



**“An ounce of prevention is worth a pound of cure” – Benjamin Franklin**

Our patent pending leak prevention system monitors your pipe or fitting to warn you before it leaks.

### **Prevention vs. Detection**

With a **leak detection** system the leak has happened. You now will incur cleanup costs. Your replacement materials will be manufactured at a rush rate and people are in harm's way as a failure is unpredictable. There may be other costs like unplanned downtime or reduced recovery rates.

With our **leak prevention** system the wear parts maximum useful life is identified. The failed pieces can be re-lined or replacement materials are manufactured at regular rates, scheduled maintenance can be performed and the workers safety is never at risk.



## How does the leak prevention system work with rubber lining?

In a rubber lined pipe or fitting the lining has a conductive layer built into the rubber. Once the liner is worn to the conductive layer the fluid within the piping completes an electrical circuit. You will get a notification that the rubber liner is past its useful life, re-lining is now suggested.

## How does the leak prevention system work with bare steel pipe?

We have developed a method of using our sensor in bare pipe or hardened pipe.

The section below demonstrates how it would work in sand-fill hardened steel pipe. A groove is cut in the wear pipe. The material left is the amount of steel you would allow this line to wear to. In a case hardened application the amount of hardened steel is approx 0.120" thick. The remaining steel wear out very quickly as the case hardening does not extend throughout the steel. So once the 0.120" material has worn out anywhere within its circumference it will allow the transport material to enter the cavity and the sensor will indicate the pipe has reached the end of its useful life, before a leak occurs. The pipe integrity remains as the ring re-enforces the pre-weakened area. We recommend one sensor spool for every straight run.



### **Can this sensor be used on elbows?**

Yes in fact we can use a similar configuration on elbows. The extrados (outside radius) of the elbow will get an exterior re-pad which is perimeter seal welded and the sensor will then be installed on the re-pad. Once the elbow wears through the extrados the transport fluid will allow the sensor to signal that the elbow has expired but no leak or safety issue will occur. A replacement elbow can now be planned. An unexpected shutdown of the plant has been avoided.

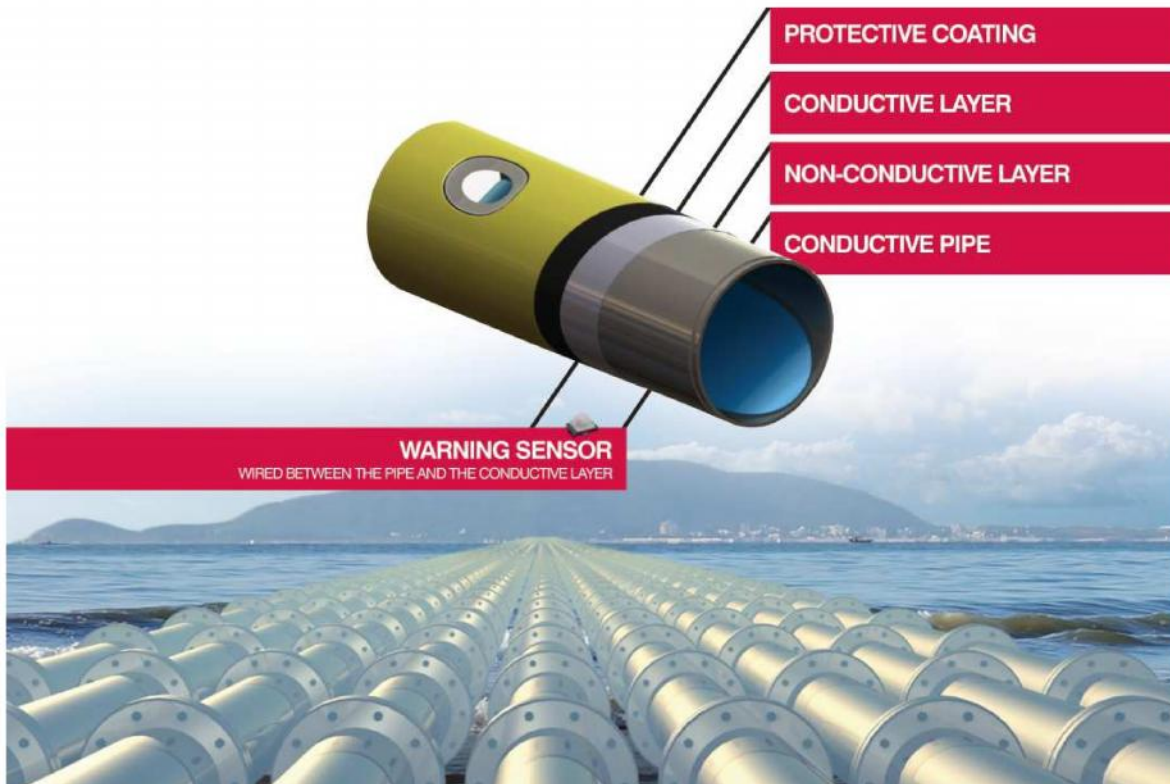
### **How does your leak prevention system work with paint coatings?**

Like the rubber sheet a conductive layer is embedded in the paint. If the coating gets damaged, humidity will bridge the coatings and signal a failure in the coating. If no humidity occurs then no corrosion risk is present. This application is good for oil transport lines and or natural gas lines in environmentally sensitive or in city piping corridors, where the failures occur from the exterior to the interior.



# LEAK PREVENTION

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## What methods of notifications can it use?

Once the material has lost its useful life it will visually indicate the failure in the liner and or the eventual failure of the spool. It can also be tied to your existing monitoring systems. The sensor has an active RFID (radio frequency identification) signal which can reach a reader at a distance of up to 1 mile line of site.

## Is the sensor reusable?

Yes, once the replacement pipe or fitting arrives, you can reinstall the sensor and monitor the new part with it.



## **What else do I need to know about the sensor?**

It has on-board heuristics algorithms. It verifies, at three different 1 minute intervals, for on-going failures before beginning its alert ensuring no false positives.

It has magnetic reset switches for use in the field.

It is battery operated with a battery life of approx 2-5 years. Signals at low battery levels.

It has an RF range of 1 mile line of site.

The sensor is waterproof.

The clear dome is a thick polycarbonate material, mine proof.

It has Radio Frequency and non Radio Frequency mode depending on the application.

The same sensor is usable for lined and un-lined pipe.

The sensor is equipped with a locking nut to ensure a tight seal.

The sensor can be used with most common thicknesses of pipe.

## **What is the payback and how much is the cost?**

Sensors are available by providing an initial deposit and a small monthly fee. We have developed a simple tool to determine the return on investment for any pipe, spool or vessel to determine if leak prevention is a good investment for that part. Contact one of our distributors for a demonstration.

## **Recommended Applications**

- Any susceptible high wear critical Pipe and Fittings
- Sand-fill and Paste-fill piping
- Hardened pipe lines
- Tanks
- Oil Pipelines
- Natural Gas Pipelines
- Pump Boxes
- Rail Cars



## Case Studies

### Case Study 1 # Underground Sand fill Line

In 2015 Vale Coleman Mine had a sand-fill tee rupture and fill a stope to within a foot of the ceiling. The previous leak detection system installed had two wires which come from the ceiling and hang close to the ground. This is meant to signal the sand-fill operator to shut down the flow when a rupture occurs. On that day the wires were off to the side and did not signal the breach. The sand-fill mess which ensued took two people three weeks to remove using excavators and pneumatic hammers.

Coleman now has a leak prevention unit on their tees.



## Case Study 2 Nickel Concentrator

In 2015 a nickel mill in Sudbury, Ontario installed a leak prevention system on a pump intake on one of their primary circuits. After 8 months of service, the unit indicated a lining failure. In this case, the mill maintenance people chose to run the fitting until it leaked for information purposes. Three week later, the fitting failed. A discussion with the company indicated that although it is hard to truly quantify the cost of an unscheduled stoppage of the system they could easily say it was more than the actual value of the fitting that failed. They also commented that reducing unscheduled maintenance was a high priority and they are installing more units on their piping as they are replaced.

