

Selection & Specification Data

Generic Type	Cycloaliphatic Amine Epoxy with Glass Reinforcement		
Description	A glass reinforced chemically resistant epoxy coating with wide versatility in all industrial markets. It is self-priming and suitable for application over tightly adherent rust. Glass reinforcement improves internal film strength, hardness, impact, and abrasion resistance.		
Features	<ul style="list-style-type: none">▪ Excellent chemical resistance▪ Surface tolerant characteristics▪ Conventional and low-temperature versions▪ Self-priming and primer/finish capabilities▪ Excellent abrasion resistance & hardness▪ VOC compliant to current AIM regulations		
Color	Refer to Carboline Color Guide. Certain colors may require multiple coats for hiding. Note: The low temperature formulation will cause most colors to yellow or discolor more than normal in a short period of time. (Epoxies lose gloss, discolor and chalk in sunlight exposure.)		
Finish	Flat		
Primers	Self-priming. May be applied over inorganic zinc primers and other tightly adhering coatings. A mist coat may be required to minimize bubbling over inorganic zinc primers.		
Topcoats	Acrylics, Epoxies, Polyurethanes		
Dry Film Thickness	8.0-20.0 mils (200-500 microns) in a single coat		
Solids Content	By Volume (890 GF):	77% ± 2%	
	(890 LT GF):	81% ± 2%	
Theoretical Coverage Rate	890 GF: 123 ft² at 10 mils (3.1 m²/l at 250 microns) 890 LT GF: 130 ft² at 10 mils (3.1 m²/l at 250 microns) Allow for loss in mixing and application		
VOC Values		890 GF	890 LT GF
	As supplied	1.6 lbs/gal (192 g/l)	1.4 lbs/gal (168 g/l)
	Thinned w/#2 at 13 oz/gal*:	2.1 lbs/gal (252 g/l)	1.9 lbs/gal (230 g/l)
	Thinned w/#33 at 16 oz/gal*:	2.2 lbs/gal (269 g/l)	2.1 lbs/gal (248g/l)
	*Use Thinner #76 up to 8 oz/gal for 890 GF and 16 oz/gal for 890 LT GF where non-photochemically reactive solvents are required.		
Dry Temp. Resistance	Continuous:	250°F (121°C)	
	Non-Continuous:	300°F (149°C)	
	Discoloration and loss of gloss is observed above 200°F (93°C).		

Selection & Specification Data Cont.

Limitations	Do not apply over latex coatings. Carboguard 890 LT should not be used for immersion and should only be used as a primer or intermediate coat. Discoloration may be objectionable if used as a topcoat.
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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	SSPC-SP6 2.0-3.0 mils (50-75 microns) SSPC-SP2 or SP3 are suitable cleaning methods for mild environments.
Galvanized Steel	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.
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. Prime with Carboguard® 1340.
CMU	Mortar joints should be thoroughly cured for a minimum of 15 days at 75°F (24°C) and 50% relative humidity or equivalent. Prime with a suitable block filler or Carboguard 1340.
Drywall & Plaster	Joint compound and plaster should be fully cured prior to coating application. Prime with Carbocrylic® 120 or Carboguard 1340.
Previously Painted Surfaces	Lightly sand or abrade to roughen surface and degloss the surface. Existing paint must attain a minimum 3B rating in accordance with ASTM D3359 "X-Scribe" adhesion test.

Carboguard® 890 & 890 LT Glass Flake

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) 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, .110" 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: .035"-.041"
Output PSI: 2200-2500
*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.

Mixing & Thinning

Mixing Power mix A & B separately, then combine and power mix. Then slowly add the Glass Flake Additive. DO NOT MIX PARTIAL KITS.

Ratio 890 and 890 LT Glass Flake 1:1 Ratio (A to B)
1 bag (3.62 lbs/2 gal mix)

Thinning* Spray: Up to 13 oz/gal (10%) w/ #2
Brush: Up to 16 oz/gal (12%) w/ #33
Roller: Up to 16 oz/gal (12%) w/ #33
Thinner #33 can be used for spray in hot/windy conditions. 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.

Pot Life 890 GF 3 Hours at 75°F (24°C)
890 LT GF 2 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.

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 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.

Caution 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.

June 2006 replaces September 2003

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Application Conditions

890 GF

Condition	Material	Surface	Ambient	Humidity
Normal	60°-85°F (16°-29°C)	60°-85°F (16°-29°C)	60°-90°F (16°-32°C)	0-80%
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%

890 LT GF

Condition	Material	Surface	Ambient	Humidity
Normal	60-85°F (16-29°C)	60-85°F (16-29°C)	60-90°F (16-32°C)	10-80%
Minimum	40°F (4°C)	35°F (2°C)	35°F (2°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.

Curing Schedule

890 GF (Based on 4-8 mils, 100-200 microns dry film thickness.)

Surface Temp. & 50% Relative Humidity	Dry to Recoat	Dry to Topcoat w/ Other Finishes	Final Cure
50°F (10°C)	12 Hours	24 Hours	3 Days
60°F (16°C)	8 Hours	16 Hours	2 Days
75°F (24°C)	4 Hours	8 Hours	1 Day
90°F (32°C)	2 Hours	4 Hours	16 Hours

890 LT GF (Based on 5 mils, 125 microns dry film thickness.)

Surface Temp. & 50% Relative Humidity	Dry to Touch	Dry to Handle	Dry to Recoat & Topcoat w/ Others	Final Cure
35°F (2°C)	5 Hours	18 Hours	20 Hours	7 Days
40°F (4°C)	4.5 Hours	15.5 Hours	16 Hours	5 Days
50°F (10°C)	3.5 Hours	6.5 Hours	12 Hours	3 Days
60°F (16°C)	2 Hours	5 Hours	8 Hours	2 Days
75°F (24°C)	1.5 Hours	2 Hours	4 Hours	24 Hours
90°F (32°C)	1 Hour	1.5 Hours	2 Hours	16 Hours

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. **Maximum recoat/topcoat times are 30 days for epoxies and 90 days for polyurethanes at 75°F (24°C).** 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. 890 LT applied below 50°F (10°C) may temporarily soften as temperatures rise to 60°F (16°C). This is a normal condition and will not effect performance.

Packaging, Handling & Storage

Shipping Weight (Approximate) 2 Gallon Kit
33 lbs (15 kg)

Flash Point (Setaflash) 89°F (32°C) for Part A; 890 GF & 890 LT GF
73°F (23°C) for Part B; 890 GF & 890 LT GF
N/A for Glass Flake Additive

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

Shelf Life: Part A: Min. 36 months at 75°F (24°C)
890 GF & 890 LT GF 890 GF Part B: Min. 15 months at 75°F (24°C)
890 LT GF Part B: Min. 15 months at 75°F (24°C)
Glass Flake Additive - 60 months at 75°F (24°C)

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



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