with Special Use Ratings for Fixed, Semi-Fixed or Floating Docks.

DoubleTrac® primary piping is 316 stainless steel and utilize field attachable fittings that create an all metal-to-metal sealing surface without the use of O-rings. The use of an all metal-to-metal seal has allowed DoubleTrac® to obtain a UL1369 certified 2 Hour Fire Listing.

Compatibility

DoubleTrac® piping system is compatible with all the following:

- Motor Vehicle Fuels (MV) - petroleum based hydrocarbon fuels which are typically found in consumer dispensing applications, boiler operations, and emergency generation systems. These fuels consist of gasoline, diesel, and blended fuels with a maximum 15% MTBE, 15% Methanol, or 30% Ethanol.
- Concentrated Fuels (CT) - Alternate un-blended fuels with up to 100% concentrations of Toluene, Methanol and Ethanol.
- High Blend Fuels (HB) - Fuels with higher-than-normal gasoline blends with maximum 50% Methanol or Ethanol.
- Aviation and Marine Fuels (A&M) - Specialty aviation and Marine use fuels with up to 100% kerosene or leaded gasoline.
- Bio-Fuels – All grades and types.

Installation and Training

DoubleTrac® piping system must be installed as specified on the contract drawings or at the discretion of the installing contractor. If installed at the discretion of the installing contractor, it is the contractor's responsibility to provide a complete pipe conveyance system as required for the project. Pipe sizes are based on required flowrate, therefore pipe sizes specified on contract drawings must be used.

All DoubleTrac® pipe and fittings installed or constructed in the field must be assembled by technicians of the contractor who have been satisfactorily trained through the OmegaFlex® Aboveground Marina Petroleum Piping Systems Installation Training Program.

When the installing contractor is not certified, onsite training and certification of the contractor's technicians will be provided by OmegaFlex®. Off-site or classroom trainings are not permitted.

The DoubleTrac® piping system must be installed in strict accordance with the DoubleTrac® Design and Installation Guide latest revision. The installing contractor is responsible for all necessary tools required for a complete testable piping installation.

Piping-Materials and Construction

Primary Piping

- Type 316 stainless steel strip conforming to ASTM A240
- Not subjected to heat treating or annealing after the corrugation forming operation
- Suitable for operation with all fuels as defined in UL971A and UL1369
- Pressure ratings of 125 psig (1"), 100 psig (1-1/2") and 75 psig (2")
- UL1369 2hr fire rating

Secondary Jacket

- 2-layer co-extrusion consisting of EFEP and Nylon 12
- Pressure rating of 50 psig (all sizes)
- UV resistant

Mechanical Attachment Fittings

- Made from type 316 stainless steel
- Provide a metal-to-metal seal (no gaskets)
- Utilize a port for interstitial space monitoring and or testing

DoubleTrac® piping is available in 1", 1.5" and 2" diameter and provides bend radius, pressure ratings, vacuum ratings as listed below.

TABLE 1: Bend Radius

Pipe Size	Minimum Bend Radius
1"	12"
1-1/2"	24"
2"	32"

TABLE 2: Product Operating Parameters

Pipe Size	O.D. Nom	Weight	Primary Max Operating Pressure	Secondary Max Operating Pressure	Max Vacuum Rating
1"	1.55	0.75 lbs/ft	125 psig	50 psig	29" Hg
1-1/2"	2.30	1.50 lbs/ft	100 psig	50 psig	29" Hg
2"	2.93	2.00 lbs/ft	75 psig	50 psig	29" Hg

Table 3: DoubleTrac® Volume/ft

ID Volume				Volume In Interstitial Space		
Size	Average DIA	in ³ /ft	Gals/ft	Size	in ³ /ft	Gals/ft
1"	1.188"	13.290	0.058	1"	1.711	0.009
1-1/2"	1.683"	26.680	0.115	1-1/2"	3.109	0.019
2"	2.238	47.184	0.204	2"	4.243	0.025

Table 4: DoubleTrac® Shipping Reels

DoubleTrac® Shipping Reel (80" x 60" x 32")				
Size	Piping Length (ft)	Approx. Reel Weight (lbs)	Piping Weight (lbs)	Total Weight (lbs)
1"	750	400	563	963
1-1/2"	500	400	750	1150
2"	350	400	700	1100

DoubleTrac® Material Handling

DoubleTrac shipping reels have a 3" diameter arbor hole which can be used to lift or place the DoubleTrac reel onto a reel stand. DoubleTrac is durable and flexible, yet the corrugated stainless-steel primary does not hold memory or curl up once unreel. DoubleTrac does not kink even when navigating tough turns under marina docks.

Flow Rates

Please contact OmegaFlex Engineering for flow rate calculations.

Fixed Dock

When installing DoubleTrac® on a fixed dock, the piping may be run along the side or underneath the dock structure. In either case, the routing must be such that DoubleTrac cannot be damaged, crush, or kinked during normal use of the dock. DoubleTrac must be supported evenly along the entire run and supports are required per table 5. Typical supports are stainless steel Unistrut conduit hangers, "U" bolts, PVC pipe couplers, or hosebuns.

Floating Dock

Floating docks are unique and require OmegaFlex Engineering to determine if DoubleTrac® can be used along the gangway. In many cases DoubleTrac® can be used along the gangway because the tidal surge is not significant enough to cause fatigue or premature failures. When Omega Flex Engineering determines DoubleTrac® cannot be used along the gangway, the dock to shore connection must be an approved flexible dock connector. DoubleTrac® can be installed along the length of the floating dock portion. The routing must be such that DoubleTrac® cannot be damaged, kinked, or crushed during normal use of the dock. The piping must be supported evenly along the entire run; supports are required per table 5. Typical supports are stainless steel Unistrut conduit hangers, "U" bolts, PVP pipe couplers, or hosebuns.

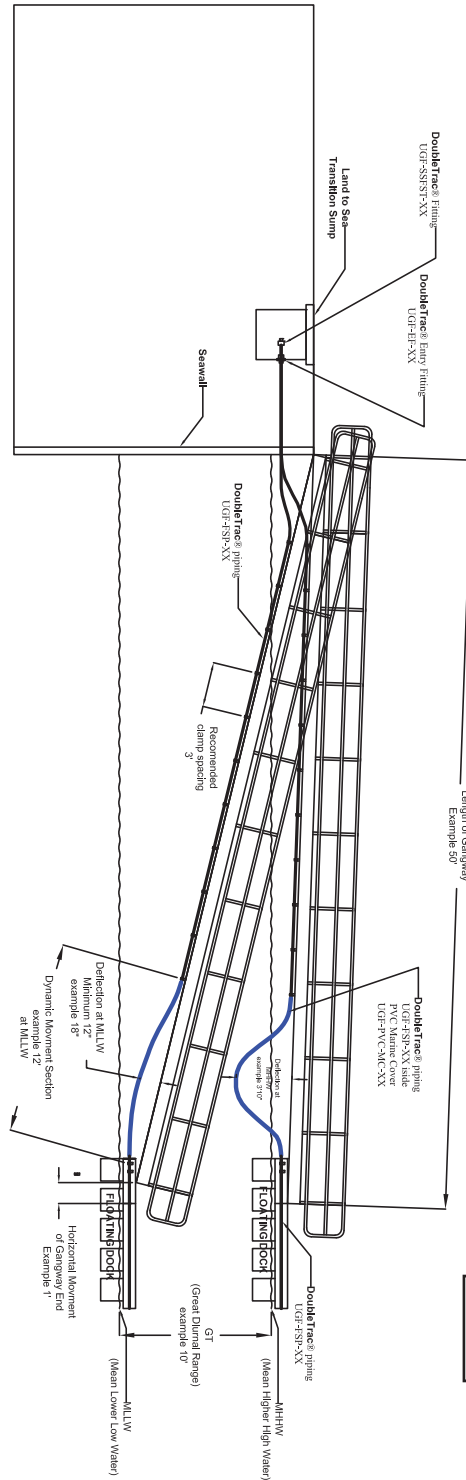
NOTE:
The pipe length required to handle tidal surges must be calculated and approved by OmegaFlex® Engineering.

TABLE 5: DoubleTrac® Maximum Clamp Spacing (ft)

Pipe Size	Horizontal or Fixed Dock	Vertical	Floating Dock
1"	6	15	3
1-1/2"	8	15	3
2"	10	15	3

DoubleTrac® Marina Floating Dock Sample Layout

Roller Clamps refer to Roller Pipe Hangers
 Fixed Clamps refer to Unistrut Clamps, Pipe Hangers, & U-Bolts.



Contact DoubleTrac® engineering for site specific recommendations.



For more information please visit us at

doubletrac.net

© Omega Flex, Inc 2021



OmegaFlex, Inc.

451 Creamery Way • Exton, PA 19341 • 1-800-355-1039

ISO 9001 Registered Company

DBT-220 08/21