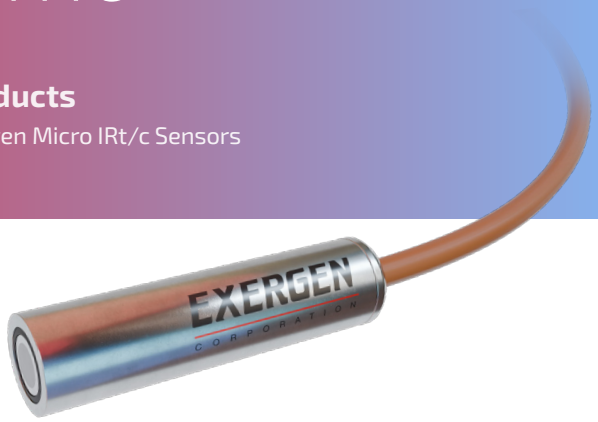
Case Study

Robotic UV-Curing Solution Reduces Pipeline Repair Time

Company
Respected international leader in industrial printing solutions

Industry
Sewer Infrastructure and Pipeline Rehabilitation

Products
Exergen Micro IRt/c Sensors



ProKASRO is revolutionizing sewer repair with robotic systems that operate entirely underground. No more disruptive, expensive excavation, instead an innovative system that achieves results in a fraction of the time and cost. As well as milling, grinding, filling, molding and injection operations, ProKASRO also conducts UV-curing repairs on underground pipes. Exergen's precision IRt/c sensors help ensure accurate UV curing for fast, clean, and tightly-controlled repairs.

Challenges

Traditional sewer pipe repair methods are time-consuming and disruptive. Excavation requires heavy equipment, traffic rerouting and days of manual labor. For years this has been a challenge for local governments and municipalities, since it is never the right time to disrupt the daily life of towns and cities. ProKASRO needed a way to perform precision repairs without digging, and a method of remotely monitoring the UV curing process.

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Solutions

ProKASRO's trenchless sewer rehabilitation robots use Exergen's Micro IRt/c sensors to precisely control UV curing temperatures. The sensors' non-contact design, durability, and resistance to UV light enable accurate temperature monitoring without maintenance or recalibration. This ensures the resin hardens correctly, preventing leaks and optimizing repair quality. The highly stable and self-powered IRt/c sensors help operators reliably time the curing process, improving efficiency, safeguarding pipe integrity, and dramatically reducing repair costs and environmental impact.

Benefits

- Non-contact operation accurately detects surface temperature.
- Instant response time - real-time thermal readings enable immediate decision-making.
- Highly accurate - resolution of ± 0.0001°C even in harsh, dirty, or low-visibility environments like sewers.
- Compact and durable - small form factor integrates easily into tight spaces, and rugged build withstands vibration, moisture, and contamination.

Results

In a project in Brno, Czech Republic, ProKASRO successfully rehabilitated three damaged manholes using its robotic UV system. Exergen sensors helped monitor curing in real time, ensuring accurate, consistent and reliable results. The integration of UV curing with Exergen IRt/c sensors enabled ProKASRO to deliver top-tier repair quality, safely and efficiently. Instead of excavation and complete manhole renewal, this approach delivered a cost-effective and environment-friendly alternative. The entire process took just two hours, where a traditional approach would have taken days.

Conclusion

ProKASRO's partnership with Exergen marks a major step forward in pipeline rehabilitation. With robots handling the physical work and Exergen sensors ensuring thermal precision, the result is a smarter, cleaner, and faster approach to infrastructure repair. Cities benefit from minimized disruption and downtime, reduced costs, and improved environmental outcomes, thanks in large part to the reliable temperature monitoring inside the pipe.

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USA
400 Pleasant Street
Watertown
02472 MA
cleverIR-USA@cleverir.com
+1 617 649 7597

cleverir.com

Europe
Pastoor Clercxstraat 26
5465 RH Veghel
The Netherlands
office@cleverir.com
+31 413 376 599