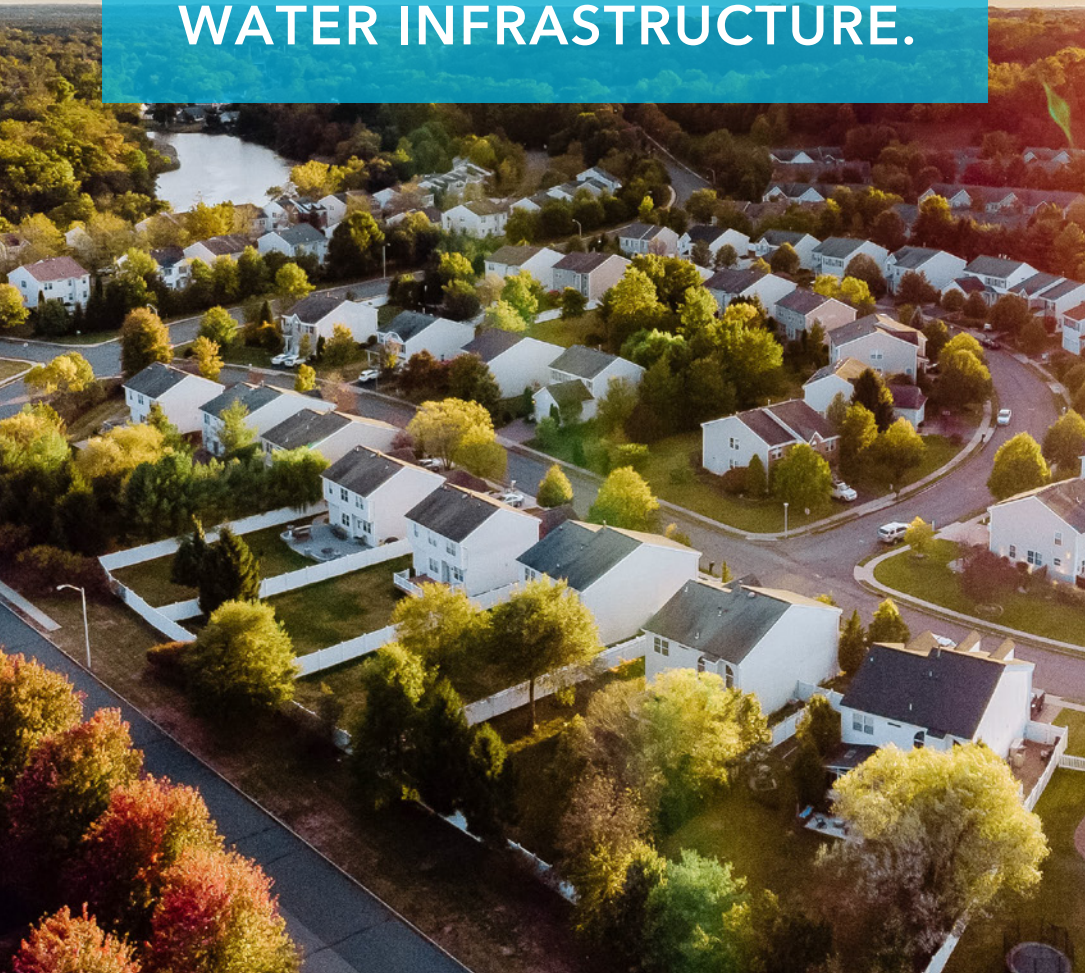


ALTRA10x

The Next Generation of the Formerly Known Aqua-Pipe®

THE FIELD-PROVEN
SOLUTION FOR **RESILIENT**
WATER INFRASTRUCTURE.



DELIVERING RESILIENCE

Our next-generation technology protects and renews your current water infrastructure from the inside with minimal disruption to your communities.

BENEFITS

1,500 miles / 2,400 km of water technology installed so far has proven to:

YEARS OF SERVICE LIFE ADDED TO WATER DISTRIBUTION SYSTEMS

- Structural, class IV, high resiliency against severe soil movements like frost heave, flooding, landslides, subsidence, nearby excavations, and earthquakes;
- Increased pressure and flow capacity;
- Added corrosion resistance;
- Regained full structural integrity;
- 100 year life expectancy.

ENVIRONMENTAL BENEFITS

- Elimination of risk of future water main breaks;
- Reduction of 55M m³ of drinking water leaks;
- Most environmentally friendly option with less GHG.

INSTALLATION BENEFITS

- Enable work in difficult to access, ecologically sensitive or high density area (e.g., highways, etc.);
- Quick installation with minimal disruption for the community;
- Little excavation and noise leading to fewer complains from neighboring residents;
- No disturbance to adjacent infrastructures;
- Line through bends and future service taps easily performed;
- No future maintenance required;
- Replacing lead services can be done simultaneously.

ECONOMIC CONSIDERATIONS

- Most cost effective water main infrastructure replacement methods;
- Reduction in treatment and pumping costs.

TEAM OF WATER EXPERTS

PUTTING OUR EXPERIENCE TO WORK FOR YOU

We have a proven track record of successful installation across North America, and we have developed deep expertise and advanced the state of the art with our trenchless technologies.



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OUR FIELD-PROVEN EXPERTISE

- Acton (MA)
- Baltimore County (MD)
- Boston (MA)
- Burlington (VT)
- Cleveland (OH),
- Detroit (MI)
- Foxborough (MA)
- Francis Scott Key Bridge (MDTA)
- Harrisburg (PA)
- Jersey City (NJ)
- Livingston (NJ)
- Los Angeles (CA)
- Montreal (QC)
- Monroe County (NY)
- Naperville (IL)
- New York City (NY)
- North Penn Water (PA)
- Omaha (NE)
- Perkasi (PA)
- The Port Authority of NYNJ (Holland Tunnel)
- Providence (RI)
- Suez Water (NJ)
- Toronto (ON)
- Washington (DC)
- Webster (MA)
- Woodbridge (NJ)

and many more.

TECHNICAL SPECIFICATIONS

DIAMETER

ALTRA 10X : 4-12 inches
(100-300 mm)

HAZEN-WILLIAMS COEFFICIENT

Greater than 120

INSTALLATION LENGTH

Up to 1,000 feet (300 m)
between access pits

LINER LIFESPAN

More than 100 year life expectancy

INSTALLATION METHOD

Pulled-in-Place Pipe (PIPP)

CLASS IV STAND-ALONE STRUCTURAL LINER

- Regained pressure and flow capacity
- Corrosion resistance
- Regained structural capacity
- Proven not to break upon hostpipe failure.

OPERATING PRESSURE

Tested at greater than 150 psi

ALTRA10X LINER

Circular woven textile yarn jackets
produced in our manufacturing
facility and proprietary
thermosetting resin

THE ALTRA10X STRUCTURAL LINERS OFFER
MANY ADVANTAGES, SUCH AS WHEN:

- Complete access to driveways is a must and the closing of streets to residents as well as businesses is out of the question;
- In well populated areas where water main breaks and rusty water plague the system;
- The water main runs underneath a bridge or overpass rendering access to the main impossible.

BASICS INSTALLATION STEPS

01. TEMPORARY BYPASS

Install temporary bypass
through water meters or
garden spigots

07. LINER FORMATION

Form the liner by sending
swabs from one end to the
other

02. EXCAVATION

Excavate access pits at each
end of the pipe section

08. CURING

Circulate hot water for curing

03. CLEANING

Clean pipe with metal chain
reamer

09. PRESSURE TEST

Perform hydrostatic pressure
test

04. INSPECTION

Inspect pipe through
closed-circuit television
(CCTV) inspection to map the
service connections

10. REINSTATE SERVICE

Reinstate service
connections from inside the
pipe by drilling using
specialized robotic
equipment

05. INSERTION

Insert plug in every service
connection from inside the
pipe using specialized robotic
equipment

11. DISINFECTION AND RECONNECTION

Disinfect the pipe, test, and
reconnect water distribution
system

06. INJECTION

Inject epoxy into the liner
on-site and pull into place

12. RESTORATION

Remove temporary bypass
and restore site



Clean
water main



Insert ALTRA



Robotically
reinstating services

CERTIFICATIONS

- Certified by NSF and UL to NSF/ANSI Standard 61
- Mechanical properties exceed ASTM F1216 and ASTM F1743 Standards
- Designated Class IV fully structural liner as per the AWWA M28 manual
- Meets the Solar Impulse Standards on Sustainability & Profitability
- Tested in compliance with Australian/New Zealand Standard 4020
- Standard BNQ 3660-950 approved product



ALTRA
PROVEN WATER TECHNOLOGY

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