



SOLUTIONS FOR STRUCTURAL REHABILITATION OF FORCE MAINS

RS CITYMAIN™ LINING SYSTEMS



CURED-IN-PLACE PIPE (CIPP) SYSTEM FOR THE REHABILITATION OF SEWER FORCE MAIN PRESSURE PIPES.

RS CityMain is a cured-in-place pipe system for the trenchless rehabilitation of sewer force mains and other pressure systems. A flexible liner impregnated with a thermosetting epoxy resin is installed into the defective pipe producing a new pipe as the liner is cured within the host pipe.

The RS CityMain system consists of a specially engineered multi-layered fiberglass reinforced polyester felt liner that is inverted into the pipe with either a hydrostatic water column or compressed air. The installed liner is subsequently cured with hot water or steam. The resin impregnation and installation is done on-site, though a patent pending mobile wet-out system from HammerHead® Trenchless that offers unprecedented quality controls including computer controlled resin mixing and liner wet-out, data logging and other quality assurance measures exceeding requirements of ASTM F2994 for reliable installations

RS CityMain renewal technology can be engineered to offer Class III or Class IV solutions in accordance with AWWA M28. The properly designed and installed product is an independent system capable of maintaining long-term internal pressure and all external loads without support of the existing pipe effectively replacing the host pipe as a fully structural Class IV solution. Alternatively, it can be designed as a Class III semi-structural system to rehabilitate pipes suffering from internal corrosion, leaking joints, and/or localized external corrosion.

APPLICATION RANGE

- RS CityMain™ liner can be installed in all host pipe materials
- Sealing of leaking joints and hole corrosion
- Prevention of further internal corrosion and encrustation
- Internal burst strength of RS CityMain liner is greater than or equal to the host pipe
- Ability to survive sudden failure of host pipe
- Replacement of host pipe
- Average installation length of 300-500 feet
- Bends up to 45°
- Joint deflections up to 10% can be lined without difficulty

TECHNICAL DATA

- Highly flexible liner (prior to curing) results in a tight fit to the host pipe
- Allows for variations in diameter of the host pipe up to 5%
- Wall thickness 5 to 15 mm
- Maximum operating pressure: Up to 200 psi
- Temperature range: Standard resin and coating is suitable for long term operating temperature up to 150°F. Higher temperature applications are evaluated according to project specifics.

INSTALLATION

The host pipe is cleaned to remove loose obstacles and provide a sufficient internal pipe surface to allow for optimum hydraulic performance of the lined pipe. Water jetting and mechanical cleaning devices are used for cleaning depending on the host pipe condition. Utilizing mobile wet-out technology and installation processes ex-

ceeding the requirements of industry standard ASTM F2994, the liner is fully saturated with the approved epoxy resin while under vacuum. The wet-out liner then passes through computer controlled calibration rollers and prepared for installation into the host pipe.

Installation is performed by inversion method compliant with ASTM F1216. Curing is performed using either controlled steam, normally after installation with pressure drum; or, hot water, normally after installation with hydrostatic water column.

CONNECTIONS

Connections and joining techniques can be modified to suit the systems maintenance requirements with industry standard fittings. Service connections are made via open-cut excavation or robotic means.

FEATURES

- Styrene-free, HAP-free, VOC-free environmentally friendly epoxy resin
- Fully structural Class IV pressure pipe liner
- Unprecedented quality controls with computer controlled resin mixing and liner wet-out, data logging and other quality assurance measures exceeding requirements of ASTM F2994 for reliable installations and long-term performance of the rehabilitated pipe
- ASTM F1216, F2019, F2994 compliant

PRODUCT SPECIFICATIONS

Medium	Municipal and industrial sewage
Dimension – in (mm)	6 – 48 (150 – 1,200) pipe diameter
Resin	Epoxy, 100% solids, solvent-free, HAP-free, VOC-free, styrene-free
Liner	Fiberglass reinforced needled felt hose, polyolefin coated
Wet-out system	ASTM F2994 compliant, vacuum saturation with mobile wet-out technology
Curing procedure	Hot water or steam

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