



CP II JOINT ENCAPSULANT

TECHNICAL DATA

CASTABLE GIRTH WELD COATING SYSTEM

THE PRODUCT AND ITS USES

CP II Joint Encapsulant is a 100% solids high performance polyurethane casting resin for the encapsulation of steel pipe girth welds. The same chemistry that has provided 28 years of **zero failure** history for underground tank and pipe coatings is used to provide outstanding protection against corrosion, chemical attack and cathodic activity. CP II Joint Encapsulant is suitable for use with polyurethane, polyethylene, polypropylene and fusion bond epoxy coated pipe operating at standard or elevated temperatures.

The excellent performance characteristics are obtained with minimal equipment. The applicator mixes pre-measured quantities of different colored low viscosity resins and pours the material into the fabricated mold. Correctly applied, CP II Joint Encapsulant is virtually indestructible or removable once it is cured (15 - 30 minutes). The self-inspecting nature of the resin ensures that an incorrectly mixed or contaminated joint will be identified immediately.

This environmentally responsible product contains no tar, amines, styrenes, isocyanate monomers, solvents, carcinogens or other hazardous ingredients.

TECHNICAL INFORMATION

| PROPERTY | TEST DESCRIPTION | RESULTS |
|---|---|--|
| Application Temperatures | N/A | -40°C(-40°F) to 65°C(150°F) |
| Initial Setting Time | @ 20°C/70°F | Up to 15 minutes |
| Curing Time Before Handling | @ 20°C/70°F | Up to 45 minutes |
| Curing Time Before Immersion | @ 20°C/70°F | 2 hours |
| Ultimate Cure | @ 20°C/70°F | 5 days |
| Recoat Time | @ 20°C/70°F | 2 times the initial setting time |
| Solids Content | ASTM D-1259 | 100% |
| Volatile Organic Compounds (VOCs) | ASTM D-2369 | 0 grams/litre |
| Theoretical Coverage | N/A | 1016m ² /litre/micron(1604 ft ² /US gal/mil) |
| Adhesion to steel | ASTM D-4541 (SSPC 5) | Greater than 2500 p.s.i. |
| Hardness | ASTM D-2240 (Shore D) | 70 +/- 5 |
| Flexibility | ASTM D-522 | 180° over 6" mandrel |
| Abrasion Resistance | ASTM D-4060 (CS-17 wheels, 1 kgs weights, 1000 revolutions) | 52 mg loss |
| Permeability | ASTM E-96 (15 mils) | 0.001 perm inches |
| Resistance to Cathodic Disbondment 2.5 mm/100 mils | ASTM G8-72(23°C, 28 days) ASTM G8-72(65°C, 28 days) ASTM G8-72(90°C, 28 days) | Less than 1 mm Less than 5 mm Less than 7 mm |
| Chemical Resistance | ASTM D-543 | Excellent; See Chemical Resistance Chart |
| Dielectric Strength | ASTM D-149 | Greater than 200 volts per mil |
| Impact Resistance | ASTM G-14 (100 mils) | Greater than 100 in. lbs. |
| Ultraviolet Resistance | ASTM G-154 | Will chalk and darken |
| Service Temperature | ASTM D-2485 | -40°C(-40°F) to 90°C(195°F) Dry |
| Colors | | Black, Gray, Red |

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) On metal surfaces exposed to atmospheric service, a near-white blast (SSPC-SP10, NACE 2) with steel grit (G40 or coarser). For underground immersion and sub-immersion services, a white metal blast (SSPC-SP5, NACE No. 1) is recommended. DO NOT USE steel shot or non-angular media. For steel surfaces, a minimum of 2.5 mils (65 microns) of angular profile must be achieved. Roughen adjacent pipe coating by sandblasting or other mechanical means to a profile greater than 2.5 mils (65 microns). The adjacent coating should be abraded back to a minimum of 3 inches. Welds or other sharp protrusions may require grinding or other surface preparation to reduce the profile of the irregular surface prior to the blast cleaning.
- 3) See Madison Application Instructions for details.

B. APPLICATION OF COATING

- 1) Apply evenly a proper mold release over interior mold surface to ensure easy removal (the use of the mold release will depend on the mold material).
- 2) Clamp mold firmly onto pipe to ensure no leakage. Pour entry should be positioned at top, dead center of pipe.
- 3) Obtain a clean, dry mixing container. Thoroughly mix equal amounts of the 'A' and 'B' components together. Prepare about 5 to 10% more than theoretically required to fill mold. The pot life of the mixture varies from 5 to 20 minutes, depending on the quantity of the mixture.
- 4) Pour the mixture to completely fill the mold. Allow the resin to "cure to handle" (see reverse) and remove the mold.
- 5) Additional material can be added with no other requirements if it is applied within the recoat window. Otherwise, sandblasting or mechanical roughening of the surface will be necessary to ensure adequate adhesion.

C. CLEAN-UP AND STORAGE

- 1) This material will react with humidity and moisture. Keep containers tightly sealed and store upside down. Do not thin or reduce. For equipment 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

CP II Joint Encapsulant 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.

July 2007 v02



Phone: 905-878-8863 Fax: 905-878-1449 490 McGeachie Drive, Milton, Ontario Canada L9T 3Y5
e-mail: sales@madisonchemical.com Web: www.madisonchemical.com
World Leader for Infrastructural Coatings™