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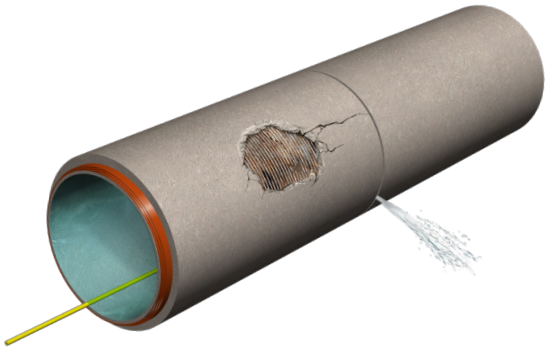
Data Sheet
Pipeline monitoring

SoundPrint® AFO

Continuous threat monitoring for critical pipelines



SoundPrint® AFO provides pipeline owners with near-real-time data to understand pipe condition, make confident asset management decisions, and prevent catastrophic failures.

SoundPrint AFO is an established solution for safeguarding prestressed concrete pipelines. This technology delivers comprehensive data on pipeline condition by continuously monitoring for wire breaks, leaks, and other threats. Precise data and actionable alerts enable utilities to perform targeted maintenance at the right time, minimizing risk, optimizing pipeline life, and reducing costs.

Features and benefits

- Continuously monitor critical pipelines for leaks and structural issues
- Receive threat alerts in near real time
- Visualize data on PipeView, a secure, map-based web portal
- Install SoundPrint AFO into a live pipeline, without disrupting service
- Determine asset condition and degradation rate with the highest resolution data
- Leverage a dedicated support team and expert analysts

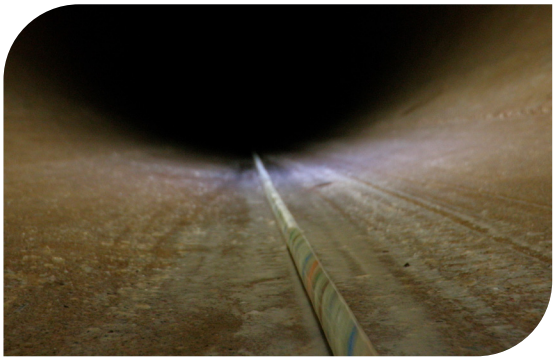
Actionable information

SoundPrint AFO reliably detects and locates individual wire breaks and leaks as small as 5 gallons per minute in near real time. Wire breaks are the primary indicator of deterioration in prestressed concrete pipelines, so early detection is key to preventing failures and operational disruptions. Leak detection is an effective complement that helps utilities address additional failure modes, such as leaking features, damage from third parties, and issues at the pipe joint. SoundPrint AFO can also detect other acoustic events of concern, including construction noise and directional drilling near the pipeline.

Data analysis and accessibility

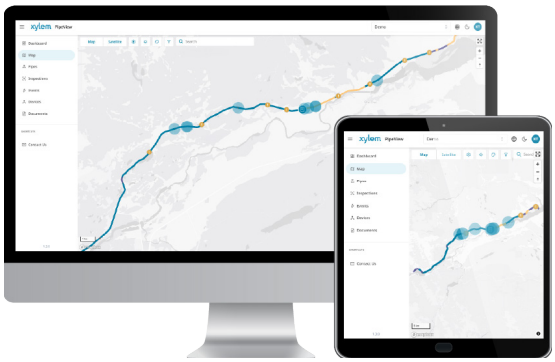
Supported by AI, Xylem analysts review monitoring data and convey actionable information to clients through alerts and a secure online portal called PipeView. Data is available on any internet-connected device and integrates seamlessly with utility management systems. PipeView provides access to a map-based dashboard, individual pipe condition history, structural performance curves, inspection data, and other critical information.

High-resolution monitoring is an established best practice for determining an asset's rate of degradation and forecasting future maintenance costs with certainty. These insights inform capital planning and guide a defensible, long-term pipeline management strategy.



Acoustic fiber optic cable listens continuously for threats

Data acquisition unit securely collects and sends data



PipeView provides access to pipeline data

System components

SoundPrint AFO includes an acoustic fiber optic cable that serves as a continuous sensor, capable of monitoring long distances for decades with minimal maintenance. Our highly trained technicians can install the cable inside a pipeline under live or dewatered conditions. The cable can be deployed around most valves, bends, and outlets. A data acquisition unit collects data from the cable and sends the information to the cloud over a secure connection.

Service excellence

For two decades, Xylem has partnered with utilities to design and install SoundPrint AFO systems, deliver expert data analysis, and provide ongoing system maintenance and support. Reach out today to learn more.

System specifications

Product	Potable water, raw water, wastewater
Pipeline material	Prestressed concrete cylinder pipe* **leak detection available for other pipe materials*
Wire break detection	Individual wire breaks within 10 ft (3 m)
Leak detection	Leaks 5 GPM and above to the nearest pipe stick
System components	Data acquisition system (DAQ), entry/exit detail hardware, and acoustic fiber optic (AFO) cable
Maximum system length per DAQ	Single DAQ: 12 mi (20 km) Dual DAQ: 25 mi (40 km)
DAQ power	Two independent 15 amp, 120v 60Hz circuits (230/240V models available for international installations)
DAQ communications	Internal cellular modem standard, minimum 5 Mb/s upload/download

System installation

SoundPrint AFO system designs are tailored to pipeline requirements.

Methods	Live, depressurized, and dewatered installation options
Pipeline diameter	Live: 16 in (400 mm) and above Dewatered: 36 in (900 mm) and above
Maximum pressure	220 psi (1,517 KPa)
Flow velocity	1 – 10 ft/s (0.3 – 3 m/s), no open channel flow
Connection size	3 in (75 mm), with options available down to 1 in (25 mm)
Pipeline preparation	Live: all sideline valves closed Dewatered: line fully dewatered and ventilated

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Let's Solve Water