



Mandals Tubeman M Extra has been specifically designed for trenchless rehabilitation of industrial pressure pipelines transporting sewage, drain water, hydrocarbons, such as fuels, gasoline, natural gas, oil, and other non-aggressive liquids and gases. The liner is designed for medium pressure systems.

With Mandals Tubeman M Extra we offer a more sustainable solution for the rehabilitation of old pipelines with minimal disruption to traffic, pedestrians, and the environment in general, with an improved CO2 footprint and HSE performance. The hose liner is flexible in terms of the diameter variation of the original pipe, effortlessly passing bends even at long section lengths. Tubeman M Extra is thicker and with a special TPU for higher temperature and with improved chemical resistance compared to the standard Tubeman M.

Installation

Mandals AS supplies the liner leak-proof tested and taped in a U-shape. Prior to installation a regular cleaning procedure is required of the host pipe and condition controlled by CCTV inspection.

The liner is pulled through the host pipe by using a winch and can be installed in pipes having bends up to 45° (R/D ≥5)¹. No curing process by steaming or adhesives is needed for installing the liner, only a small amount of pressure is applied to break the tape and unfold the liner. Thereafter the liner is re-coupled and connected again to the existing infrastructure and the system is ready to be put back into operation.

Features

- Resistant to a wide range of chemicals.
- Excellent hydrolysis and fungus resistance.
- Outstanding wear and tear properties.
- Low risk of delamination in bends due to excellent layer bonding
- Dampen pressure hammer effect and reduce debris build-up
- Service Lifetime will depend on several important factors such as proper and correct installation, condition of the existing pipe, type of medium pumped through the liner, temperature, etc.

Construction

- Mandals Tubeman M is a loose-fit, non-interactive liner which will absorb all internal pressure while in operation.
- The reinforcement is made of a seamless fabric with aramid as load-carrying fibers (one or two layers)
- The "extrusion through the weave" production technology gives superior bonding between the TPU cover, weave and lining (adhesion >4 kN/m between layers is far exceeding ASTM F3708-25), as well as firmly encapsulating the circular woven aramid reinforcement.
- The liner complies with ISO11295:2022, ISO11299-1:2018 Lining with inserted hoses and ASTM F3708-25

Properties

- Length up to 400m.
- Color options: Black (standard).
- Different coupling options available.
- Max. recommended operational temperature is +50°C (122°F)

Tubeman M Extra

Article Number	-	TMME300	TMME350
Nominal Pipe size DN	mm Inch	300 12	350 14
Inner Diameter	mm Inch	258 10.16	297 11.70
Wall Thickness	mm Inch	6.0 0.24	6.0 0.24
Nominal Weight	kg/m lbs/ft	5.7 3.83	6.0 4.03
Burst Pressure (BP)	bar psi	64 928	50 725
MOP Water ⁴	bar psi	26 377	20 290
MOP OIL/Gas ⁴	bar psi	16 232	12 174
Actual Total Tensile Strength	x1000 kg x1000 lbs	95 211	109 242
Length Extension	%	<1	<1
Outer Diameter at 10% of BP ²	mm Inch	285 11.22	331 13.03
Outer Diameter at MOP Water ²	mm Inch	292 11.50	337 13.27
Outer Diameter at MOP OIL/Gas ²	mm Inch	289 11.38	334 13.15

Note: ¹The sharpest bend angle and corresponding R/D ratio of the pipeline system will impact and set the Maximum Operating Pressure (MOP). A 45° bend (R/D = 5.5) will entail a 45% reduction of MOP of the rehabilitated pipeline system. ²Tolerances according to ASTM F3708-25. For questions about chemical resistance please check mandals.com/support.