

CURED-IN-PLACE PIPE (CIPP) TRENCHLESS TECHNOLOGY*



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CWW's CIPP lining services via Trenchless Technology is widely respected and far reaching:

- Sewer Lining
- Lateral Sewer and Drain Lining
- Culvert Rehabilitation
- Manhole Rehabilitation

*Please visit our website www.cwwcanada.com for additional details.

CIPP – Made to Measure

With CIPP methodology there is virtually no digging involved – hence the term “Trenchless Technology”. CIPP is a resin-saturated felt tube or ‘sleeve’ composed of polyester inserted into aging and damaged sewer pipes through air or water pressure. Hot water or steam cures the resin to form an impregnable, jointless, and seamless tight-fitting corrosion-resistant lining that adheres to the exact shape of the existing pipeline. Robotic-controlled cutting devices or manual cutting methods are deployed according to pipe size, and ultimately inspected by closed circuit television (CCTV). Whether the pipe shows slight or severe degeneration, CWW's CIPP liners dependably withstand defined loads and operate under regular conditions for a minimum of 50 years.

CIPP Benefits at-a-Glance

- Long-lasting and dependable structural pipe rehabilitation
- Negligible (business or home) disruption or reinstatement – business/life moves forward, business revenues uninterrupted
- A fiscally responsible/cost-effective solution that leaves conventional dig-and-replace methods behind
- An environmentally responsible solution

SEWER LINING

Rigorous Standards

CWW's CIPP liners are strictly designed in accordance with ASTM-F1216 Guidelines. The ultimate thickness of the liner is dictated by the status of the existing pipe and the mitigating external conditions for optimal performance. Design parameters include:

- Depth, diameter, shape, ovality, and condition of the existing sewer pipe (whether fully or partially deteriorated)
- Level of the ground water table, modulus of the ground water table, and density of the surrounding soil
- Live load, vacuum, and other load conditions (including railroad crossings, etc.)



LATERAL AND DRAIN LINING

Rehabilitation Regardless of Location

Drain lining is generally referred to as the rehabilitation of a section of sewer pipe that is located under a floor or ceiling. Lateral lining refers to the main drain (lateral sewer) from a building's foundation wall to the city's main sewer connection. The drain pipe is first inspected and cleaned in preparation for lining. High pressure jets, rotating blades and (or) a flusher can be used to eject debris from the drain; and once the pipe is clean, the pipe diameter and length is examined and confirmed. Common to all CIPP lining, the liner is designed to mould to the configuration of the existing pipe, and the liner is installed via air inversion and hot water and (or) steam cure.

Under the 'Boardwalk'

A lateral sewer is the main sewer drain extending from a private home or commercial building that typically connects to the main sewer beneath a street. The most common defects to a lateral sewer are caused by root infiltration that eventually blocks the sewer and leads to unpleasant odors, backups, and a series of related damage. CIPP liners are recommended for pipes defects caused not only by roots, but cracks, fractures, holes or offset joints, water infiltration and (or) wear or deterioration due to age. Once cleaned debris is flushed away, the pipe is ready for lining. Should there be a hidden weeping tile connection discovered through a CWW standard quality check, a CWW mini robotic cutter will reopen the connection. Customers can rest assured that a CIPP liner will not only restore the structural integrity of the pipe, due to the smooth finish of the liner it will also improve the overall flow characteristics of the pipe.

CULVERT LINING

Expedient and Effective

Through CIPP methodologies, CWW has mastered culvert rehabilitation in the face of challenging and limited accessibility. With CWW state-of-the-art equipment, a CIPP liner is installed

entirely from one extremity alone that eliminates the need for the development of temporary access roads and associated costs. For large diameter pipe, CWW deploys a crane to move the liner from its refrigerated truck to the culvert inlet or outlet, whichever is most accessible. A calibration bag is then inverted inside the liner and the liner is steam cured, eliminating the need for traditional water trucks to treat the water for curing. The net result: absolute environmentally sound culvert rehabilitation in less time with reduced costs for a distinct competitive advantage.

MANHOLE REHABILITATION

Through CIPP

For cylindrical manhole chambers, a liner can be specifically designed to fit into the existing structure.

With Rubber Coating

Specifically designed to provide a high-tensile strength membrane to seal off water infiltration, Rubberseal Spray Grade (RSG) is a high-performance rubber sealing spray that is environmentally friendly, non-toxic, features 1650% Elongation, and can withstand 150 psi of Hydrostatic Head. Odorless and chemically inert RSG is resistant to punctures, aging, and UV and is recognized as a significant cost-effective rehabilitation method.

By Chemical Grouting

To arrest manhole infiltration, a two part gel is forced into cracks and openings. Once cured, the hardened product is continuous, irreversible, waterproof, and non-porous. Should roots be the compromising factor, an additive can be introduced to prevent any further root growth.

Via Hydraulic Cement

Repairs to the benching and the walls of the manhole chamber can be made by chipping away damaged sections or excess material and sealing the sections with waterproof cement.