PRIMUS LINE

The prime solution for pipes.

Trenchless Pipeline Rehabilitation

Product Origin: Germany

Mun Siong Engineering is an authorised Prime Installer for Primus Line® in Singapore. Primus Line® is an innovative technology for the trenchless rehabilitation of pressure pipelines for different media such as oil, water and gas.

The Prime Solution for Pipes

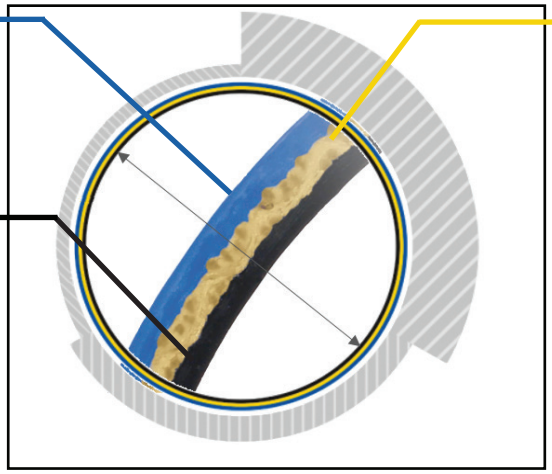
The system consists of a Flexible Kevlar® reinforced liner and specially developed end fittings. Primus Line® is not bonded to the host pipe.

External Layer

- Abrasion-resistant PE
- Protection of The Fabric During Insertion

Internal Layer

- Based on PE or TPU
- NSF/ANSI 61, KTW W 270, AS/NZS 4020:2005



Kevlar®

- Seamless, Woven Aramid Fabric
- Accomodates The Operating Pressure Independently From Host Pipe
- Wall Thickness Of 6mm
- Liner Not Glued To Host Pipe (No steaming or Curing Processes)
- Installed with annulus space

Benefits

Safe & Reliable

- Installation Speeds of Up To 10 Metres Per Minute
- Up to 2,500 Metres Per Pull
- Quick Re-commissioning For Minimal Time Of Service Interruption
- Low Pre-investment For Installers

Highly Flexible

- Installation Through Multiple Bends Of Up to 45°
- Withstands Thermal Expansion of The Host Pipe & Seismic Movement
- Fully Flexible Seamlessly Woven Kevlar Fabric®

Operational Advantage

- Minor Installation Footprint
- Minimum Use Of Equipment
- Decreased Impact On Traffic

Extended Service Life

- 100% Quality Control During The Manufacturing Process & Before Shipping
- No Curing, Steaming Or Adhesion Process
- Independent Of Weather Conditions During Installation
- 50+/- Years Lifetime

Environmentally Friendly

- Small Pits & Reduction of Road Work
- Reduced Use of Machinery
- Decreased Impact on Traffic
- Minimal Disturbance of Daily Life

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Applications

The industry is facing new challenges as a result of damage to steel pipelines caused by internal corrosion. Possible leakages might cause significant environmental damage; they also mean increased costs or even loss of reputation for network operators.

Primus Line® is suitable for the transportation of various liquids in the field of water and holds drinking water approvals in numerous countries.

The ideal flow characteristics caused by an extremely smooth inner coating and optimised systems for high, medium, and low pressure requirements make Primus Line® an economical solution for the rehabilitation of ageing pipelines. Thus, water authorities and network operators benefit from reliable operation and a sustainable investment in their fixed assets.

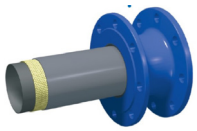
- Potable Water
- Firefighting Water
- Industrial Water
- Sea Water
- Waste Water

Primus Line® Connector With Flange Or Welded End

Primus Line® is suitable for the renovation of oil pipelines due to the medium-specific inner layer, and acts as a corrosion barrier between the transported fluid and host pipe.

The conveyed fluid covers media from the categories such as crude oils, fuel oils, oil slag and other refined products (for detailed information, please request for our Chemical Resistance sheet).

- Gathering Pipelines
- Transmission Lines
- Jetty Pipelines
- Process Water Mains
- Fire Fighting Mains



Primus Line® Connector With Flange Or Welded End

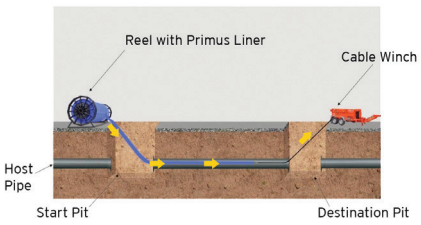
Gaseous media represents a special challenge to trenchless pipeline rehabilitation. However, an inner layer made of permeation reducing plastics and the seamless production of up to 4,500 metres (14,763 feet) of the Primus Line® pipe have made it possible for gas pipelines to also be renovated with Primus Line®. A monitoring pipe with a fitted valve that is affixed to the old pipeline allows the system-specific annular space to be monitored after the renovation work (for detailed information, please request for our Chemical Resistance Sheet).

- Natural Gas
- Core Gas
- Liquid Gas
- Mixed Gas

Primus Line® Connector With Welded End

Installation

1. Shutdown of host pipe, establish construction pit, cut and drain pipe
2. Sectional pipe inspection with a mobile TV camera and subsequent analysis of video recordings
3. Insertion of an auxiliary rope via TV camera
4. Mechanical coarse cleaning of the pipe interior using scraper pigs and pull through pigs
5. Positioning of the Primus Line coiled hose at the start pit and the pulling winch at the destination pit
6. Installation of pulling head, hose guides and feeder cable
7. Insertion of the Primus Line hose (folded or unfolded)
8. Assembly of the connector fixed to the host pipe
9. Running of pressure tests
10. Integration of the renewed pipe in the pipeline network and commissioning
11. Pit closure



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