

DEF-Trac[®] By OmegaFlex[®] Inc. Flexible Stainless Steel Piping Specification Sheet

Specification date _____

Project Name: _____

1) General

The primary delivery piping system shall be for suction or pressure applications and have semi-rigid single wall construction, with a stainless steel primary pipe fitting snug into the outer jacket. The piping system will contain a single layer un-insulated jacket, or a heat traced and insulated jacket. All flexible piping system components shall be approved for use in above ground and underground applications. All aboveground piping is designed for continuous exposure and shall have a UV resistant jacket. All underground piping is designed for direct burial and pipe runs can be joined with the use of transition sumps only. The piping system shall be compatible with chemicals naturally found in the ground and resistant to bacterial attack. Piping shall be supplied in flexible coils for pipe runs with no joints. All pipe and fitting materials shall be listed in ISO 22241-3. Where desired, flexible stainless steel pipe can be installed within a 4" or 5" thermoplastic corrugated gravel guard pipe chase to permit replacement of the product piping without the need of excavation. Pipe shall be available in 1", 1.5" and 2" diameter and provide bend radius, burst pressures, pressure ratings, vacuum ratings and operational temperatures as listed in below.

Non stainless steel primary pipe shall not be allowed for product bearing piping. This includes FRP, polyethylene or multilayered flex pipe with bonded, swedged, glued, or fusion weld.

Termination fittings shall be manufactured from stainless steel, as specified in ISO 22241-3.

2) References

ISO 22241-3, "Diesel engines — NOx reduction agent AUS 32 —Part 3: Handling, transportation and storage"

ASME B31.1, "Power Piping"

ASME B31.3, "Process Piping"

NFPA 30, "Flammable and Combustible Liquids Code"

NFPA 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages"

NFPA 37, "Stationary Combustion and Gas Turbines"

PEI/RPI-1100, "Recommended Practices for the Storage and Dispensing of Diesel Exhaust Fluid"

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3) Compatibility

The piping system and fittings shall be resistant to all of the following:

- A. DEF / AUS 32 per ISO 22241.

4) Standards & Certifications

All flexible piping system components shall be approved for use in above ground and underground applications. All piping and components must be manufactured in an ISO 9001 certified facility.

5) Piping - Materials and construction

a. Primary Piping

- i) Shall be made from T316 series Stainless Steel Strip conforming to ASTM A240.
- ii) Piping shall not be subjected to heat treating or annealing after the corrugation forming operation.
- iii) Piping shall be suitable for operation with all fluids as defined in ISO 22241.
- iv) Piping shall be rated for 50 Psig maximum operating pressure.
- v) Piping shall be rated for a temperature range of -40°F to 120°F.
- vi) Piping Bend Radius / OD

SIZE	PART No.	Description	MINIMUM BEND RADIUS (in)	NOMINAL OD (in)
1"	DF-FSP-16	1" Un-Insulated DEF-Trac	7	1.41
1-1/2"	DF-FSP-24	1-1/2" Un-Insulated DEF-Trac	12	1.93
2"	DF-FSP-32	2" Un-Insulated DEF-Trac	14	2.51
1"	DF-FSPHT-16	1" Insulated, Heat Traced DEF-Trac	18	2.65
1-1/2"	DF-FSPHT-24	1-1/2" Insulated, Heat Traced DEF-Trac	30	3.15
2"	DF-FSPHT-32	2" Insulated, Heat Traced DEF-Trac	35	3.50

6) Mechanical Attachment Fittings

- a. Fittings shall be made from 300 series Stainless Steel.
- b. Fittings shall provide a metal-to-metal seal (no Gaskets or O-rings).

7) Delivery, Storage and Handling:

Pipe and fittings shall be protected from damage due to impact and point loading. Pipe shall be properly supported to avoid damage due to flexural strain. The contractor shall not allow dirt, debris or other extraneous materials to get into the pipe and fittings.

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8) Installation and Training:

The piping system shall be installed as specified on contract drawings or at the discretion of the installing contractor to provide a complete pipe conveyance system as required for the project. Pipe sizes shall be as shown on the contract drawings.

All pipe and fittings installed or constructed in the field shall be assembled by technicians of the contractor who have been satisfactorily trained by the manufacturer. When the installing contractor is not certified, the pipe manufacturer shall provide onsite training and certification of the contractor's technicians in the proper assembly and installation procedures. Off site, classroom training is not acceptable.

The piping system shall be installed in strict accordance with the manufacturer's current installation instructions. The installing contractor shall be responsible for all necessary tools required for a complete testable piping installation.

9) Testing Underground Product Piping

a. General

Contractor shall notify, where required, any authorities having jurisdiction in advance of any piping tests. Prior to pressure testing, the piping must be isolated from any tanks, pumps, boilers or dispensers. An air pressure test must be performed on the primary piping to detect any leaks that may exist. Test pressure to be in accordance with OmegaFlex Product Installation Manual. All testing shall be in compliance with the pipe manufacturer's installation instructions.

b. Prior to Backfill

All new piping shall be tested before being covered, enclosed, or placed into service. Test pressure to be in accordance with OmegaFlex Installation Manual for a minimum of one hour with no pressure decay.

c. Tightness Certificate

Upon completion of the test, the Contractor shall provide a "Certificate of Tightness" to the Owner.

10) Testing Aboveground Product Piping

a. General

Contractor shall notify, where required, any authorities having jurisdiction in advance of any piping tests. Prior to pressure testing, the piping must be isolated from any tanks, pumps, boilers or dispensers. An air pressure test must be

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performed on the primary piping to detect any leaks that may exist. Test pressure to be in accordance with OmegaFlex Product Installation Manual. All testing shall be in compliance with the pipe manufacturer's installation instructions.

b. Tightness Certificate

Upon completion of the test, the Contractor shall provide a "Certificate of Tightness" to the Owner.

11) Heat Trace:

All heat trace accessories shall be manufactured by Thermon Manufacturing Co., as specified on contract drawings.

12) Acceptable Manufacturer and Products:

All pipe, fittings and specialty components for a complete fuel delivery system shall be as manufactured by OmegaFlex, Inc. Exton, PA (Phone Number 800-355-1039) or approved equal.

13) Warranty

The piping system manufacturer shall provide a 1 year warranty per its standard warranty terms.