Carboguard® 60 LH

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Epoxy Polyamide
Description	Carboguard 60 LH is a high solids, versatile corrosion resistant coating. It can be used as a primer, intermediate coat, or self-priming finish over steel or inorganic zinc primers. May be topcoated with itself, or a broad variety of high performance finish coats. This product has excellent wetting properties giving it the capability of going over marginally prepared substrates. It is ideal for maintenance and fabrication shop applications. It is suitable for immersion conditions in fresh and salt water (pre-qualified for NORSOK M501 System 7B). Meets IMO performance for ballast tanks for marine vessels. An optional Glass Flake (GF) additive or micaceous iron oxide (MiO) additive can be purchased separately and may be used to enhance film strength for more abusive applications for severe marine or heavy industrial uses. See separate data sheets.
Features	• Versatile epoxy for atmospheric or immersion exposures • Outstanding corrosion protection in marine/sea water environments • Meets IMO Performance Standard for Protective Coatings MSC.215 (82): 2006 for sea water ballast tanks • Excellent film build and edge protection • Self-priming system • Ready to apply after mixing; (no sweat-in time) • Low HAPs content
Color	Refer to Carboline Color Chart. When MiO fillers are used, colors will shift to the grey.
Finish	Semi-Gloss
Primer	Self-priming. May be applied over zinc rich primers in atmospheric exposures. A mist coat may be required to minimize bubbling over inorganic zinc rich primers.
Dry Film Thickness	3 - 10 mils (76 - 254 microns) As an intermediate 5 - 10 mils (127 - 254 microns) As a direct-to-metal 7 - 10 mils (178 - 254 microns) When used subsea Do not exceed 10 mils in a single coat.
Solids Content	By Volume 73% +/- 2%
Theoretical Coverage Rate	1171 ft²/gal at 1.0 mils (28.7 m²/l at 25 microns) 390 ft²/gal at 3.0 mils (9.6 m²/l at 75 microns) 117 ft²/gal at 10.0 mils (2.9 m²/l at 250 microns) Allow for loss in mixing and application.
VOC Values	**As Supplied** : 2.04 lbs./gal (244 g/l) Thinner 229 : 13 oz/gal: 2.51 lbs/gal (300 g/l) Thinner 236 E : 13 oz/gal: 2.04 lbs/gal (244 g/l) Thinner 33 : 15 oz/gal: 2.6 lbs/gal (312 g/l) Thinner 76 : 13 oz/gal: 2.46 lbs/gal (294 g/l) These are nominal values and may vary slightly with color.
Dry Temp. Resistance	Continuous: 300°F (149°C) Prolonged exposure above 200°F/93°C may cause discoloration (darkening), but will not affect performance.

SELECTION & SPECIFICATION DATA

Limitations	RTS colors and the use of Additive 8505 with this product are not recommended for immersion. Additive 8505 will cause discoloration of this product, but will not affect product performance. Epoxies may lose gloss, discolor and chalk when exposed to sunlight.

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	For most applications: Immersion: SSPC-SP10 Non-immersion: SSPC-SP6 1.5-3.0 mils (38-75 microns)
Concrete or CMU	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.
Previously Painted Surfaces	SSPC-SP2 or SP3

MIXING & THINNING

Mixing	Power mix separately, then combine and power mix. Allow mixed product 15 minute sweat in time before thinning if material is under 70°F. No sweat in needed above 70°F DO NOT MIX PARTIAL KITS. For GF or MiO additives, slowly add while mixing.
Thinning	Spray: Up to 13 oz/gal (10%) with Thinner 76. For higher temperatures use Thinner 229. Brush & Roller: Up to 13 oz/gal with Thinner 33. 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	By Volume: 1:1 Ratio (Part A to Part B)
Pot Life	4 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. Carboline Additive 8505 can be used to aid the film forming process in the product for temperatures down to 35°F. Carboline Additive 8505 is added at a rate of 4 oz per mixed two gallon kit or 20 oz per mixed ten gallon kit. Allow mixed product 15 minute sweat in time before thinning, if material is under 70°F, and 24 hrs cure prior to topcoating for surface temperatures down to 40°F. At this addition rate, Additive 8505 will accelerate the cure rate of the epoxy product and reduce the pot life of the product.

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.

Conventional Spray	Pressure pot equipped with dual regulators, 3/8” I.D. minimum material hose, .070” I.D. fluid tip and appropriate air cap. For filler additives use a 0.110" I.D. fluid tip.

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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.

Airless Spray	Pump Ratio: 30:1 (min.)* GPM Output: 2.5 (min.) Material Hose: 3/8” I.D. (min.) Tip Size: 0.017”-0.021” (0.035"-0.041" for filler additives) Output PSI: 2100-2500 Filter Size: 60 mesh (remove mesh for filler additives)
Brush & Roller (General)	Not recommended for tank lining applications except when striping welds. 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). The addition of GF or MiO fillers is best applied by spray application.
Brush	Use a medium bristle brush.
Roller	Use 3/8” nap solvent resistant roller.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	50°F (10°C)	40°F (4°C)	40°F (4°C)	0%
Maximum	90°F (32°C)	140°F (60°C)	120°F (49°C)	85%

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 Touch	Dry to Handle/ Recoat w/ Itself	Dry to Topcoat w/ Other Finishes	Maximum Recoat Time
40°F (4°C)	3 Hours	30 Hours	48 Hours	1 Year
50°F (10°C)	2 Hours	20 Hours	24 Hours	1 Year
60°F (16°C)	1 Hour	8 Hours	10 Hours	1 Year
75°F (24°C)	45 Minutes	5 Hours	7 Hours	1 Year
90°F (32°C)	30 Minutes	3 Hours	4 Hours	1 Year

These times are based on a 5.0 mil (125 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 humiditiy 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. 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. For force curing, contact Carboline Technical Service for specific requirements.

CLEANUP & SAFETY

Cleanup	Use Thinner 76 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.

CLEANUP & SAFETY

Ventilation	When used 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 respirator.

PACKAGING, HANDLING & STORAGE

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.
Storage Temperature & Humidity	40° - 100°F (4°- 37.8°C) 0-100% Relative Humidity
Storage	Store Indoors.
Shipping Weight (Approximate)	10 Gallon Kit 135 lbs. (61.2 kg)
Flash Point (Setaflash)	Part A: 82°F (27.8°C) Part B: 65°F (18.9°C) Mixed: 71°F (22°C)

WARRANTY

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