

## Selection & Specification Data

<b>Generic Type</b>	Cycloaliphatic Amine Epoxy
<b>Description</b>	High solids corrosion resistant primer and intermediate. Used either as a primer or an intermediate coat over steel and inorganic zinc primers. Can be topcoated with a broad variety of high performance finish coats.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Excellent corrosion protection</li> <li>• Excellent film build and edge protection</li> <li>• Used as a primer or an intermediate coating</li> <li>• Good abrasion resistance</li> <li>• Cures down to 40°F</li> <li>• VOC compliant to current AIM regulations</li> </ul>
<b>Color</b>	Red (0500); Gray (0700); White (0800); Yellow (0600)
<b>Finish</b>	Eggshell
<b>Primer</b>	Self-priming. May be applied over organic and inorganic zinc rich primers. A mist coat may be required to minimize bubbling over zinc rich primers.
<b>Dry Film Thickness</b>	3.0 mils (76 microns) per coat 4.0 - 6.0 mils (102 - 152 microns) per coat  3.0 mils for mild environments and as an intermediate coat over inorganic zincs. 4-6 mils for more severe environments. Do not exceed 10.0 mils (250 microns) in a single coat. Excessive film thickness over inorganic zincs may increase damage during shipping or erection.
<b>Solids Content</b>	By Volume 77% +/- 2%
<b>Theoretical Coverage Rate</b>	1235 ft <sup>2</sup> at 1.0 mils (30.3 m <sup>2</sup> /l at 25 microns) 412 ft <sup>2</sup> at 3.0 mils (10.1 m <sup>2</sup> /l at 75 microns) 206 ft <sup>2</sup> at 6.0 mils (5.1 m <sup>2</sup> /l at 150 microns)  Allow for loss in mixing and application.
<b>VOC Values</b>	Thinner 2 16 oz/gal = 2.2 lbs/gal (261 g/l) Thinner 230 13 oz/gal = 2.1 lbs/gal (252 g/l) Thinner 33 32 oz/gal = 2.7 lbs/gal (329 g/l) As Supplied 1.6 lbs/gal (195 g/l)  These are nominal values and may vary slightly with color. *Maximum thinning for 250 g/l restricted areas is 12 oz/gal with Thinner 2, and 11 oz/gal with Thinner 33 or 230. Use Thinner 76 where non-photochemically reactive solvents are required (up to 11 oz/gal)
<b>Dry Temp. Resistance</b>	Continuous: 200 °F (93 °C) Non-Continuous: 250 °F (121 °C)  Discoloration and loss of gloss is observed above 200 F (93 C).
<b>Limitations</b>	Not recommended for immersion service
<b>Topcoats</b>	May be coated with Acrylics, Epoxies, Alkyds, or Polyurethanes depending on exposure and need.

## Substrates & Surface Preparation

<b>General</b>	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.
<b>Steel</b>	SSPC-SP6 with a 1.0-2.0 mil (25-50 micron) surface profile.

## Substrates & Surface Preparation

<b>Galvanized Steel</b>	Prime with specific Carboline primers as recommended by your Carboline Sales Representative. Refer to the specific primer's Product Data Sheet for substrate preparation requirements.
<b>Concrete or CMU</b>	Concrete must be cured 28 days at 75°F (24°C) and 50% relative humidity or equivalent. Prepare surfaces in accordance with ASTM D42582 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require surfacing.

## Performance Data

Test Method	System	Results
ASTM B117 Salt Fog	Blasted Steel 1ct. IOZ 1 ct. 893	No blistering, rusting and no creepage at scribe after 4000 hours
ASTM D 1735 Water Fog	Blasted Steel 1ct. IOZ 1 ct. 893	No blistering softening or rusting after 5000 hours
ASTM D2583 Hardness	Blasted Steel 1 ct. 893	73, Barcol Test, 1 week cure, 5 mils DFT
ASTM D4060 Abrasion	Blasted Steel 1ct. 893	88 mg. loss after 1000 cycles, CS17 wheel, 1000 gm. load
ASTM G26 Weatherometer	Blasted Steel 1ct. IOZ 1 ct. 893	No blistering softening or rusting after 4000 hours

Test reports and additional data available upon written request.

## Mixing & Thinning

<b>Mixing</b>	Power mix separately, then combine and power mix. DO NOT MIX PARTIAL KITS. A 30-minute "sweat-in" time is highly recommended for applications below 50°F and will improve cure response.
<b>Thinning</b>	<p>Spray: Up to 16 oz/gal (12%) w/ Thinner 2 or up to 13 oz/gal (10%) w/ Thinner 230            Brush: Up to 32 oz/gal (25%) w/ Thinner 33            Roller: Up to 32 oz/gal (25%) w/ Thinner 33            Mist coating: Thin up to 32 oz/gal with Thinner 2 or 33 in VOC restricted (2.8lb/gal) areas. May thin up to 48 oz/gal where VOC restricted levels are at 3.5 lb/gal for mist coat only. If necessary, use Thinner 230 only in hot (above 100°F/38°C) and windy conditions, to slow down the evaporation rate. Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied. *See VOC values for thinning limits.            Carboline Thinner 236E or 225E (up to 10% or 13 oz/gal) may also be used to thin this product to minimize HAP and VOC emissions. Consult Carboline Technical Service for guidance.</p>
<b>Ratio</b>	1:1 Ratio (A to B)
<b>Pot Life</b>	4 Hours at 75°F (24°C) Pot life ends when coating loses body and begins to sag. Pot life times will be less at higher temperatures. Thinning rates above 16 oz/gal will shorten the working time to 2 hours.

# Carboguard® 893

## 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.

- Spray Application (General)** This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.
- Conventional Spray** Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap.
- Airless Spray** Pump Ratio: 30:1 (min.)  
GPM Output: 3.0 (min.)  
Material Hose: 3/8" I.D. (min.)  
Tip Size: .017-.021"  
Output PSI: 2100-2300  
Filter Size: 60 mesh  
Teflon packings are recommended and available from the pump manufacturer.
- Brush & Roller (General)** Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling. For best results, tie-in within 10 minutes at 75°F (24°C).
- Brush** Use a medium bristle brush.
- Roller** Use a short-nap synthetic roller cover with phenolic core.

## Application Conditions

Condition	Material	Surface	Ambient	Humidity
Minimum	40 °F (4 °C)	40 °F (4 °C)	40 °F (4 °C)	0%
Maximum	90 °F (32 °C)	135 °F (57 °C)	110 °F (43 °C)	90%

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.

## Curing Schedule

Surface Temp.*	Dry to Handle	Dry to Topcoat	Dry to Touch	Maximum Recoat Time w/ Acrylics	Maximum Recoat Time w/ Epoxies	Maximum Recoat Time w/ Polyurethanes
40 °F (4 °C)	24 Hours	72 Hours	6 Hours	14 Days	30 Days	90 Days
50 °F (10 °C)	16 Hours	24 Hours	5 Hours	14 Days	30 Days	90 Days
60 °F (16 °C)	12 Hours	16 Hours	4 Hours	14 Days	30 Days	90 Days
75 °F (24 °C)	6 Hours	8 Hours	3 Hours	14 Days	30 Days	90 Days
90 °F (32 °C)	3 Hours	4 Hours	2 Hours	14 Days	15 Days	30 Days

These times are based on a 4.0 mil (100 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. During high humidity conditions, it is recommended that the application be done while temperatures are increasing. If the maximum recoat time is exceeded, the surface must be abraded by sweep blasting or sanding before the application of additional coats. When cured below 50 F a slight softening is typically observed as the temperature rises above 50 F and is considered normal.

## 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. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands and all exposed areas.
- Ventilation** When used in enclosed areas and product is thinned, 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. 36 months at 75°F (24°C)  
Part B: Min. 24 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)** 2 Gallon Kit - 29 lbs (13 kg) 10 Gallon Kit - 143 lbs (65 kg)
- Storage Temperature & Humidity** 40° - 110°F (4°-43°C)  
0-90% Relative Humidity
- Flash Point (Setaflash)** Carboguard 893 Part A: 61°F (16°C)  
Carboguard 893 Part B: 59°F (15°C)
- Storage** Store Indoors.

This product is solvent based and not affected by excursions below these published storage temperatures, down to 10°F, for a duration of no more than 14 days. Always inspect the product prior to use to make sure it is smooth and homogeneous when properly mixed.



June 2015

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