# Madison Chemical Industries Inc.

# CORROPIPE II ULTRALINER

**TECHNICAL DATA** **HIGH PERFORMANCE PIPE LINING SYSTEM**

## THE PRODUCT AND ITS USES

CorroPipe II UltraLiner is a two component, quick setting, solvent free internal coating for pipelines of all kinds. This "structural" (rigid) polyurethane is Madison's most chemical resistant product and cures to form a tough, smooth, durable liner. Performance advantages include abrasion resistance and low co-efficient of friction (for higher throughput). It is suitable for high temperature applications.

CorroPipe II UltraLiner can be sprayed to any desired thickness in a single-coat, primerless application, at any ambient temperature to enable fast and trouble-free application. The use of a lance device will facilitate high speed lining of pipe in the shop. Field lining is also feasible with larger diameter pipe using a hand-held spray gun.

**CorroPipe II UltraLiner (CM)** is a ceramic modified version of the CorroPipe II UltraLiner material that offers enhanced abrasion resistance and is ideal for highly abrasive or high flow applications.
**CorroPipe II UltraLiner (AM)** is a modified version of CorroPipe UltraLiner that contains an EPA registered Anti-Microbial agent.

## TECHNICAL INFORMATION

| PROPERTY | TEST DESCRIPTION | RESULTS |
|---|---|---|
| Application Temperatures | N/A | -40°C(-40°F) to 65°C(150°F) |
| Initial Setting Time | @ 70°F/20°C | 1 minute (snap set), 5 minutes (fast set) |
| Curing Time Before Handling | @ 70°F/20°C | 5 minutes (snap set), 15 minutes (fast set) |
| Ultimate Cure | @ 70°F/20°C | 4 days |
| Recoat Time* | @ 70°F/20°C | 30 minutes (snap set), 1 hour (fast set) |
| Solids Content | ASTM D-1259 | 100% |
| Volatile Organic Compounds (VOCs) | ASTM D-2369 | 0 grams / litre |
| Theoretical coverage | N/A | 1016 $m^2$/litre/micron (1604 $ft^2$/US gal/mil) |
| Adhesion to steel | ASTM D-4541 (SSPC SP5) | Greater than 2000 p.s.i. |
| Adhesion to ductile iron | ASTM D-4541 | Greater than 2000 p.s.i. |
| Adhesion to Concrete | ASTM D-4541 | Exceeds cohesive strength of concrete |
| Hardness | ASTM D-2240 Shore D | 75 +/- 5 |
| Flexibility | ASTM D-522 (20 mils) | 180° over 3" mandrel |
| Abrasion Resistance | ASTM D-4060 (CS-17 wheels, 1 kgs weights, 1000 revolutions) | 50 mg (standard version)<br>15 mg (CM version) |
| Permeability | ASTM E-96 (15 mils) | 0.002 perm inches |
| Resistance to Cathodic Disbondment | CSA Z-245 (65°C, 48 hours, 20 mils) | 10 mm average radius |
| Chemical Resistance | ASTM D-543 | Excellent; see Chemical Resistance Chart |
| Dielectric strength | ASTM D-149 | Greater than 200 volts per mil |
| Surface Resisitivity | ASTM D-257 | 1 x $10^{14}$ ohms per $cm^2$ |
| Water Absorption | ASTM D-471 | Less than 3% |
| Impact Resistance | ASTM D-2794 (20 mils) | Very Good; greater than 50 in. lbs. |
| Ultraviolet Resistance | ASTM G-154 | Will chalk and darken |
| Temperature Resistance | ASTM D-870,<br>ASTM D-2485 | -40°C(-40°F) to 90°C(195°F) Wet<br>-40°C(-40°F) to 125°C(250°F) Dry |
| Colors | | Consult Madison Representative |

*However, recoat window varies depending on the spray equipment temperature setting, the ambient conditions, product temperature/thickness, and the temperature of the substrate being coated.

NOTE: All statements, technical information and recommendations contained herein are typical of results obtained under laboratory conditions and are not intended to be used as contract specifications. For specification guidelines please contact Madison Chemical.

## APPLICATION INSTRUCTIONS

CONTACT MADISON FOR DETAILED APPLICATION INSTRUCTIONS.

**A. SURFACE PREPARATION**

1) Ensure that surface is clean, dry and uncontaminated. Proceed only if the substrate temperature is more than 3°C(5°F) above the dew point temperature during surface preparation and coating application.
2) Abrasive blast clean with sand or grit (G40 or coarser). DO NOT USE steel shot or non-angular media.
   For **steel** surfaces, blast to a Near White Blast (SSPC-SP10; NACE 2; SA 2.5):
   - minimum 3.0 mil (75 microns) profile for immersion;
   - minimum 2.5 mil (65 microns) profile for buried;
   - minimum 2.0 mil (50 microns) profile for atmospheric service.

   For **ductile iron** surfaces, abrasive blast to achieve a surface anchor profile of 2.5 mils or greater. Remove all rust and loose oxides.
   For **concrete** surfaces, abrasive blast to remove any latiance.
3) See Madison Application Instructions for details.

**B. APPLICATION OF COATING**

1) Roll or agitate individual components thoroughly before use to disperse pigments and assure homogeneity. Do not thin. Do not mix “A” and “B” together.
2) Spray apply using a plural component, 1:1 mix ratio, heated airless spray unit.
3) Unlimited film thickness can be obtained in one continuous coating operation, using one of several techniques. Contact Madison for detailed instructions.
4) For coating on a conveyor line, a uniform pipe temperature of between 20°C(70°F) and 55°C(120°F) is required to enable the coating to cure quickly. Otherwise, substrate temperature is unimportant.
5) A second coat may be applied over the first, as long as it is applied within the recoat window. Otherwise, it may be necessary to roughen the surface to ensure good intercoat adhesion.

**C. CLEAN-UP AND STORAGE**

1) This material will react with humidity and moisture. Keep containers tightly sealed and store upside down. For clean-up, use Madison VR-1 Viscosity Reducer, M.E.K. or a 50:50 blend of M.E.K. and Xylol. Other solvents may react with product.
2) Store between 10°C(50°F) and 27°C(80°F). DO NOT FREEZE. Use product within 6 months of receiving.

## HEALTH AND SAFETY

CorroPipe II UltraLiner is intended for industrial use only. It contains no monomeric isocyanates but may nevertheless cause respiratory distress in some people. Provide ample ventilation. Wear a fresh air respirator when using in confined areas or when spraying. Wear rubber gloves, safety goggles and protective clothing. If swallowed, DO NOT induce vomiting as this will cause additional throat irritation; contact physician. If splashed on skin, remove immediately with rubbing alcohol and then wash with soap and water. If splashed in eyes, wash liberally with clean water and contact physician; temporary irritation of eyes may last several days. Contains no known or suspected carcinogens or mutagens. See MSDS for more information. The finished product is totally inert and harmless.

## LIMITED TWO YEAR WARRANTY

Madison will replace any product which, in service for which it is suitable, fails to meet specifications within two years of sale and which is proven to be defective when applied according to instructions by a Madison Approved Applicator or Certified OEM Applicator. Madison accepts no responsibility or liability for any other loss, claim, damage, injury or expense, direct or consequential, in contract or negligence. This product replacement warranty is in lieu of any other right, warranty, guarantee or condition, statutory or otherwise, expressed or implied, whether as to fitness for a particular purpose or as to merchantable quality or otherwise.

The information contained herein is believed to be accurate as of the date of publication. Madison reserves the right to change product specifications without notice.

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