



Mandals Inversion Lining is designed for relining and renovation of all kinds of leaking transfer pipes (drinking water, methane gas, sewer, industrial chemicals or other).

Mandals Inversion Lining is an extremely flexible polymer coated hose (in Polyethylene or Hytrel), designed for relining and renovation of all kinds of leaking transfer pipes. This includes pipes for drinking water, methane gas, sewer or industrial chemicals.

Also looking for a calibration hose? Click [here](#) to see Fenner Precision's range.

The main advantages of the Mandals pipe renovation system are:

- Cost savings (no need to invest in new pipes or excavation of such)
- The liner flexibility vs. diameter variations of the original pipe
- Easy to pass even sharp bends also in longer lengths
- Reduced "out of service time" of the pipe system

Other benefits of the Inversion Lining renovation system are:

- Renovation of long pipe sections (length/diameter ratio)
- Can be opened from the inside by remote controlled robot drilling
- Connecting service lines can be done in a traditional way
- Minimum reduction of pipe cross section area
- Minimal obstruction of traffic
- Increased flow capacity because of less pipe wall roughness
- Resistant to vibrations and settings underground
- Resistant to leaks even at high internal pressure
- Totally maintenance free

The outer polymer layer of 1.2 mm is extruded on a strong circular polyester weave, ensuring the achievement of two crucial parameters:

1. A uniform polymer distribution around the lining circle.
2. Excellent adhesion of polymer to the textile weave.

The lining itself is installed into the host pipe by reversion, using either compressed air or water as a pressure medium. Prior to the installation, the lining is coated inside by a liquid epoxy resin, which when cured by steaming attaches permanently to the inner pipe wall. Alternatively, the liner could stay loose in the pipe by terminating it with end couplings.

The installation of Mandals Inversion Lining requires special equipment and highly skilled crew, and is carried out by specialized contracting companies. If needed we can put you in contact with such companies.

The strong polyester yarn in the weave provides the longitudinal and circumferential strength, whilst the polymer layer (i.e. the final inside barrier after reversion) ensures impermeability and chemical resistance to the conveyed fluid.

Two standard polymers are available:

1. Polyethylene (PE) lining is suitable for renovation of drinking water pipes, sewer lines and other transfer pipes for water based fluids.
2. Hytrel (HY) lining is suitable for renovation of gas pipes (natural gas) at low or medium pressure.

Mandals Inversion Lining covers a nominal internal pipe diameter range from DN150 up to DN300. Four standard dimensions are available, and non-standard dimensions may be delivered on request. Section lengths up to 1000 meters per bobbin.

The standard burst pressure of min. 10 bar can be increased to 20-30 bar if requested, resulting in a reinforcement able to cope also with larger holes in the host pipe.

Technical Data

Nominal Pipe Inner Diameter		Wall Thickness		Weight PE lining		Weight HY lining		Burst Pressure	
inch	mm	inch	mm	lbs/ft	kg/m	lbs/ft	kg/m	psi	bar
4	100	0,07	1,70	0,32	0,48	0,32	0,48	174	12
6	150	0,07	1,85	0,47	0,70	0,54	0,81	145	10
8	200	0,08	1,95	0,77	1,15	0,81	1,20	145	10
10	250	0,08	2,00	0,91	1,35	1,02	1,52	145	10
12	300	0,09	2,15	1,18	1,75	1,31	1,95	145	10