

# Cost-Effective Repairs with Trenchless Sewer Linings

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# Trenchless Lining Methods

## Several Trenchless Methods

- Cured-In-Place Pipe (CIPP)
- Fold and Form
- Pipe Bursting
- Slip Lining



# Topics

- Benefits of CIPP lining
- Limitations of CIPP lining
- CIPP lining installation procedures
- Sewer service lining options



# Poll Question #1

Have you installed trenchless sewer linings in your system?

Yes

No

# Benefits of CIPP Trenchless Lining

## Construction

- Cost
- Duration
- Existing Utilities
- Season
- Service Disruption
- Bypass Pumping



# Benefits of CIPP Trenchless Lining

## Materials

- Liner lifespan is similar to new pipe
- Tightly fits in existing pipe



# Poll Question #2

What is the current average age of your sewer mains?

- 0-20 years
- 20-40 years
- 40-60 years
- 60+ years

# Limitations of CIPP Trenchless Lining

## Existing Conditions

- Pipe Size
- Pipe Grade
- Fittings / Bends
- Existing Damage





# Limitations of CIPP Trenchless Lining

## Construction

- Specialized Contractor
- Scheduling
- Liner malfunctions
- Odors



# CIPP Installation Procedures

## Initial Evaluation

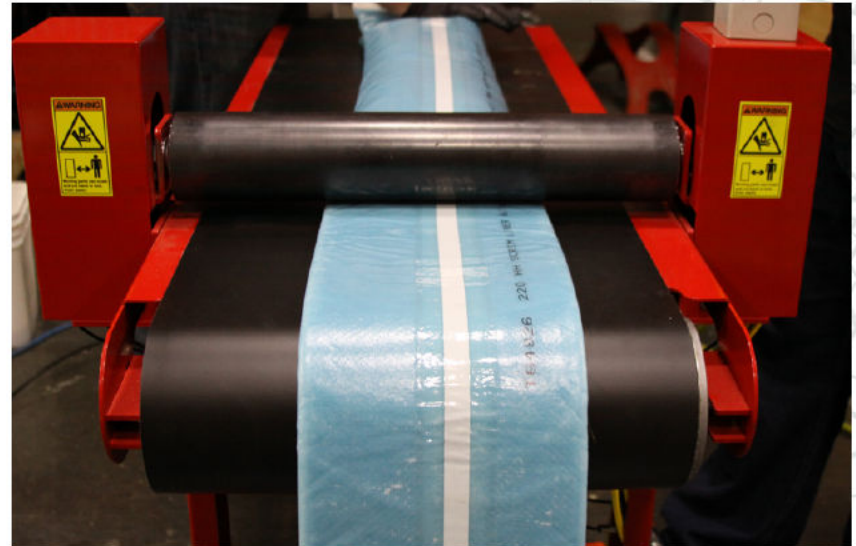
- Cleaning / Inspection
- Spot Repairs
- Bidding



# CIPP Installation Procedures

## Pre-installation

- Cleaning/Inspection
- Service dye testing
- Wet-out process
- Transport



# CIPP Installation Procedures

## Installation

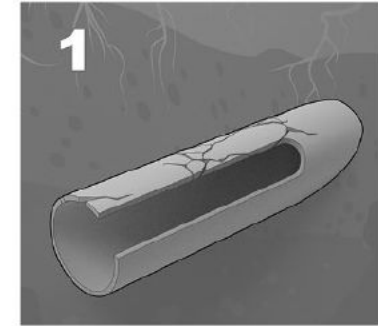
- Insertion
- Cure
- Reestablish Services



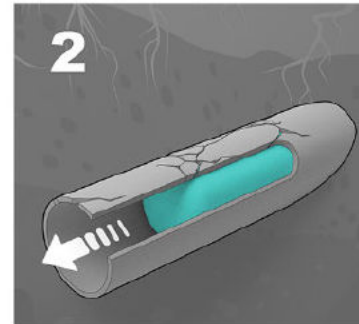
# CIPP Installation Procedures

## Cured-In-Place Pipe (CIPP) Liner Installation

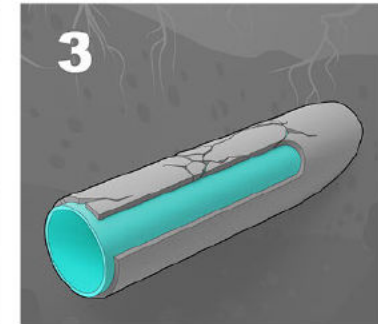
One option to reduce the cost of expensive sanitary sewer replacements is Cured-In-Place-Pipe (CIPP). This trenchless lining technique is a popular choice due to its quick turnaround, minimal excavation requirements, and limited disruptions to service.



After cleaning and evaluating the existing pipe for damage, the sewer pipe is ready for its new lining.



The new CIPP liner is installed into the pipe by injecting a felt liner with epoxy resin and then inflating the liner into the existing pipe. The pipe is accessed through existing manholes or access points.



Finally, the liner is cured with heat. Pipe sections of a typical city block can be installed in less than a day. Service connections are then restored using remote-controlled robots to trim the liner away from the piping outlet.

# CIPP Installation Procedures

## Owner Follow Up

- Installation Review
- Additional Considerations



# Poll Question #3

Have you lined manholes or service lines in your system?

Yes

No

# Service Lines

- Infiltration and Inflow (I&I) Concerns
- “Top Hat” liner
- “Full Wrap” liner
- Full length liner





# Questions?

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