Carboguard® 890 GF2

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Cycloaliphatic Amine Epoxy with Glass Reinforcement
Description	A two-component, glass reinforced epoxy coating. 890 GF2 is chemical resistant and has a wide range of uses in industrial environments. Its glass reinforcement allows for excellent internal film strength, hardness, impact, and abrasion resistance. Most commonly, it is used in severe service (above or below the water line) in marine applications where these resistance qualities are desired.
Features	• Convenient two-component mix • Excellent chemical resistance • Surface tolerant characteristics for less severe applications • Self-priming and primer/finish capabilities • Excellent abrasion resistance & hardness • VOC compliant to current AIM regulations
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.
Finish	Flat
Primer	Normally self-priming. May be applied over other epoxy primers.
Dry Film Thickness	8 - 20 mils (203 - 508 microns) per coat
Solids Content	By Volume 75% +/- 2%
Theoretical Coverage Rate	1203 ft²/gal at 1.0 mils (29.5 m²/l at 25 microns) 150 ft²/gal at 8.0 mils (3.7 m²/l at 200 microns) 60 ft²/gal at 20.0 mils (1.5 m²/l at 500 microns) Allow for loss in mixing and application.
VOC Values	**As Supplied** : 1.7 lbs/gal (204 g/l) Thinner 2 : 13 oz/gal: 2.2 lbs/gal (264 g/l) Thinner 33 : 16 oz/gal: 2.3 lbs/gal (276 g/l) *Use Thinner 76 up to 8 oz/gal for 890 GF2 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)
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. Discoloration may be objectionable if used as a topcoat. Epoxies may lose gloss, discolor and chalk when exposed to sunlight.
Topcoats	May be coated with Acrylics, Epoxies, or Polyurethanes depending on exposure and need.

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 Profile: 3.0-4.0 mils (75-100 microns) Non-Immersion: SSPC-SP6 Profile: 2.0-3.0 mils (50-75 microns) SSPC-SP2 or SP3 are suitable cleaning methods for mild (non-immersion) environments.
Galvanized Steel	Abrasive blast to achieve a minimum 2-3 mils (50-75 microns) profile.
Concrete or CMU	Concrete shall be designed, placed, cured, and prepared per NACE No. 6/SSPC-SP 13, latest edition. Abrade to remove all laitance, loose concrete, etc. and to create surface profile in accordance with the appropriate ICRI CSP 2-5.

MIXING & THINNING

Mixing	Power mix Carboguard 890 Part A & Carboguard 890 GF2 Part B separately, then combine and power mix. DO NOT MIX PARTIAL KITS.
Thinning	Spray: Up to 13 oz/gal (10%) with Thinner 2 Brush: Up to 16 oz/gal (12%) with Thinner 33 Roller: Up to 16 oz/gal (12%) with Thinner 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.
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.
Conventional Spray	Pressure pot equipped with dual regulators, 3/8” I.D. minimum material hose, 0.110” 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: 0.035”-0.041” Output PSI: 2200-2500 *PTFE packings are recommended and available from the pump manufacturer.

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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 solvent resistant core.

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.

CURING SCHEDULE

Surface Temp.	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

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.

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 SDS for this product. 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. 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

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, workers should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 36 months at 75 °F (24 °C) Part B: 15 months at 75 °F (24 °C) *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
Storage Temperature & Humidity	40-110 °F (4-43 °C) 0-100% Relative Humidity
Storage	Store Indoors.
Shipping Weight (Approximate)	2 Gallon Kit - 30 lbs (15 kg) 10 Gallon Kit - 150 lbs (68 kg)
Flash Point (Setaflash)	Part A: 89 °F (32 °C) Part B: 73 °F (23 °C) Mixed: 78 °F (26 °C)

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 to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. 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. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.