



EC-120

TECHNICAL DATA

POLYURETHANE-EPOXY HYBRID COATING

THE PRODUCT AND ITS USES

EC-120 is a 2:1 mixing ratio two-component, high gloss, slow setting, 100% solids (No VOC), Bisphenol A type epoxy-polyurethane hybrid type coating for applications of all types. It is also suitable wherever high performance and ease of use are equally important; for example, pipe joint coating, large area repair, water storage tanks, wastewater treatment applications and factory floors. Properly applied, EC-120 will provide a pinhole-free, monolithic barrier which completely protects the parent structure. EC-120 can also be used as a rendering material for concrete substrates to reduce pinholing of top coatings. The finished product is enamel-like in appearance and offers excellent resistance to corrosion, abrasion and cathodic disbondment, combined with moderate chemical resistance.

If fast throughput is a concern, consider using one of Madison's plural component, fast setting coatings as an alternative.

APPROVALS AND LISTINGS

Certified under NSF International NSF/ANSI Standard 61 for use in potable water applications.



TECHNICAL INFORMATION

PROPERTY	TEST DESCRIPTION	RESULTS
Application Temperatures	N/A	10°C (50°F) to 65°C (150°F)
Initial Set Time	@20°C/70°F	5 hours
Pot Life	@20°C/70°F	45 minutes
Recoat Time*	@20°C/70°F	Minimum recoat time 6 hours Maximum recoat time 48 hours
Ultimate Cure Time	@20°C/70°F	7 days
Solids Content	Conversion to Solids by Volume	100%
Volatile Organic Compounds (VOCs)		0 grams/litre
Theoretical Coverage	N/A	40 m ² /litre/25 micron (1604 ft ² /US gallon/mil)
Hardness	ASTM D-2240 Shore D	90
Adhesion to Concrete		Greater than the cohesive strength of concrete
Adhesion to Steel; 2 mil Anchor Pattern Near White Blasted Mild Steel	ASTM D-4541	>1500 psi
Dielectric Strength	ASTM D-1000 @23C (73F)	> 200 volts/mil
Abrasion Resistance	ASTM D-4060 Taber CS-17, 1kg, 1000 cycles	60 mg
Impact Resistance	ASTM D-638 Gardner 1G-1120	70 inch-pounds @23°C (73°F)
Temperature Resistance	ASTM D-870 ASTM D-2245	Up to 88°C (190°F) Wet Up to 149°C (300°F) Dry
Flame Spread	ASTM E-84	12.7
Colors		Available in grey, white, red and black

1 However, recoat window varies depending on ambient, coating and substrate temperatures and coating thickness.

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. 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.

APPLICATION INSTRUCTIONS

CONTACT MADISON FOR DETAILED [APPLICATION INSTRUCTION BULLETIN](#) (also available online).

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), finishing with a:
 - 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.

When this is not feasible for field application, we recommend that the structure be preblasted in the shop. Once in the field, the surface is reblasted or cleaned with a power hand tool to achieve a minimum depth profile of 2.5 mil (65 microns). For immersion service, the steel surface must be blasted.

For **concrete** surfaces, abrasive blast to remove any laticence. Ensure there are no visible bug holes on the surface. If so, patch to fill the holes using suitable materials.

- 3) For **touch-up** areas where sandblasting is not practical, the surface may be prepared by sanding with 60 - 80 grit paper. The surface profile must have an angular anchor pattern/texture. Adjacent, intact coating must be sanded, ground or wire brushed to remove all coating gloss and to provide a rough texture.
- 4) See Madison Application Instructions for details.

B. APPLICATION OF COATING

- 1) Do not apply if temperature is below 10°C (50°F) or if the dew point is within 3°C (5°F) of the temperature. All application and surface preparation should be consistent with good painting practices.
- 2) This is a two component system with a 2:1 mix ratio by volume. Agitate individual components thoroughly before use to disperse pigments and assure homogeneity. Both components (Part A Resin and Part B Hardener) should be between 21°C (70°F) and 32°C (90°F) prior to mixing.
- 3) Pour Part B Hardener into Part A Resin and blend thoroughly using a power agitator, such as a Jiffy mixer and a high strength industrial drill, for 3-5 minutes. To ensure complete mixing, scrape sides and bottom of containers. Incomplete mixing will result in soft spots or color variation. Begin application immediately after mixing. EC-120 may be thinned using Madison VR-4 Reducer to a maximum of 30% by volume.
Note: For compliance to NSF61 (drinking water application requirement) the maximum allowed VR-4 Reducer is 10% by volume and the maximum final coating thickness is 16 mil.
- 4) EC-120 may be applied using a brush, 1/4" or 3/8" nap phenolic core roller, squeegee, or airless spray. When using airless spray it is recommended to use a 45:1 ratio pump, 0.023" - 0.027" orifice tip, and a 3/8" material hose unless more than 50 ft. is required, then use a 1/2" material hose. The total application thickness may vary, depending on expected service conditions (i.e., chemical exposure, temperature, traffic load and other mechanical abuse, immersion service vs. splash-spill, etc.).
- 5) A second coat may be applied over the first, so long as it is applied within the recoat window (see technical information above). Otherwise, roughening of the surface will be necessary to ensure good intercoat adhesion.
- 6) Allow coating to cure completely before putting into service.

C. CLEAN-UP AND STORAGE

Use only Madison's VR-4 Reducer as any other reducer, whether Madison or third party will ruin the product. Store closed container in a cool, dry area. Use product within 12 months of receiving.

HEALTH AND SAFETY

Product is intended for industrial or professional use only. Contents may build up pressure during storage; open with extreme care if can is bulging, thereby allowing gas to escape slowly. Product is non-flammable and is unlikely to cause respiratory irritation or other reactions. However, should someone exhibit a sensitivity, remove the person from the area. Ventilate indoor work spaces well. If spilled on skin, remove immediately with Madison VR-4 Reducer as product is very solvent resistant once it starts to polymerize (cure). If swallowed, do not induce vomiting, as this will cause additional throat irritation; contact physician. MSDS available upon request. Review [Application Instruction Bulletin](#) for further safety information.

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.

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