

Fight Manhole Corrosion with Coating Systems



After decades of pipe failures and sewer backups, America's wastewater infrastructure is deteriorating and experiencing corrosion. Many municipalities are combating this issue by rehabilitating corroded and leaking manholes that intake I/I and damage the overall system. Because manholes can account for up to 30% of unnecessary groundwater, organizations have recognized that rehabilitating manholes are essential to restoring the entire wastewater system.

Microbiologically Induced Corrosion (MIC) has been determined as a primary problem in most sewer systems. This occurs when bacteria combines with 'sewer gas' and produces a sulfuric acid. Extremely corrosive to concrete, steel and other metal, once the acid begins to damage the manhole, it can completely lose its ability to function properly.

With manhole rehabilitation on the rise, coatings have proven to be a beneficial product in fighting MIC and restoring manholes. Coatings create a barrier between the manhole and the acid, thus protecting the environment and adding overall service life to the system.

Coating products can be categorized as the following:

- *Cement*: microsilica mortars and calcium aluminate mortars
- *Epoxy*: liners, resin, fiber reinforced, mortars
- *Poly-*: polyurethane liners, hybrid polyurea liners and pure polyurea liners

Although coating systems fight against MIC, they all differ greatly in terms of their chemical makeup and properties. When determining which coating product is best for manhole rehabilitation, it's important to consider overall functionality, durability and performance.

Cement Advantage:

- Porous
- Slows the inflow of water or chemicals
- Extends overall structural lifespan
- Creates chemical-resistant barriers

Epoxy Advantage:

- 100% solid epoxy
- No VOCs, CFCs or HFCs
- Odorless, solvent free & less waste
- Builds up to 1/4" (250 mils) without sagging
- Protects against MIC and H₂S
- Working temperature between 40° F and 120° F
- Viscosity permits installation on vertical and overhead surfaces
- Adhesion in damp, humid areas and surfaces
- Fast cure time, easy installation
- Zero shrinking

Polyurethane / Polyurea Advantage:

- Bonds to material with moisture-tolerant epoxy primer
- Crack bridging capabilities
- Withstand traffic, pressure, soil movement and pipe shifting
- No VOCs
- Fast cure time, easy installation
- Plural component
- Builds up to 1/8" (10-125 mils)
- Resistant to chemicals

Source One Environmental (S1E) offers a [100% solid epoxy coating](#) that is ideal for manholes, wet walls, vaults and more. Our [product](#) creates a structural barrier that is permanent and adds structural integrity to repair area. The unique, two-part small bagging system reduces waste and allows a simple application when space may be limited.



S1E: *Source One Environmental (S1E) was established in 2009 to provide innovative solutions for municipalities, contractors and plumbers in the water management and infrastructure rehabilitation markets. S1E manufactures trenchless repair products that provide customers with an environmentally-friendly and cost-effective solution while offering on-site training and consultations.*