



Certified Applicators
of Non Toxic No Dig
Restoration Systems

Warren Environmental, Inc.

501 Cured in-Place Pipelining System Product Code 501-01

DESCRIPTION: A 2-part epoxy cured in-place pipelining product formulated for use in the patented Warren Environmental Pipelining System.

CHARACTERISTICS: Formulated with special additives and modifiers to enhance the water resistance, chemical resistance, and bond strength to a variety of substrates as well as its own internal strength.

APPLICATION: Designed for use with Warren Environmental's patented meter, mix and spray equipment. The epoxy component utilizes a 2 parts base to 1 part activator mix ratio by volume. This product is sold and installed only by technicians specifically trained and licensed in our patented techniques.

METHODS OF APPLICATION:

Spin Applied Method

Clean line of tuberculation and debris via scarifiers, sand blast, or water. Flush line clean with copious amounts of water. Apply product through the use of a high speed spinning application head.

Inversion Method

Saturate the interior of the liner with epoxy resin (Warren Environmental 501-01) and invert with high pressure air or water. Cure with either hot water or heated air.

Calibration Hose Method

Place a light weight felt liner inside the calibration hose for delivery to job site. The felt liner will be wetted out with the 501-01 epoxy inside the calibration hose. The liner will be inverted into the host pipe and cured with either hot water or hot air. 4. Once the line is cure the inversion line is removed and the pipe is ready for service.

SAFETY AND HANDLING: Material inadvertently applied to the skin should be washed immediately with lanolin based soap and warm water. Refer to the Material Safety Data Sheet for additional information.

Typical Properties

Liquid Properties (Systems)

Specific Gravity	~1.1
Flash Point (Closed Cup)	>235°F
Color	Clear to Amber
Geltime (200g@77°F)	>140 minutes
Thin Film Set (@ 77°F)	8 hours
Thin Film Set (@ 40°F)	96 hours

Physical Properties

(1/8" Casting)

Tensile Strength (ASTM D638-86)	7000 psi
Flexural Strength (ASTM D790-86)	11,000 psi
Flexural Modulus @ 0.100" (ASTM D790-86)	500,000 psi
Compressive Strength (ASTM D695-85)	12,000 psi
Glass Transition Temperature (ASTM D3418-82)	151°F
Tensile Elongation @ Break	<3%
Thin Film Set (@77°F)	6 hours
Shore D Hardness	80-82

Chemical Resistance

(28 Day Immersion)

Chemical	Weight Gain (%)
Toluene	0.99
Ethanol	4.68
10% Acetic Acid	3.85
70% Sulfuric Acid	0.13
50% Sodium Hydroxide	0.09
Distilled Water	1.11
Methanol	9.55
Xylene	0.69
Butyl Cellosolve	1.18
Methyl Ethyl Ketone	11.19
10% Lactic Acid	3.24
Bleach	0.93
1,1,1 Trichloroethane	0.43
10% Nitric Acid	2.05
30% Nitric Acid	4.17

Cure

In Service	2 hours at 150°F.
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Contact us at:

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All values reported above are typical values, and are reported as a means of reference. Individual testing should be done to determine actual results, tested at specific conditions.

MISSION STATEMENT

Warren Environmental, Inc. will provide cost-effective coatings and methodologies that lead to permanent time-sensitive solutions meeting the structural rehabilitation needs of their customers. To this end, we pledge to use environmentally friendly materials, train and certify the people installing our products, and provide our customers a worry free experience.

STORAGE & USE

TWO-PART EPOXY COATINGS: are supplied in 50 gallon steel drums. The unmixed shelf-life is one (1) year from date of purchase when stored indoors in their sealed original containers at a room temperature between 60°F and 80°F. When using this material, it is important to prevent cross contamination of the unused components. To assure proper performance, it is mandatory that the components be correctly identified and the mix ratio cited on the front of this bulletin be strictly followed.

CURED IN-PLACE PIPLINING SYSTEMS: this patented system may be provided in several different methodologies depending upon the application and field conditions. Warren Environmental, Inc. requires that these materials be installed by our licensed applicators only. These people are trained by us to address the issues unique to each situation. For more information please contact us.

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GENERAL SURFACE PREPARATION GUIDELINES

Surfaces to be coated or adhered to should be cleaned of oil, grease, rust, scale, loose dirt and other contaminants that may hinder the adhesion of the epoxy coating to the substrate. In many instances cleaning the area to be coated of tuberculation and debris via scarifiers, sand blasting, or water will be sufficient. In rare instances such as oil covered metal, it may be necessary to treat the area with a solvent based cleaner. It is important to remove all traces of the solvent including fumes prior to applying the epoxy coating to ensure that no pinhole defects develop as the product cures. Concrete should be cured a minimum of 28 days prior to applying coating materials. Please contact us with specific questions regarding your application.

WARRANTY

Warren Environmental, Inc. warrants only that the product meets that quality and technical standards published in its current literature. Warren Environmental, Inc. cannot be held responsible for circumstances outside of its control including, but not limited to: product application, product handling, product storage, or any other conditions outside of our control. If within one (1) year from date of purchase, any product is proven by accepted industry standard test methods to be defective Warren Environmental, Inc. will, at its sole option, either replace or refund the purchase price of the product. These remedies shall constitute the sole and exclusive remedy for any claim under this warranty. This warranty is in lieu of any other warranties, expressed, implied, or statutory and is strictly limited to its terms.