

Selection & Specification Data

Generic Type	Polyamido-Amine Epoxy
Description	Dense, highly impermeable glass flake-filled coating used for protecting steel and concrete. This versatile coating provides an impenetrable film for severe exposures in marine, offshore, petrochemical, pulp & paper and other aggressive environments. Optional use of light or course grit fillers provides non-skid properties.
Features	<ul style="list-style-type: none"> ▪ Excellent abrasion resistance ▪ Excellent chemical resistance ▪ Outstanding impermeability ▪ Single coat, self-priming capabilities ▪ VOC compliant to current AIM regulations ▪ Non-skid surface (optional)
Color	Gray (5742) is standard.
Finish	Flat
Primers	Self-priming. May be applied over certain Carboline epoxy holding primers. Contact your Carboline sales representative for specific recommendations.
Topcoats	Polyurethanes for non-immersion applications. Phenolics for upgraded solvent resistance.
Dry Film Thickness	10.0-40.0 mils (250-1000 microns) applied in 1-3 coats depending on service.
Solids Content	By Volume: 88% ± 2%
Theoretical Coverage Rate	1411 mil ft ² (35.0 m ² /l at 25 microns) Allow for loss in mixing and application
VOC Values	As supplied: 0.8 lbs/gal (96 g/l) Thinned: 6 oz/gal w/#213: 1.1 lbs/gal (134 g/l) 19 oz/gal w/#213: 1.6 lbs/gal (200 g/l) These are nominal values and may vary slightly with color.
Dry Temp. Resistance	Continuous: 180°F (82°C) Non-Continuous: 250°F (121°C) Discoloration and loss of gloss is observed above 180°F (82°C).
Limitations	<ul style="list-style-type: none"> ▪ Epoxies lose gloss, discolor and eventually chalk in sunlight exposure. ▪ When modified with non-skid fillers, do not use for immersion service.

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	<u>Immersion:</u> SSPC-SP10 <u>Non-Immersion:</u> SSPC-SP6 <u>Surface Profile:</u> 3.0 mils min. (75 microns)
Concrete	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	Report #
ASTM D4541 Adhesion	Blasted Steel 1 ct. 1209 (16-20 mils dft)	833 psi	08915
ASTM D4060 Abrasion	Blasted Steel 1 ct. 1209 (16-20 mils dft)	88.33 mg loss CS-17 wheel 1,000 gm load after 1,000 cycles	02938
ASTM B117 Salt Fog	Blasted Steel 1 ct. 1209 (16-20 mil dft)	No blistering, rusting, cracking or delamination. Rusting in the scribe less than 1/16" (2mm) after 4000 hours	08915

October 2004 replaces December 2002

1209

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.

Carboguard® 1209

Application Equipment

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.

General Guidelines:

Spray Application (General) The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

Conventional Spray **Note: This is mandatory equipment when non-skid fillers are used.** Bottom Feed pressure pot equipped with dual regulators, mechanical agitator and a water trap. Use 3/4" I.D. minimum material hose with a maximum length of 25', 3/8" I.D. air hose. Use a 1/4" fluid tip with a 1/4" round or slotted internal mix air cap. A Binks 7E2 or similar gun from Graco or DeVilbiss is suggested.

Airless Spray Pump Ratio: 45:1 (min.)
GPM Output: 3.0 (min.)
Material Hose: 1/2" I.D. (min.)
Tip Size: .035-.041"
Output PSI: 2200-2500
Filter Size: Not recommended

Brush Not recommended.

Roller A "nylon loop" roller may be used but will result in a rougher surface with a more pronounced non-skid surface when one of the optional fillers is used. When using a roller, do not pour the material on the surface. Dip the roller into a 5 gallon pail and roll out evenly. Keep the roller wet.

Mixing & Thinning

Mixing Power mix separately, then combine and power mix. When non-skid fillers are used, slowly mix into the mixed materials with the power mixer running. Allow a 15 minute induction time at 75°F (24°C) before application. Mixing time should be considered part of induction time. DO NOT MIX PARTIAL KITS.

Ratio Part A: 3.42 gals. (5 gal. pail)
Part B: 1 gal. (1 gal. pail)
Light Grit Finish: 20 lbs. of Filler 36
Coarse Grit Finish: 20 lbs. of Filler 47

Thinning 6-19 oz/gal with Thinner #213 after induction time. Exact amount of thinner will depend on job site conditions. Add only enough to assure uniform flow. For horizontal application (i.e. Platform decks) only may be thinned with Thinner #2. Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

Pot Life 2 hours at 75°F (24°C)
Pot life ends when coating starts to generate heat or loses film build. Pot life times will be less at higher temperatures.

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. 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.

Cleanup & Safety (cont'd)

Caution

This product exotherms at the end of its pot life. Any unused quantities will become extremely hot and will generate smoke and fumes. This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Normal	60°-95°F (16°-35°C)	60°-95°F (16°-35°C)	60°-95°F (16°-35°C)	35-65%
Minimum	50°F (10°C)	50°F (10°C)	50°F (10°C)	0%
Maximum	100°F (38°C)	120°F (49°C)	100°F (38°C)	95%

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. & 50% Relative Humidity	Dry to Handle	Dry to Topcoat	Maximum Recoat Time	Final Cure
60°F (16°C)	16 Hours	32 Hours		14 Days
75°F (24°C)	8 Hours	16 Hours	7 Days	7 Days
100°F (38°C)	2 Hours	4 Hours		2 Days

These times are based on a 20.0 mil (500 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 before the application of additional coats.

Packaging, Handling & Storage

Shipping Weight (Approximate) 4.42 Gallon Kit 55 lbs (25 kg) Filler 36 22 lbs Filler 47 22 lbs

Flash Point (Setaflash) Part A: 83°F (28°C)
Part B: >200°F (93°C)
Fillers: NA

Storage (General) Store Indoors.

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

Shelf Life Part A & B: Min. 36 months at 75°F (24°C)

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



350 Hanley Industrial Court, St. Louis, MO 63144-1599
314/644-1000 314/644-4617 (fax) www.carboline.com

October 2004 replaces December 2002

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.

An RPM Company