VeriCure® BY VORTEX

CIPP Liner Curing Monitoring System

US patents: US 8,162,535 B2 and US 13,403,393

### VERICURE® CIPP CURING MONITORING SYSTEM

VeriCure® is a breakthrough curing monitoring system (CMS), built around Fiber-Optic Distributed Temperature Sensing (DTS) technology, designed to improve the CIPP curing process. Its ability to continuously monitor the temperature during the liner installation helps confirm a more complete cure throughout the length of the host pipe. The result is a fully cured, leak-free pipe, rehabilitated with confidence and verified with data. By using VeriCure, installers are able to address potential concerns in real-time.

A SIMPLE SOLUTION TO A COMPLEX PROBLEM

Easy to use, the VeriCure optical fiber cable runs along the invert of the host pipe (or attached to the crown in pipe 60 in. or greater). Once the CIPP liner has been inverted and inflated inside the pipe, the curing process is initiated. With the optical fiber cable connected to the CMS control unit, the VeriCure software will continuously record the temperature profile along the entire length of the liner. Regardless of the existing flow, VeriCure can provide highly accurate and localized temperature data, increasing the likelihood of a thoroughly cured liner.

The VeriCure Advantage

- Optical fiber monitors temperature along the entire length of the CIPP liner
- VeriCure software verifies the cure and installation
- Identifies potential issues in real-time
- Achieve full cure in less time
- Reduce labor, equipment, and fuel cost
- Comprehensive real-time and historical data
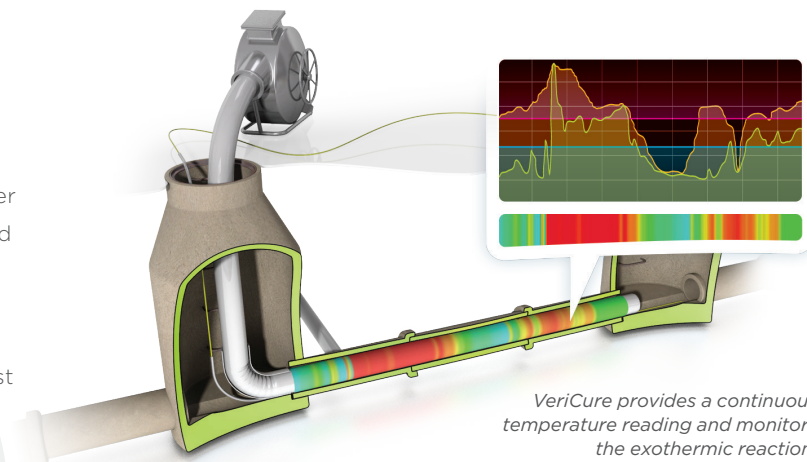
VeriCure provides a continuous temperature reading and monitors the exothermic reaction.

Cure With Confidence

Using VeriCure® with the CIPP lining process is simple while improving the quality and completeness of the installation.

1. Feed the fiber cable into the invert of the pipe
2. Turn on Control Unit prior to inversion and inflation of the liner
3. Enter project parameters into VeriCure software
4. Insert and then invert CIPP liner into pipe
5. Start recording and begin curing
6. Monitor throughout installation and run report for customer at completion

VeriCure software is tailored for CIPP installation professionals. Real-time data viewing allows you to monitor and control the cure for maximum quality and efficiency. VeriCure software also ensures that each zone has met and maintained the proper cure temperature while also monitoring cool down. The final data is summarized in a gradient chart to show temperature change over time.

IMPROVED QUALITY CONTROL, ENVIRONMENTALLY FRIENDLY

VeriCure reduces the risk of lifts, delamination, over-tensioning, and environmental contamination. The system's ability to constantly monitor temperature conditions results in a thoroughly cured, data validated installation while eliminating costs associated with over-cooking the liner. Not only does this save time, but it also lowers construction site emissions.

PORTABLE VERICURE CONTROL UNIT

Designed for durability and portability, the VeriCure Control System is housed in an industrial-strength, protective pelican case for use in the field and on the job. Each system contains the following:

- **DTS measuring instrument**
- **VeriCure software package**
- **Fiberoptic sensor cable connector**
- **LAN socket**
- **Energy supply socket**

OPTICAL FIBER CABLE
**Choose from two options**

VeriCure FlatTemp
VeriCure FlatTemp optical fiber cable features a rectangular profile and contains GFK elements and aramid fibers. FlatTemp is perfect for short segments or pipe runs of 1,000 ft. or more.

- **Available in 6,234 ft. (1900 m) spools**

VeriCure RoundTemp
VeriCure RoundTemp cable is an armored, ultra-bendable optical fiber and exhibits exceptional crush resistance and bending radius (macrobending) performance, making it well-suited for pipelines with multiple bends.

- **Available in spools: 350 ft. (106.7m), 500 ft. (152.4m), 600 ft. (182.9m), 700 ft. (213.4m) and 800 ft. (243.8m)**
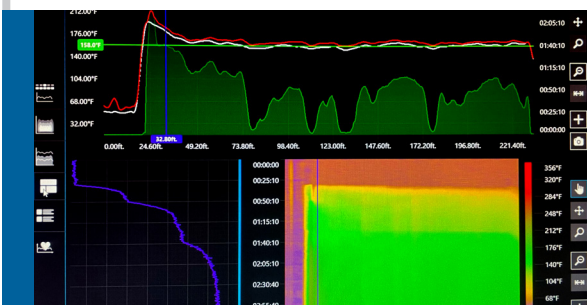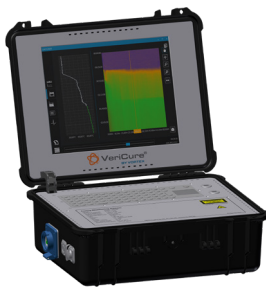
REPORTS & ANALYTICS

VeriCure's powerful real-time reporting and analytics allow you to view detailed graphs to monitor temperature throughout the entire length of the pipe for both steam and hot water curing applications. These reports also provide validation data detailing the completeness of the cure.