

## PRODUCT DATA SHEET

# 4 inch - 2,250 psi 900 ANSI

### Next Generation of Steel Line Pipe

FlexSteel is a revolutionary spooled pipe solution that couples the durability of steel with the installation, performance, and cost benefits of flexible pipe products.

- Reduced CAPEX with up to 65% lower installation cost
- Corrosion-resistant properties eliminate cost of maintenance, lowering overall OPEX
- The only truly, dependable pipeline product proven through 100% reliability
- Environmentally friendly zero emission lines
- Faster commissioning and improved flow rates

### Durable & Reliable by Design

With unmatched structural integrity, FlexSteel's helically wound steel core provides durability and longevity as it does not need to be de-rated over time. It will not weaken when wet and will stand up to the most grueling cyclic loading environments.

It is the only on-shore flexible pipe with API 17J certification and an environmentally friendly gas capture annuals for zero emissions. It is the clear choice when failure is not an option.

### Installations Made Easy

FlexSteel is fast, easy and inexpensive to install with minimal disruption to land, which can cut installation time from weeks to days. It can be laid directly in even the most challenging terrains without the need for special bedding or handling.

Our time tested swaged fittings make for fast, reliable connections that are not sensitive to cleanliness or ambient temperature.

### Applications



#### Oil & Gas

FlexSteel is a smart investment that yields indisputable life-cycle quality cost and performance advantages in a myriad of oil and gas applications.



#### CO<sub>2</sub>

FlexSteel uses a combination of polyethylene and steel to create the ideal pipe for CO<sub>2</sub> transportation.



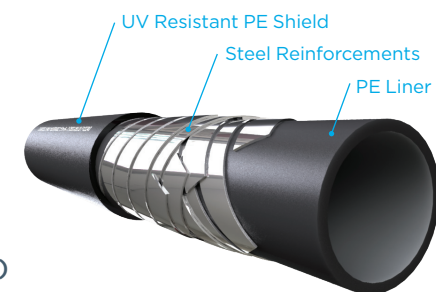
#### Water

Fast, easy and cost-effective installation coupled with extreme corrosion resistance make FlexSteel a natural choice for water pipelines.



#### Other Applications

Our solution-based approach has opened up many applications and markets where FlexSteel adds tangible, long-term value.



### Pipe Specifications

Reel Length - 1,821 ft (555 m)

#### Dimensions

Pipe Inside Diameter	93.2 mm	3.669 in
Pipe Outside Diameter	120.9 mm	4.760 in
Storage Bend Radius, SBR	1.08 m	3.6 ft
Operating Bend Radius, OBR	1.08 m	3.6 ft

#### Weights

Weight Empty in Air	12.6 kg/m	8.5 lb/ft
Weight Water-filled in Air	19.6 kg/m	13.2 lb/ft
Weight Empty in Water	0.9 kg/m	0.6 lb/ft
Weight Water-filled in Water	7.8 kg/m	5.3 lb/ft
SG Empty in Air	1.10	1.10
SG Pipe Wall	2.71	2.71

#### Pressures

Design Pressure	15.51 MPa	2,250 psi
Factory Test Pressure	20.17 MPa	2,925 psi
Burst Pressure	33.43 MPa	4,849 psi
Maximum External Pressure	414 kPa	60 psi
Maximum Water Depth (Fresh Water)	42.2 m	139 ft

#### Flow Properties

Absolute Roughness, $\epsilon$	1.5E-06 m	5.0E-06 ft
Relative Roughness, $\epsilon/D$	16E-06	16E-06
Hazen-Williams Coefficient, C	150	150

#### Thermal Properties

Maximum Temperature	60°C	140°F
OHTC, U (based on ID)	29.26 W/m <sup>2</sup> °C	5.15 BTU/hr-ft <sup>2</sup> °F

#### Mechanical Properties

Bending Stiffness, EI	2,811 N·m <sup>2</sup>	6,803 lb·ft <sup>2</sup>
Spooling Tension	2.4 kN	539 lb
Maximum Installation Tension	53.4 kN	12,000 lb