

CURED-IN-PLACE PIPE (CIPP)



<http://www.canadianundergroundinfrastructure.com/article/19637/>

WHAT IS CURED-IN-PLACE PIPE LINING?

The cured-in-place pipe (CIPP) lining process involves the installation of a resin saturated lining tube into an existing sewer pipe. The lining looks like a very large sock. The liner is cured utilizing air or water under pressure that is forced into the tube, inverting it and causing it to expand to fit tightly against the existing sewer walls. Hot air or water is circulated throughout the tube to harden the resin. As an alternative to air and water, ultra violet light method is a relatively new method that is being employed to install CIPP liners. When the curing process is completed, a new pipe inside the old pipe is created. This eliminates cracks and holes that allow rainwater and roots to enter the sewer and cause operational problems such as overflows. This concept was developed in London in 1971 and since then has helped to rehabilitate nearly 10,000 miles of sewer pipe worldwide.

WHAT HAPPENS DURING THE CIPP PROCESS?

Prior to the lining process the sewer must be prepared. This includes removing roots, sediment and grease from the sewer and cutting out intruding service connections. The sewer is then inspected using closed circuit television (CCTV) and the locations of connections from homes and other properties are noted. Manholes are also inspected. Like many other forms of pipe renewal/replacement, CIPP requires bypass pumping, which re-routes sewer flow around the segment being worked on during installation. Occasionally, a local repair may be carried out on the existing sewer where the pipe has collapsed, before the CIPP lining is installed.

WHAT ARE THE BENEFITS OF CIPP?

The advantages of CIPP include:

- CIPP allows for rehabilitation of pipes without disturbance to surface structures or other utilities
- CIPP produces a seamless, jointless pipe lining without greatly reducing the diameter of the original pipe. It also leaves no gaps, eliminating the need for grouting after the liner is installed.
- Though the liner system does slightly reduce pipe size (by the thickness of the liner), the smooth interior of the liner reduces friction, which increases flow capacity.
- Private service connections are reconnected without further digging. A dimple forms where the lining passes a service connection. CCTV easily locates the dimple and cuts out the lining using remote techniques.
- Eliminates infiltration and inflow through pipe defects that reduces pipe capacity
- The finished product has a 50-year design life, the same as that of a brand new pipe.



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