

SELECTION & SPECIFICATION DATA

Generic Type	Modified epoxy
Description	A high-build, modified epoxy lining with good overall chemical resistance and versatility. It can be used as a "caulk" for application in tanks for transition areas, floors and walls, lap welds, pitted steel, bolts, etc. It is ideal for the relining or reconditioning of older tanks. It has excellent flexibility and its spray-applied capability (plural component) makes it unique over other similar products that usually require hand lay-up/trowel application. Carboguard 163 can be used as a barrier coat for concrete or steel surfaces that are exposed to moderately corrosive environments. Applications include floors, piping, storage, tanks, and process vessels in oil refineries, chemical processing, and wastewater treatment plants.
Features	<ul style="list-style-type: none"> • Excellent adhesion to prepared steel & concrete surfaces • Excellent abrasion resistance • Excellent flexibility; will withstand the expansion and contraction effect encountered in large storage/processing facilities • Does not require a primer or a topcoat (self-priming) • Designed for application using plural component, airless spray equipment • Versatile Application with both Plural Component or Standard Airless Spray Equipment • May be applied via batch mixing with care
Color	Blue (0100)
Primer	Self-priming
Dry Film Thickness	150 - 175 mils (3810 - 4445 microns) per coat As needed; May be applied up to ½" (500 mils) in a single coat horizontally.
Solids Content	By Volume 100% +/- 0%
Theoretical Coverage Rate	1604 ft ² /gal at 1.0 mils (39.4 m ² /l at 25 microns) 11 ft ² /gal at 150.0 mils (0.3 m ² /l at 3750 microns) 9 ft ² /gal at 175.0 mils (0.2 m ² /l at 4375 microns) Allow for loss in mixing and application.
VOC Values	As Supplied : Calculated: 0 lbs/gal (1 g/L)
Limitations	Epoxies lose gloss, discolor, and eventually chalk in sunlight exposure.
Topcoats	Depends on exposure. Consult Carboline Technical Service.

SUBSTRATES & SURFACE PREPARATION

General	All surfaces must be thoroughly cleaned to remove dirt, grease, mill scale, loose rust, and any other contaminants that can reduce adhesion.
Steel	Immersion: SSPC-SP5 Non-Immersion: SSPC-SP6 Surface Profile: 3.0-4.0 mils (38-75 microns)
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 4-7.

MIXING & THINNING

Mixing	PLURAL COMPONENT SPRAY EQUIPMENT IS RECOMMENDED FOR APPLICATION. Airless and batch mix is also an option. When applying by squeegee, trowel, roller, or brush, and batch mixing power mix each component separately, then combine and power mix.
Thinning	Not Recommended.
Ratio	2:1 Ratio by volume (Part A to Part B)
Pot Life	20–30 minutes at 75 °F (24 °C) material temperature allowing for batch mix application. Pot life ends when coating exotherms and begins to gel. 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.

Airless Spray	Airless spray equipment capable of 6000 psi (minimum 65:1 airless pump) is required for the application of this material. Recommended tip size is 0.425-0.435". Contact Carboline Technical Service for additional information. Plural component equipment may also be used if the material can not be sprayed within the working time of the mixed material. Note: To facilitate spray application when starting up, condition the spray hose to the same temperature as the material.
Plural Component	(1) Proportioning pump set inbound and outbound sides (2) 220 volt in-line heaters. (2) Band heaters. May be needed to pre-heat the material, dependi used. (2) 5:1 ratio transfer pumps. 23:1 ratio solvent flush pump with reservoir Insulated airless material hose bundle or insulated heat traced airless material hose bundle, depending temperatures. Hose I.D.'s shall be 3/8" minimum. Mix manifold with a 12-element static mixer, 25 feet of 1/4" I.D. airless whip hose to a standard airless gun with a second 6-element static mixer and a standard airless gun with a 0.025 - 0.031" reversible spray tip. Each equipment supplier has a number of different systems that may change or modify these basic components. Contact their offices or Carboline Company for more detailed information. Equivalent equipment can be substituted if it is proven an acceptable application.
Brush & Roller (General)	Squeegee, Trowel, Roller, or Brush Recommended for small jobs, touch up work and forming of material after spraying. When applying to concrete, these are useful tools for working the material into voids, honeycombed areas, etc.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	95°F (35°C)	50°F (10°C)	50°F (10°C)	0%
Maximum	140°F (60°C)	110°F (43°C)	100°F (38°C)	85%

For non-spray applications, the normal material temperature is 75 °F (24 °C) and the minimum is 60 °F (16 °C). **Do not apply when the surface temperature is less than 5 °F (3 °C) above the dew point.** To reduce outgassing when applying to concrete substrates, do not apply in direct sunlight or when surface temperatures are increasing. Best results are obtained when ambient and surface temperatures are decreasing or constant. Special application techniques may be required above or below normal application conditions.

CURING SCHEDULE

Surface Temp.	Final Cure	Maximum Recoat
50°F (10°C)	NR	72 Hours
60°F (16°C)	12 Days	48 Hours
75°F (24°C)	6 Days	24 Hours
90°F (32°C)	3 Days	12 Hours

*Surface temperatures reported were at 50 % RH. These times are based on a 25 mil (625 micron) dry film thickness and consistent ambient conditions as stated. In practice, it may be difficult to maintain consistent curing temperatures which may and will affect the dry times as stated. Should the curing temperatures deviate during the curing cycle it is recommended to follow the dry times as stated for the lower ambient temperature reached. 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 blush or haze. If the maximum recoat time has 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 76. 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. Use adequate ventilation and wear gloves or use protective cream on face and hands. Keep container closed when not in use.
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: 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 (4-43 °C) 0-95% Relative Humidity
Storage	Store Indoors.
Shipping Weight (Approximate)	900 ml. dual cartridges 6 per box(1.4 gal. total) 17 lbs (8kg) 1 1/2 Gallon Kit - 17 lbs (8 kg) 15 Gallon Kit - 167 lbs (76 kg) 150 Gallon Kit - 1711 lbs (778 kg)
Flash Point (Setaflash)	Part A: >200 °F (93 °C) Part B: >200 °F (93 °C)

Carboguard[®] 163

PRODUCT DATA SHEET



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.