

Selection & Specification Data

Generic Type	High solids polyamine-epoxy
Description	High solids, epoxy lining that is designed for potable water and wastewater applications. Product is self-priming and is normally applied in two coats.
Features	<ul style="list-style-type: none"> • High solids; Low VOC and HAPs formula • NSF approved for ANSI/NSF Standard 61 for potable water tanks* • Meets the FDA requirements for 21CFR 75.300 for direct food contact • VOC compliant to current AIM regulations • Good chemical resistance • Excellent abrasion resistance • Excellent thermal shock resistance
	*Valid if manufactured at a certified location.
Color	Light Grey (0700), White (0800), and Light Blue (0100). Colors are unmatched and designed for potable water immersion service.
Finish	Semi-Gloss
Primer	Self-priming
Dry Film Thickness	4.0 - 10.0 mils (102 - 254 microns) per coat
	(5-13 wet mils thinned 10%) Can be applied 2 or 3 coats. Do not exceed 20 mils total for potable water.
Solids Content	By Volume 85% +/- 2%
Theoretical Coverage Rate	1363 ft ² at 1 mil (33 m ² /l at 25 microns) 341 ft ² at 4 mils (8 m ² /l at 100 microns) 136 ft ² at 10 mils (3 m ² /l at 250 microns)
	Allow for loss in mixing and application.
VOC Values	Thinner 2 25 oz/gal 1.96 lbs./gal (235 g/l) As Supplied 1.00 lbs./gal (119 g/l)
	These are nominal values
Dry Temp. Resistance	Continuous: 200 °F (93 °C) Non-Continuous: 250 °F (121 °C)
	Discoloration and loss of gloss is observed above 200°F (93°C)
Wet Temp. Resistance	Handles water immersion temperatures up to 150°F
Limitations	Epoxies lose gloss, discolor and eventually chalk in sunlight exposure.

Substrates & Surface Preparation

General	Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating.
Steel	Immersion: SSPC-SP10 Surface Profile: 2-3½ mils (50-88 microns)

Substrates & Surface Preparation

Concrete or CMU Immersion: Concrete must be cured 28 days at 75°F (24°C) and 50% relative humidity or equivalent. Prepare surfaces in accordance with ASTM D4258 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require surfacing.

Performance Data

Test Method	System	Results
Abrasion	ASTM D4060 (CS17 Wheel, 1000 cycles, 1000 g load)	94 mg loss
Thermal Shock	5 cycles (-70° to 200°F)	Unaffected

Mixing & Thinning

Mixing	Power mix separately, then combine and power mix. DO NOT MIX PARTIAL KITS. Requires short 15 min sweat-in time.
Thinning	Thinning will be required to properly atomize the mixed material. Thin up to 20% (25 oz/gal) with Thinner #2. Use of thinners other than those supplied by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.
Ratio	2:1 Ratio (A to B)
Pot Life	1½ Hours at 75°F (24°C) 2 Hours at 60°F (15.5°C) Pot life ends when coating loses body and begins to sag. Pot life times will be less at higher temperatures.

Application Equipment Guidelines

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Conventional Spray	Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap. Adjust air pressure to approximately 50 psi at the gun and provide 10-20 lbs. of pot pressure.
Airless Spray	Pump Ratio: 30:1 (min.) GPM Output: 2.5 (min.) Material Hose: 3/8" I.D. (min.) Tip Size: .017"-.021" Output PSI: 1500-2300 Filter Size: 60 mesh Teflon packings are recommended and available from the pump manufacturer. Apply a "mist" bonding pass. Allow to dry approximately one minute but not long enough to allow film to completely dry. Apply crisscross multipasses, moving gun at fairly rapid rate, maintaining a wet appearing film. Fast multipasses may be applied until you have a film thickness of approximately 4-6 mil/100-150 microns (approximately 5-7 wet mil/125-175 microns). Repeat this procedure for the second coat to obtain an 8-12 mil/200-300 microns DFT. Call Tech. Service for Q&A.

Carboguard® 891 HS

Application Equipment Guidelines

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Brush & Roller (General) Recommended for small areas and repairs only. Use a high quality brush, and apply a very light crisscross brush coat. Allow to dry for approximately 5 minutes. Then apply a heavy coat using a crisscross brush pattern. Normally, a film thickness of 2.5-3 mils (62- 75 microns) can be obtained per coat by this method.

Brush Use a medium bristle brush.

Roller Not recommended.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Minimum	50 °F (10 °C)	50 °F (10 °C)	50 °F (10 °C)	0%
Maximum	90 °F (32 °C)	125 °F (52 °C)	110 °F (43 °C)	80%

This product simply requires the substrate temperature to be above the dew point. Condensation due to substrate temperatures below the dew point can cause flash rusting on prepared steel and interfere with proper adhesion to the substrate. Special application techniques may be required above or below normal application conditions.

Note: Prior to spray application, stripe brush all weld attachments and surface irregularities using Carboguard 891HS thinned a minimum of 50% by volume with Thinner #2.

Curing Schedule

Surface Temp. & 50% Relative Humidity	Dry to Recoat	Final Cure Immersion	Maximum Recoat Time
50 °F (10 °C)	36 Hours	14 Days	30 Days
60 °F (16 °C)	20 Hours	10 Days	21 Days
75 °F (24 °C)	10 Hours	7 Days	14 Days
90 °F (32 °C)	5 Hours	5 Days	7 Days

ANSI/NSF Standard 61 service must have 7 days cure and a 10 hour minimum recoat window. For complete details of our NSF listing visit: <http://www.nsf.org>

These times are based on a 4.0-6.0 mil (150-175 micron) dry film thickness. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure. Excessive humidity or condensation on the surface during curing can interfere with the cure, can cause discoloration and may result in a surface haze. Any haze or blush must be removed by water washing before recoating. If the maximum recoat times have been exceeded, the surface must be abraded by sweep blasting or sanding prior to the application of additional coats. Food-grade exposures require force curing at 225°F for four hours. Raise temperature 30°F for every 30 minutes until temperature is reached. (Other curing temperatures in table below).

METAL TEMPERATURE - CURING TIME

150°F/66°C - 12 Hrs

175°F/79°C - 10 Hrs

200°F/93°C - 6 Hrs

225°F/107°C - 4 Hrs

Cleanup & Safety

Cleanup Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

Safety Read and follow all caution statements on this product data sheet and on the MSDS for this product. Employ normal workmanlike safety precautions.

Ventilation When used as a tank lining or in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator

Packaging, Handling & Storage

Shelf Life Part A: Min. 12 months at 75°F (24°C)
Part B: Min. 6 months at 75°F (24°C)

*Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.

Shipping Weight (Approximate) 1 Gallon Kit - 15 lbs (6.8 kg)
5 Gallon Kit - 75 lbs (34 kg)

Storage Temperature & Humidity 40° - 110°F (4° - 43°C)
0-100% Relative Humidity

Flash Point (Setaflash) Part A: 52°F (11°C)
Part B: 60°F (15.6°C)

Storage Store Indoors.



An **RPM** Company

November 2013

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance or injuries resulting from use. Liability, if any, is limited to replacement of products. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Carboline® and Carboguard® are registered trademarks of Carboline Company.

C572