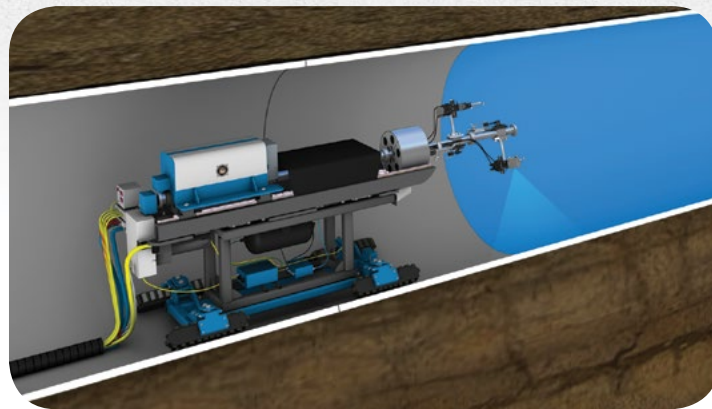


Keep Cooling Water and Power Flowing



Pipeline Life Extension Specialists

Featuring PipeArmor®
Manufactured-in-Place Pipe™

Stop revenue loss from unplanned outages. PipeArmor® structural linings deliver unmatched economic advantage, installation flexibility and rehabilitated lifespan for power station pipeline systems.



**Reduce water losses:
Cost-effectively improve water system integrity**

Whatever the location, under parking lots, through dams, or over mountain passes, we have the solution. Whatever the diameter or bend radius, our robotically constructed PipeArmor® Manufactured-in-Place Pipe™ delivers the option to rehabilitate in place, critical pressurized 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.

Project efficiency – small footprint keeps trades working

A major obstacle to arresting leakages from buried 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 manways to service our full range of pipe diameters, from 8” to >174” – and we can stage from an offset to entry. This removes the need for excavations of pavement as well as the burdens of additional equipment staged contiguous to point of entry in congested environments – meaning you can now keep projects efficient and on schedule.

Be confident of superior liner performance

In contrast to other liner products, our PipeArmor self-supporting structural liner is constructed in pipe 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

PipeArmor is an ultra-fast setting resin with a 4-5 second snap cure. This means no gravitational slump, thickness inconsistencies or accrual of lining material in the pipe invert, which results with slower cure polyurea and epoxy lining products. Our patented application process removes the need for remote lateral reinstatements. The result is the rehabilitated pipe system can be ready for (non-potable) service in as little as one hour after the lining process is completed.

Decades of service lifespan. Protected by long warranty

PipeArmor delivers a self-standing polymer pipe with a design life exceeding 75 years (in-pipe subject to actors). On installation, it will seal over large perforations, cracks, and thin wall areas. It delivers decades of new design use life to existing host pipe systems. A comprehensive labor and material warranty backs every installation.

HIGHLIGHTS – PIPEARMOR® LINING

- Self-supporting structural liners
- Robotic construction via small access entry; no excavations
- Line carbon and stainless steel, ductile iron, RCCP, VCP, FRPE or HDPE
- 8” to >174” diameters
- Monolithic build: .020” in. to >3” in a single pass
- Any directional axis, all geometries
- Arrest corrosion / erosion
- Seal over large perforations and cracks
- Abrasion, chemical, temperature resistant
- Highly resilient to transverse shear events
- Combined labor and material warranty

Return to Service

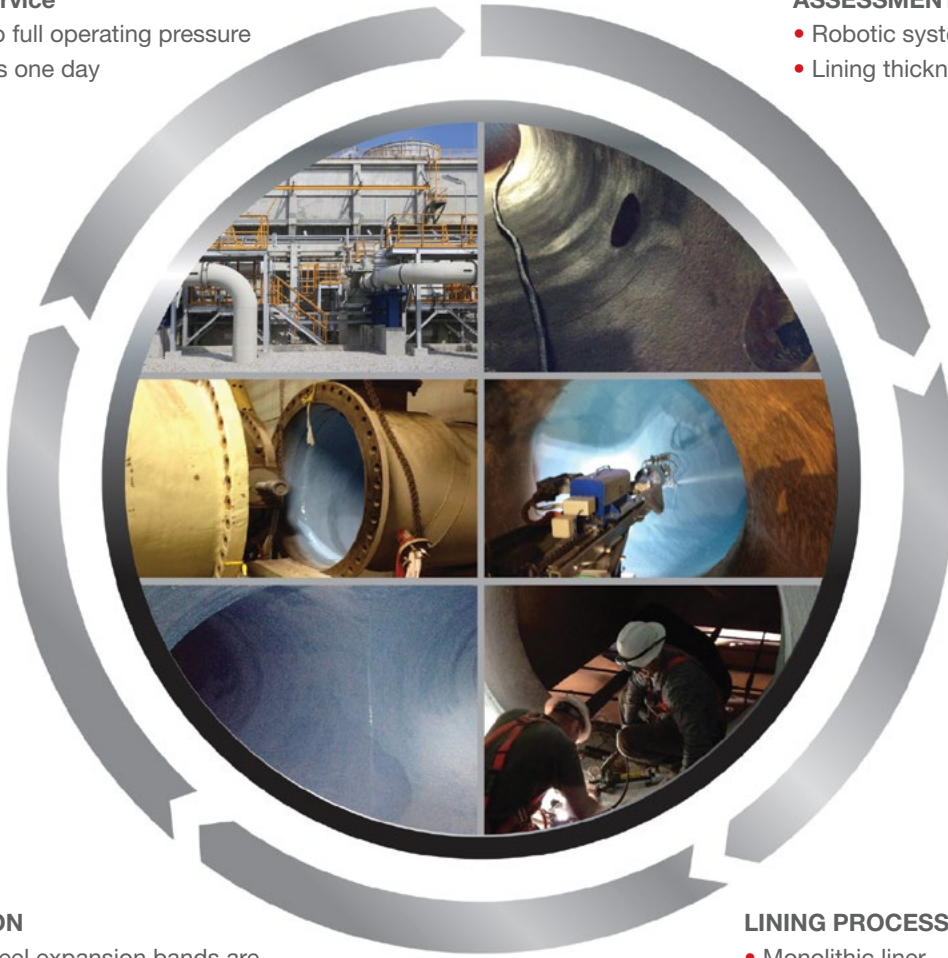
- Recharge to full operating pressure in as little as one day

ASSESSMENT

- Robotic systems
- Lining thickness

QUALITY CONTROL

- Surface prep monitors: environmental conditions, surface cleanliness and surface profile
- Lining monitors: environmental conditions, thickness, holidays and surface hardness (cure)



PREPARATION

- CCTV inspection
- Surface prep – SSPC-SP3

TERMINATION

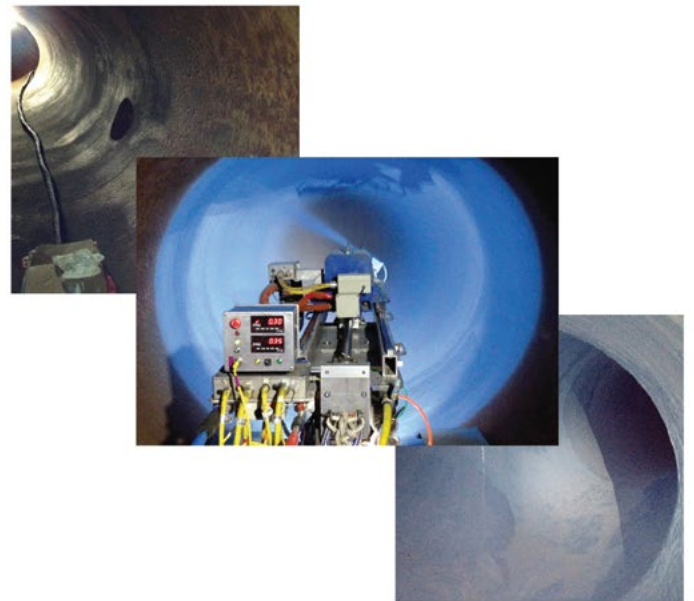
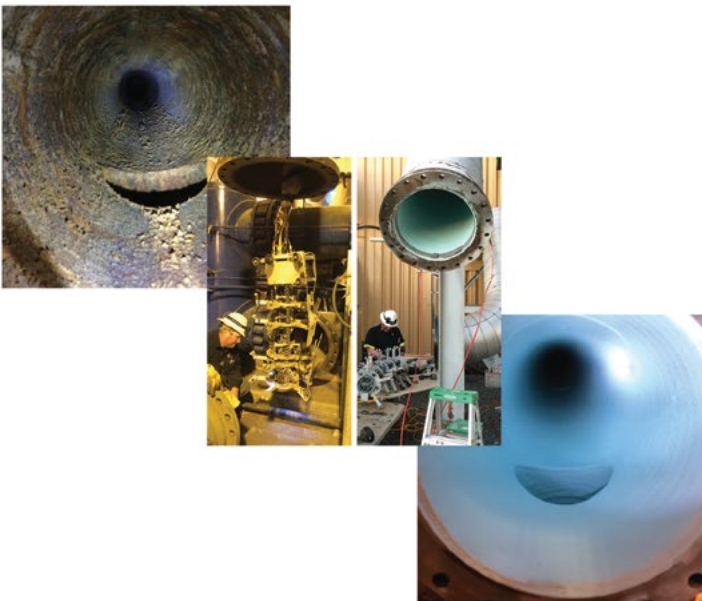
- Stainless steel expansion bands are installed at all flow facing terminations

LINING PROCESS

- Monolithic liner
- Thickness adjustable to area wall loss

SMALL DIAMETER

LARGE DIAMETER



Our small and large diameter lining robots' built-in flexibility supports in-place rehabilitation of any size or configuration of pipe system – from elevated and vertical piping to buried large diameter main and ACW pipelines.

PipeArmor® solutions are unmatched:

REHABILITATION PROCESS

- Umbilical controlled robotic lining
- 8" to >174" diameters
- Any directional axis and bend radius up to 90°
- Self-contained rigs, deployment flexibility
- Can manage any topography
- Access-to-access manway lining process
- No lateral reinstatements necessary
- Turnover to service in as little as one hour after lining

ECONOMIC BENEFITS

- Significantly improved pipe hydraulics
- Reduced pumping costs
- Substantial savings over alternative methods
- Lowest total cost of ownership
- Save cost of excavation and reconstruction
- Reclaim previously lost water
- Reduced cost of chemical treatment
- 15 year material warranty

ENGINEERED LIFE BENEFITS

- Eliminates future tuberculation resulting in increased hydraulic capacity
- High chemical resistance to a wide variety of water/pH neutralization treatments
- Extremely resistant to elevated fluid temperatures
- Self-standing polymer pipe
- Restore decades of design life to existing pipe
- Arrest corrosion and erosion
- Stop internal degradation of the host pipe
- No maintenance
- Reduced risk of undermined concrete floors and pavement

HEALTH, SAFETY & ENVIRONMENTAL BENEFITS

- Greatly reduced environmental footprint
- Significantly reduced confined space entry
- No/minimal VOCs and no endocrine disrupters



Pipeline Life Extension Specialists

QuestInspar.com

Water Supply • Power • Energy • Mining • More