

SELECTION & SPECIFICATION DATA

Generic Type	Cross-Linked Epoxy with Glass Reinforcement
Description	A glass reinforced chemically resistant epoxy coating with wide versatility in all industrial markets. It is self-priming. Glass reinforcement improves internal film strength, hardness, impact, and abrasion resistance. It is often used in severe service (above or below the water line) in marine applications where these resistance qualities are desired.
Features	• Excellent chemical resistance • Surface tolerant characteristics for less severe applications • Conventional and low-temperature versions • Self-priming and primer/finish capabilities • Excellent abrasion resistance & hardness • VOC compliant to current AIM regulations • Non-skid service with optional fillers
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
Primer	Normally self-priming. May be applied over Carboguard 890 and other epoxy primers.
Dry Film Thickness	203 - 508 microns (8 - 20 mils) per coat
Solids Content	By Volume 81% +/- 2%
Theoretical Coverage Rate	31.9 m ² /l at 25 microns (1299 ft ² /gal at 1.0 mils) 4.0 m ² /l at 200 microns (162 ft ² /gal at 8.0 mils) 1.6 m ² /l at 500 microns (65 ft ² /gal at 20.0 mils) Allow for loss in mixing and application.
VOC Values	As Supplied : 1.4 lbs/gal (168 g/l) Thinner 2 : 13 oz/gal: 1.9 lbs./gal (230 g/l) Thinner 213 : 13 oz/gal: 1.84 lbs/gal (221 g/l) Thinner 33 : 16 oz/gal: 2.1 lbs/gal (248 g/l) Use Thinner 76 up to 16 oz per gallon where on-photochemically reactive solvents are required.
Dry Temp. Resistance	Continuous: 121°C (250°F) Non-Continuous: 149°C (300°F) Discoloration and loss of gloss observed above 200°F (93°C)
Limitations	Do not apply over acrylic or alkyd coatings. Carboguard 890 LT should not be used for immersion and it is suggested to be used as a primer and/or intermediate coat due to discoloration during cure. If discoloration is objectionable it may be top coated.
Topcoats	May be coated with acrylics, epoxies or polyurethanes depending upon 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.
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SUBSTRATES & SURFACE PREPARATION

Steel	Non-Immersion: NACE No. 3/SSPC-SP6 Profile: 2.0-3.0 mils (50-75 microns) SSPC-SP2, SP3 or SP15 are suitable cleaning methods for mild (non-immersion) environments and touch up.
Galvanized Steel	Abrasive blast as per SSPC-SP16 to achieve a minimum 2-3 mils (50-75 microns) profile.
Concrete or CMU	NACE No. 6/SSPC-SP13 and create surface profile of ICRI CSP 3 to 4.
Previously Painted Surfaces	Lightly abrade to remove gloss and roughen surface. Existing paint must attain a minimum 3A rating in accordance with ASTM D3359 "X-Cut" adhesion test.

MIXING & THINNING

Mixing	Power mix A & B separately, then combine and power mix. Then slowly add the Glass Flake Additive and power mix for 3-5 minutes. DO NOT MIX PARTIAL KITS.
Thinning	Spray: Up to 13 oz/gal (10%) w/ #2 Brush: Up to 16 oz/gal (12%) w/ #33 Vertical Surfaces: Up to 13 oz/gal (10%) w/ #213, #2 or #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) plus 1 bag (3.62 lbs/2 gal mix)
Pot Life	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.

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, Graco and WIWA.
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: .025"-.035" 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.

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Brush | Use a medium bristle brush for touch up and striping of welds only.

Roller | Not recommended.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	4°C (40°F)	2°C (35°F)	2°C (35°F)	0%
Maximum	32°C (90°F)	52°C (125°F)	43°C (110°F)	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 Recoat & Topcoat w/ other finishes	Dry to Touch	Final Cure General
2°C (35°F)	18 Hours	20 Hours	5 Hours	7 Days
4°C (40°F)	15.5 Hours	16 Hours	5 Hours	5 Days
10°C (50°F)	7 Hours	12 Hours	3.5 Hours	3 Days
16°C (60°F)	5 Hours	8 Hours	2 Hours	2 Days
24°C (75°F)	2 Hours	4 Hours	1.5 Hours	24 Hours
32°C (90°F)	1.5 Hours	2 Hours	1 Hour	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 affect performance.

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. 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.

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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.
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PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 36 months at 75°F (24°C) Part B: 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.
Storage Temperature & Humidity	40° -110°F (4°-43°C) 0-100% Relative Humidity
Storage	Store Indoors.
Shipping Weight (Approximate)	2.181 Gallon Kit - 33 lbs (15 kg)
Flash Point (Setaflash)	Part A: 89°F (32° C) Part B: 73°F (23°C) N/A for Glass Flake Additive Mixed: 80°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.