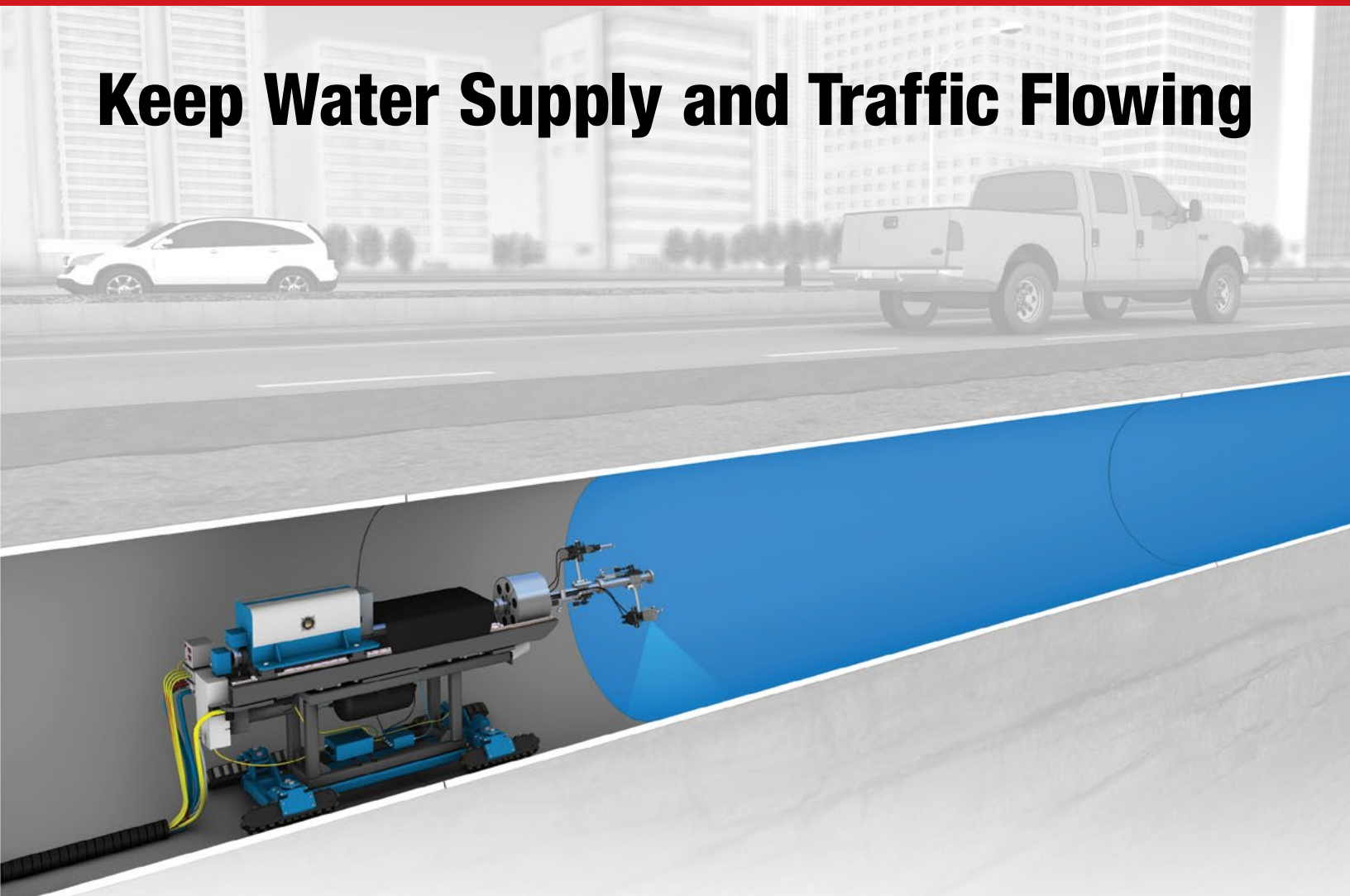


Transmission & Distribution • Water Treatment Plants • Penstocks
Sewer Force Mains • Desalinization

Keep Water Supply and Traffic Flowing



Pipeline Life Extension Specialists

Featuring PipeArmor® Manufactured-in-Place Pipe™

Stop leakages and water losses from any diameter drinking, irrigation or raw water pipeline system without excavation: PipeArmor® structural rehabilitative liners are unmatched in lifespan, economic advantage, installation flexibility and environmental impact.

Reduce water losses:

Cost-effectively improve water system integrity

Whatever the location – dense urban streets, under dams or over mountain passes. Whatever the diameter or bend radius, our robotically constructed PipeArmor® liners are a Manufactured-in-Place Pipe™ that deliver the option to rehabilitate in place critical pressurized water pipeline systems, relieving a significant stress on capital budgets required to support aging pipeline replacement. PipeArmor gives owners the means to significantly extend the service life of more linear feet of pipeline within the same budget, or apply the savings to reduce capital outlays.

Keep traffic flowing – and get longer pipeline life

A major obstacle to arresting leakages from buried unburst pipe is scheduling disruptive construction. We provide the solution. Through adaptable umbilical control, our robotic lining devices are deployed remotely and even make insertions from existing man ways to service our full range of pipe diameter from 8” to 174”. We can also stage from an offset to make pipe entry. This removes the need for excavations of pavement as well as the burdens of additional equipment staged contiguous to point of entry on congested roadways – meaning you can now keep business and vehicle traffic flowing.

Be confident of superior liner performance

In contrast to other liner products, our PipeArmor® self-supporting structural liner is delivered in a single pass vs. multiple passes, eliminating the incidences of inner coat contamination that can result in future disbondment and or ANSI/NSF noncompliance.

Our patented robotic multi-axis and variable trajectory application technology delivers a circumferentially consistent liner thickness despite any irregularities or perforations in the pipe wall. The result is a stable, durable and decades lasting rehabilitated pipeline.

PipeArmor®

A superior material delivered by superior process

Our process delivers a durable and stable liner with a fast return to service. PipeArmor® is an ultra-fast setting resin, with a 4-5 second snap cure. As a result, there is no gravitational slump, thickness inconsistencies or accrual of lining material in the pipe invert, which results with slower cure polyurea and epoxy lining products. This fast cure combined with the feathering of liner material into laterals, eliminates the need for remote lateral reinstatements. As a result, the pipe system ready for decontamination or service (non-potable) in as little as one hour after the lining installation.

Decades of worry-free service life

With a design life well exceeding 75 years, in pipe, subject to actors, PipeArmor delivers a self-standing polymer pipe that will seal over perforations and cracks, then deliver decades of new design use life to existing host pipe systems. A full warranty on the PipeArmor liners, including labor and materials backs every installation.

HIGHLIGHTS – PIPEARMOR® LINING

- Self-supporting structural liners
- Build to AWWA M28 Class III or Class IV
- Rehabilitate 8” to >174” diameter pipelines
- Arrest corrosion / erosion
- Seal over large perforations and cracks
- Abrasion, chemical, temperature resistant
- Highly resilient to transverse shear events
- Inert chemistry with no VOC or endocrine disrupters
- ANSI / NSF 61
- Robotic construction via man way entry; reduced excavations
- Line any grade, horizontal, vertical, and up to 90 degree bends
- Install 0.20 inch to 1.5 inch in single pass
- Unmatched installation labor and material warranty

RETURN TO SERVICE

- Return to service immediately after completion of QC inspection
- Chlorination (potable)
- Reinstate operating pressure

QUALITY CONTROL

- Third party inspection
- Environmental conditions (lining)
- Lining thickness (SSPC-PA2)
- Holidays, voids, and hardness

TERMINATION

- Stainless steel expansion bands installed at all flow facing terminations

ASSESSMENT

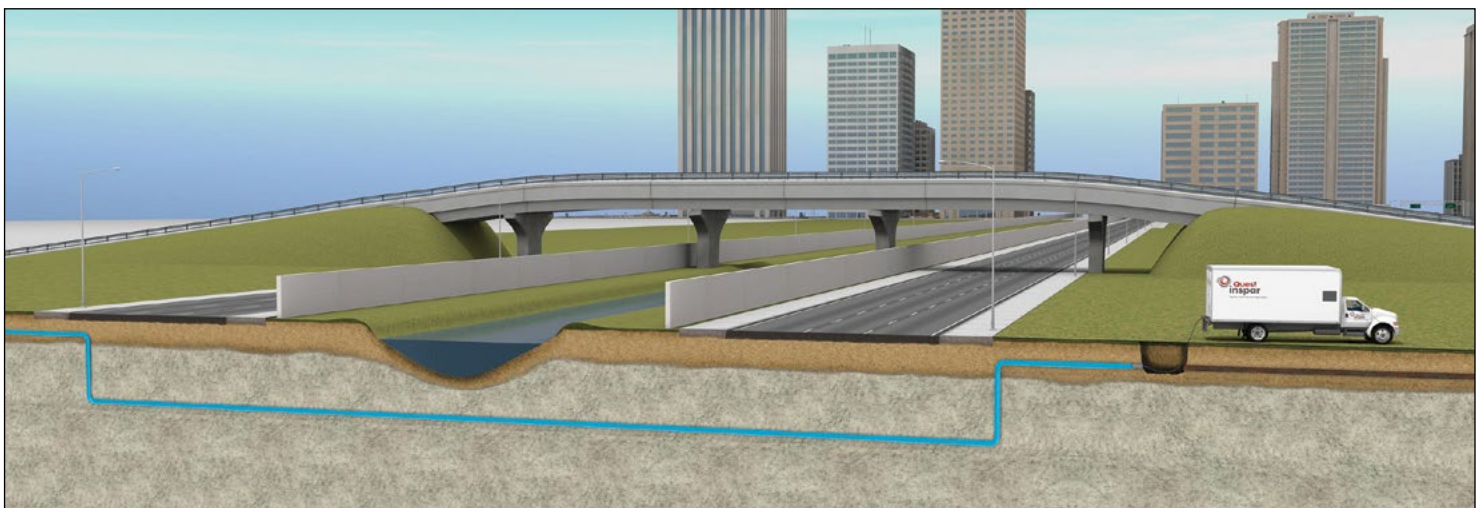
- Host Pipe Specifications and Condition
- Robot Systems Required
- Lining Thickness

PREPARATION

- CCTV Inspection
- Pipe cleaned to SSPC SP2 minimum
- Pipe to dry state for lining

LINING PROCESS

- Robotic application
- Monolithic structural liner built in single pass
- Thickness adjustable to area wall loss



Unmatched Flexibility

The robotic installation of our PipeArmor® Manufactured-in-Place Pipe™ delivers new options to utilities. Whether seeking non-disruptive structural rehabilitation of larger diameters, or for bend configurations of any size.

Robotically installed rehabilitative liners for pressurized pipelines

PipeArmor® solutions are unmatched:

REHABILITATION PROCESS

- Umbilical controlled robotic lining
- From 8 inch up to 174 inch diameters
- All pipe material compositions
- Any directional axis and bend radius up to 90°
- Self-contained rigs, deployment flexibility
- Can manage any topography
- Man way to man way lining process
- No lateral reinstatements necessary
- Turnover to service in as little as one hour

ECONOMIC BENEFITS

- Substantial savings over alternative methods
- Lowest total cost of ownership
- Save cost of excavation and reconstruction
- Lessen impact on community commerce
- Reclaim previously lost water
- Reduce pumping costs
- Reduce cost of chemical treatment
- Lower premiums with improved hydrant flow
- Long warranty protection

ENGINEERED LIFE BENEFITS

- Self-standing polymer pipe
- Add decades of restored design life
- Improve pipe hydraulics
- Reduce turbulation
- Arrest corrosion and erosion
- Stop internal degradation of the host pipe
- No maintenance
- Prevent water main breaks
- Reduced risk of undermined pavement

HEALTH, SAFETY & ENVIRONMENTAL BENEFITS

Installation

- Minimal environmental footprint
- Significantly reduced confined space entry
- Reduced emission (Exhaust from stopped, slowed vehicles or ancillary equipment)
- No VOCs or endocrine disrupters

Water Service

- Improved cleanliness, clarity, color, smell and taste
- Retards growth of coli form bacteria
- Stabilization of chlorine residuals
- Reduced threat to water safety from lead joints



Pipeline Life Extension Specialists

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