



Sustainability Performance Quality and Trust

3M™ Water Pipelines

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Veolia, Prague, Solves Water Quality Issues with their 3rd Scotchkote Liner 2400 Project

In the past, some residents of the Czech Republic City of Prague faced repeated water quality issues. The issues were caused by corrosion of circa 1960's and 70's cast iron pipe exacerbated by their location on a dead end street.

Veolia, Prague, the water company serving the affected residents, addressed the water quality issues by flushing the pipes several times a year. However, the problems persisted. When Veolia turned to 3M for assistance, it was the third time they chose to use 3M™ Scotchkote™ Pipe Renewal Liner 2400 to solve issues with their pipes.

The first time was in June, 2013. Veolia needed to address water quality issues, as well as some structural issues with the pipes. Scotchkote Liner 2400 can provide corrosion and tuberculation protection, helping prevent “brown” water quality issues. It can also provide structural enhancement to pipes with cracks, pin holes or corrosion pitting. Veolia lined approximately 4,265 feet (1,300 meters) of both 6 and 8 inch (150 and 200 millimeter) diameter ferrous pipes. The initial program also included a successful series of on site demonstration linings for representatives from Veolia and Prague Water.

The second project was in October, 2013. Scotchkote Liner 2400's trenchless spin cast method was used to line another 3,280 feet (1,000 meters) of potable water pipe.

After two successful experiences, the company had confidence in the product's performance.



On site demonstration linings – Prague, June 12, 2013

For Veolia, Prague, using Scotchkote Liner 2400 on this project had two major advantages. First, the entire project was done in just 15 days. The 7,650 feet (2,331 meters) of pipe were divided into three phases of five pipe lengths. Each phase was excavated, cleaned, lined and disinfected within five days. Each lined length was returned to service within the same day.

The second advantage was the substantial cost savings from avoiding bypass piping. Instead, potable water was supplied to residents using water tanks.

The end result was the cost effective resolution of the ongoing water quality issues. According to Veolia, Prague's technical manager, "Just after returning the water service, lab tests of the water quality were performed. The results were excellent, above our expectations and to residents' full satisfaction. This was our third project with Scotchkote Liner 2400, and we plan on doing more in the future."

3M Clarifies the Impact of AWWA M28 Changes Regarding Scotchkote Liner 2400

In January of this year, the American Water Works Association (AWWA) released the 3rd edition of its M28 Rehabilitation of Water Mains (AWWA M28).

Changes in the operations manual pertain to all spray-in-place liners, including Scotchkote Liner 2400. These changes included the following from Chapter 6:

"To meet AWWA Class IV structural criteria, polymeric material must have the ability to essentially replace the host pipe in the event of a structural failure, and continue to perform on a long-term basis. Should the host pipe fracture, a Class IV spray-applied lining must separate from the host pipe much as Class III materials but have sufficient structural strength to function as an independent pipe under load and full working pressures. At the time of publication, there are no conclusive tests that demonstrate this ability for a commercially available spray applied lining."

To clarify, Scotchkote Liner 2400 is not designed to separate from the host pipe, nor is it designed to function as an independent pipe in the event of a host pipe failure. Scotchkote Liner 2400 is designed to withstand corrosion and internal pressure fluctuations, per our "3M™ Scotchkote™ Pipe Renewal Liner 2400 Design and Installation Guide" (Design and Installation Guide - available upon request.) Although the structural capabilities of Scotchkote Liner 2400 have not changed, 3M no longer claims that the product is capable of meeting the definition of an AWWA M28 Class IV liner, given the revised definition.



Veolia, Prague applied 3M's trenchless pipe liner, Scotchkote Liner 2400, to resolve water quality issues in a 3rd project.

Pipe Rehabilitation with Scotchkote Liner 2400

90%
less road
construction

Eliminate up to 90% of the excavation, fill and repaving associated with full pipe replacement.

75%
smaller
carbon footprint

Reduce installed material carbon footprint by up to 75% compared to typical replacement pipe.*

30%
lower
project costs

Eliminate bypass piping in some cases – and reduce total project costs by as much as 30%.

* Greenhouse gas inventory available upon request from 3M.

Scotchkote Liner 2400 applications can be designed to:

- Seal pre-existing holes (up to 6 mm) and gaps (up to 5 mm) in the host pipe
- Maintain internal pressure of the host pipe
- Help support external loads of soil weight and HS20 truck loading
- Resist external hydrostatic pressure due to ground water
- Resist internal negative pressure during transient events
- Work on ferrous, AC, or PVC pipes (specific conditions must be met)
- Provide a solution for partially deteriorated and some fully deteriorated pipe scenarios*

We believe this redefinition in the AWWA M28 does not change the basic value provided by Scotchkote 2400. It continues to provide corrosion and tuberculation protection and semi-structural enhancement to water systems around the world. The trenchless application process, combined with the quick cure time, means sections can often be cleaned, lined and returned to service in a single day.

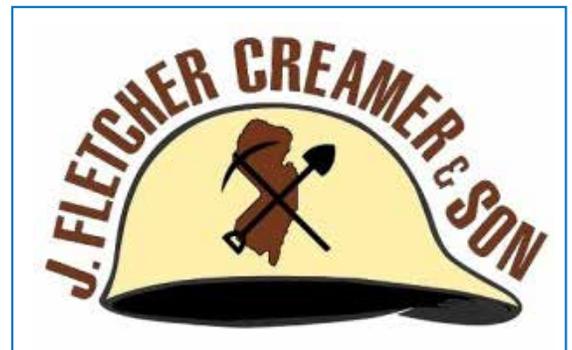
We at 3M look forward to discussing any questions or potential projects you may have.

Please contact us at 1-888-745-4350 or 3mwater@mmm.com. A full description of the product, including a product overview, data sheet, an application overview and the MSDS can be found at www.3m.com/water/renew.

3M Names J. Fletcher Creamer & Son Latest Authorized Scotchkote Liner 2400 Applicator

As of July 2014, J. Fletcher Creamer & Son Inc. (Creamer) completed all requirements to qualify as an Authorized Applicator of 3M™ Scotchkote™ Pipe Renewal Liner 2400

Scotchkote Liner 2400 is applied only by authorized applicators, like the Creamer Organization. This program helps to ensure consistency in procedures, product application and product performance.



“J. Fletcher Creamer & Son, Inc. is well qualified to be an Authorized Applicator,” according to 3M EMD Water Infrastructure business director, Fred Schiller. “As a diversified contractor, they maintain a position as one of the top 400 contractors in the United States. They are experienced in applying a number of trenchless technologies.”

A trenchless solution for lining existing potable water pipes in situ, Scotchkote Liner 2400 is applied using a spin cast process that is done in sections, minimizing the excavation, fill, and repaving costs and the disruptions to traffic, businesses and homes associated with pipe replacement.

*3M™ Scotchkote™ Pipe Renewal Liner 2400 specification and performance are based on a number of factors that may vary, including pipe operating requirements, pipe condition, pipe diameter, bury depth, target design life, safety design factor and host pipe material substrate type. Consult the Scotchkote Liner 2400 Design and Installation Guide (available upon request) for engineering design considerations. Scotchkote Liner 2400 is not designed to be a Class A Lining (BS EN 13689: 2002 / BS EN ISO 11295:2010) and may not survive external dynamic loading events. The design life cited in the Scotchkote Liner 2400 Design and Installation Guide refers to the product's material properties per ASTM F1216-09 and does not guarantee the performance of the host pipe itself.

Creamer has completed Scotchkote Liner 2400 projects in California, Pennsylvania and New Jersey. They are also experienced in in situ pipe cleaning, slip lining, pipe bursting and cement mortar lining.

“As a local contractor with a national reputation, the opportunity to team with a successful company such as 3M, which is known for its innovative technologies, gives us a certain sense of pride,” according to J. Fletcher Creamer, Jr., Creamer CEO. “We are excited to be a part of this endeavor with 3M, utilizing their products and our experience in pipe lining. We will prove to be an effective applicator on this and future projects.”

3M Authorized Applicators receive customized training and education. They are required to use only 3M approved equipment, adhere to a scheduled maintenance and equipment certification program, and provide customers with a complete documentation package for each lined segment.

In addition, crew members must complete the 3M Authorized Applicator training program and follow all application and use guidelines outlined in the “3M™ Scotchkote™ Pipe Renewal Liner 2400 Design and Installation Guide (available upon request)”, Technical Datasheets and Technical Bulletins.

Visit <http://www.3M.com/water/renew> to:

- Review case studies
- View a list of our authorized applicators
- Contact us with questions or comments
- Learn more about product and applicator training

Technical information and data, recommendations, and other statements provided by 3M are based on information, tests, or experience which 3M believes to be reliable, but the accuracy or completeness of such information is not guaranteed. Before use, buyer must evaluate and determine whether the 3M product is suitable and appropriate for a particular use and intended application.

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