

# Underground Lining Solutions | Alternative Lining Technologies

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Custom manufactured CIPM Liners from our [lining solution professionals](#) at **Alternative Lining Technologies** are saving collection systems thousands of dollars in repair and rehabilitation budgets, while adding years to aging structures, and reducing, or completely eliminating, costly and damaging *infiltration and exfiltration problems*. Unlike other adhesives or coatings, **Alternative Lining Technologies CIPM Liners** form a complete reinforced structure within the host structure and are easily installed to all types and sizes of underground structures.

## How CIPM Liners Work

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The **CIPM Liner** is cured-in-place *rehabilitation technology* which keeps *sewer and wastewater systems* working better and longer. Designed and manufactured specially for each structure, and shipped dry to the installer, the unique and patented design employs an inward-facing layer of PVC which forms an impervious barrier against sewer-gas corrosion and ground-water infiltration. Fabricated to consistent standards, [CIPM Liners](#) do not significantly reduce the opening into the host structure, typically no more than 0.5-inch access diameter is lost.

A *custom-blended epoxy resin* is mixed and applied to the **CIPM Liner** on site. The [epoxy-coated liner](#) is then inserted into the manhole interior. The [underground liner](#) is cured with heat (180°F) and kept under pressure with steam conforming the liner to the shape of the manhole, and promoting high bonding strength to the substrate. The application of continuous pressure helps the resin penetrate the substrate to form strong and stable epoxy anchors.

Typically, the liner is cured in a matter of an hour forming a *protective barrier* within the manhole. Completion time will vary depending on job scope and the prior condition of the *wastewater system*. **Alternative Lining Technologies** uses a carefully groomed process to ensure the minimal down-time and rapid repair on every job.

## Benefits of CIPM Liners

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Designed to withstand [ground water pressure](#) between it and the host structure, the patented construction of **durable CIPM Liners** stop *ground-water infiltration* and the extra expense it adds to *sewage treatment*. This same patented technology also halts waste stream exfiltration into the environment.

The flexible PVC on CIPM Liners bridges the potential cracks caused by settling, dynamic traffic flow and freeze-thaw conditions. The *fiberglass reinforcement* also reduces the likelihood of cracks. And together, the layers stop soil seepage into the manhole and the resultant dimpling in the asphalt around the frame and cover.

**CIPM Liners** also provide complete protection from the *hydrogen sulfide* released by bacteria in the wastewater system. The liners extend from the sewage flow line (or below it) to the support lip of the manhole over so all *gas-exposed surfaces* are lined, completely blocking corrosion, and the associated failure and pollution problems.

The smooth white *PVC interior* results in a brighter manhole for easy access and inspection and is much easier to clean the brick or concrete substrates.

## **Preferred Technology**

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CIPM Liners are often the preferred technology of *municipalities*, utilities and others for **rehabilitating manholes, vaults, wet wells, pump stations** and other underground structures. Engineers, Utility Owners, and Industrial Facilities know they can depend on **Alternative Lining Technologies** products and knowledge based on many years of service to the underground industry. Custom fabricated liners are a protective barrier from *corrosive gases* and *ground water infiltration*, affording a like-new condition and peace of mind.

Since their introduction in 1998, CIPM Liners have met the demands of countless commercial and municipal clients for projects both large and small. Proven superior in acid resistance to other technologies in tests conducted by the Sanitation District of Los Angeles County, the liners add years of useful life to aging sewer structures, reduce, or eliminate infiltration and exfiltration, while saving valuable infrastructure dollars through rehabilitation rather than reconstruction.

**Article by:** *Southeast Society for Trenchless Technology*