Carboguard® 890

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Cycloaliphatic Amine Epoxy
Description	Highly chemical resistant epoxy mastic coating with exceptionally versatile uses in all industrial markets. Self-priming and suitable for application over most existing coatings, and tightly adherent rust. Serves as stand-alone system for a variety of chemical environments and is also designed for various immersion conditions. An optional micaceous iron oxide additive (MIO Filler) can be purchased separately and may be used per the Product Data Sheet to enhance corrosion protection and film strength for more aggressive service such as severe marine or heavy industrial uses.
Features	• Excellent chemical resistance • Surface tolerant characteristics • Conventional and low-temperature versions • Self-priming and primer/finish capabilities • Very good abrasion resistance • VOC compliant to current AIM regulations • Suitable for use in USDA inspected facilities • Intermediate coat for AWWA D102 Outside System #6 and #7 • Approved MPI #98 For specific performance data, please contact your Carboline sales representative.
Color	C900 (Black), S800 (White), C703 (Grey), C705 (Light Grey), 0500 (Tile Red), 5555 (Safety Red), 0200 (Tan), 6666 (Safety Yellow), 1675 (Ignition Yellow) Other colors may be available on request. Contact your Carboline Representative for availability. Note: The low temperature formulation will cause most colors to yellow or discolor more than normal in a short period of time.
Finish	Gloss
Primer	Self-priming.
Dry Film Thickness	4 - 6 mils (102 - 152 microns) per coat 6.0-8.0 mils (150-200 microns) over light rust and for uniform gloss over inorganic zincs. Don't exceed 10 mils (250 microns) in a single coat. Excessive film thickness over inorganic zincs may increase damage during shipping or erection.
Solids Content	By Volume 75% +/- 2%
Theoretical Coverage Rate	1203 ft²/gal at 1.0 mils (29.5 m²/l at 25 microns) 301 ft²/gal at 4.0 mils (7.4 m²/l at 100 microns) 200 ft²/gal at 6.0 mils (4.9 m²/l at 150 microns) Allow for loss in mixing and application.
VOC Values	**As Supplied** : 1.81 lbs/gal (217 g/l) Thinner 2 : 13 oz/gal (106.8 mg/ml) = 2.30 lbs/gal (276 g/l) Thinner 33 : 16 oz/gal (131.5 mg/ml) = 2.43 lbs/gal (291 g/l) Thinner 33 : 7 oz/gal (57.5 mg/ml) = 2.08 lbs/gal (250 g/l) Thinner 2 : 7 oz/gal (57.5 mg/ml) = 2.08 lbs/gal (250 g/l) Use Thinner 76 up to 8 oz/gal for 890 and 16 oz/gal for 890 LT where non-photochemically reactive solvents are required. These are nominal values and may vary with color.

SELECTION & SPECIFICATION DATA

Dry Temp. Resistance	Continuous: 300°F (149°C) Non-Continuous: 350°F (177°C) Discoloration and loss of gloss occurs above 200°F (93°C) but does not affect performance.
Under Insulation Resistance	Continuous: 300°F (149°C) Discoloration and loss of gloss occurs above 200 F (93 °C) but does not affect performance.
Limitations	Do not apply over latex coatings. For immersion projects use only factory made material in special colors. Epoxies may lose gloss, discolor, and chalk when exposed to sunlight. Consult Technical Service for specifics.
Topcoats	• Acrylics • Epoxies • Polyurethanes

SUBSTRATES & SURFACE PREPARATION

General	Surfaces must be clean and dry. Remove all dirt, dust, oil and all other contaminant.
Steel	**Immersion:** SSPC-SP10 **Non-immersion:** SSPC-SP6 1.5-3.0 mils (38-75 microns) *SSPC-SP2 or SP3 are suitable cleaning methods for mild environments.* When using under fireproofing products, defer to the primer surface preparation requirements in the product data sheet of the fireproofing product.
Concrete or CMU	Concrete shall be designed, placed, cured, and prepared per NACE No. 6/SSPC-SP 13, latest edition. This includes abrading to remove all laitance, loose concrete, etc. and to create the surface profile required for the coating system to be used. The concrete shall be considered cured sufficiently for coating when it passes the moisture tests.
Drywall & Plaster	Joint compound and plaster should be fully cured prior to coating application.
Previously Painted Surfaces	Lightly sand or abrade to roughen surface and degloss the surface. Existing paint must attain a minimum 3A rating in accordance with ASTM D3359 “X-Cut” adhesion test.
Non-Ferrous Metals	Surface profile should be a dense angular 1.5 - 3 mils and is best achieved through abrasive blasting in accordance with SSPC-SP16 for atmospheric exposure, or SSPC-SP17 for immersion environments.

PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	System	Results
ASTM B 117 Salt Fog	Blasted Steel 2 cts. 890	No effect on plane, rust in scribe. 1/16" (0.16 cm) undercutting at scribe after 2000 hours
ASTM B117 Salt Fog	Blasted Steel 1 ct. IOZ 1 ct 890	No effect on plane, no rust in scribe and no undercutting after 4000 hours
ASTM D 4060 Abrasion	Blasted Steel 1 ct Epoxy Pr. 1 ct 890	85 mg. loss after 1000 cycles, CS17 wheel 1000 gm. load
ASTM D1735 Water Fog	Blasted Steel 1 ct. Epoxy Pr. 1 ct. 890	No blistering, rusting or delamination after 2800 hours
ASTM D2486 Scrub Resistance	Blasted Steel 1 ct. 890	93% gloss retained after 10,000 cycles w/liquid scrub medium
ASTM D3359 Adhesion	Blasted Steel 1 ct 890	5A
ASTM D3363 Pencil Hardness	Blasted Steel 2 cts 890	Greater than 8H
ASTM E84 Flame and Smoke	2 ct 890	5 Flame 5 Smoke Class A

MIXING & THINNING

Mixing

Power mix separately, then combine and power mix. DO NOT MIX PARTIAL KITS.

Thinning

Preferred Thinner Uses and Application:
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.
Mist coating: Thin up to 32 oz/gal (263 g/l) with Thinner 2 or 33 in VOC restricted (2.8 lb/gal) areas. May thin up to 48 oz/gal where VOC restricted levels are at 3.5 lb/gal (0.42 kg/l) 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.
Alternate Compatible Thinners for Atmospheric Service:
Carboline Thinner 2, 10, 15, 76, 225E, 229, 236E, 243E, 248 and Plasite Thinner #19 or #20

Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

Ratio

1:1 Ratio (A to B)

Pot Life

3 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.

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.

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Conventional Spray	Pressure pot equipped with dual regulators, 3/8” (0.95 cm) I.D. minimum material hose, 0.070” (0.18 cm) 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. (0.95 cm)(min.) Tip Size: 0.017-0.021” (0.04-0.05 cm) Output PSI: 2100-2300 Filter Size: 60 mesh *PTFE 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 rerolling. For best results, tie-in within 10 minutes at 75°F (24°C).
Brush	Use a medium bristle brush.
Roller	Use a short-nap solvent resistant roller cover.

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)	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 Recoat	Dry to Topcoat w/ Other Finishes	Final Cure General	Final Cure Immersion
50°F (10°C)	12 Hours	24 Hours	3 Days	NR
60°F (16°C)	8 Hours	16 Hours	2 Days	10 Days
75°F (24°C)	4 Hours	8 Hours	1 Day	5 Days
90°F (32°C)	2 Hours	4 Hours	16 Hours	3 Days

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. Recoat intervals may vary from those listed above when using under intumescent fireproofing products. Consult Carboline Technical Service for recommended cure times before applying Carboline intumescent products. **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.

CLEANUP & SAFETY

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

CLEANUP & SAFETY

Safety	Read and follow all caution statements on this product data sheet and on the SDS. Employ normal workmanlike safety precautions. Keep container closed when not in use.
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. User should test and monitor exposure levels to insure all personnel are below guidelines.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 36 months at 75°F (24°C) Part B: 12 months at 75°F (24°C) *When kept at recommended storage conditions and in original unopened containers.
Storage Temperature & Humidity	40-120 °F (4-49 °C) Store indoors Can be stored down to 20 °F (-7 °C) for no longer than 30 days 0-100% Relative Humidity
Storage	Store Indoors
Shipping Weight (Approximate)	2 Gallon Kit - 29 lbs (13 kg) 10 Gallon Kit - 145 lbs (66 kg)
Flash Point (Setaflash)	89 °F (32 °C) for Part A 73 °F (23 °C) for Part B

WARRANTY

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, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. 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. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.