



Certified Applicators
of Non Toxic No Dig
Restoration Systems

Warren Environmental, Inc.

501 Cured In-Place Firemain Restoration System Product Code 501-03

DESCRIPTION: A 2-part epoxy cured in-place firemain product formulated for use in the patented Warren Environmental Firemain 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' patented meter, mix and supply equipment. The epoxy components utilize a 2 part 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.

Surface Preparation: Clean line of tuberculation and debris via scarifiers, sandblast, or ultra high pressure water (6,000-10,000 psi). Flush line with copious amounts of water. Purge line with high pressure air or foam pig method. Closed circuit T.V. the firemain to verify it is ready for lining.

METHODS OF APPLICATION:

- Spin Applied Method:** Apply product through the use of a high speed spinning application head.
- Inversion Method:** The vinyl clad structural composite liner will be wetted out with the 501-03 epoxy. The prepared liner will be inserted into the host firemain and cured with either hot water or hot air for six to twelve hours. Once the integrity of the liner is confirmed via T.V. inspection, the firemain 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 Material Safety Data Sheet for Additional information.

Typical Properties

Liquid Properties (Systems)

Specific Gravity	-1.1
Flash Point (Closed Cup)	>235 ^o F
Color	Clear to Amber
Geltime (200g@77 ^o F)	>140 minutes
Thin Film Set (@ 77 ^o F)	8 hours
Thin Film Set (@ 40 ^o 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 ^o F
Tensile Elongation @ Break	<3%
Thin Film Set (@77 ^o 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	3.856
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 Keytone	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^oF

Contact us at:

PO Box 1206, Carver, MA 02330
www.warrenenviro.com

Tel. (508) 947-8539

Fax (508) 947-3220

E-mail: info@warrenenviro.com

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 PIPLING 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.

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.

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.