Carboguard® 510

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Water-based epoxy primer and cementitious mortar
Description	An economical water-based epoxy primer or resurfacing compound that exhibits excellent bond strength to concrete and other masonry surfaces. As a mortar it is ideally suited for patching spalled concrete, filling large cracks, or as a coving and sloping material for floor-wall transitions. As a primer it exhibits excellent bond strength to concrete and other masonry surfaces while reducing or eliminating outgassing. See mixing instructions below for use as a primer or mortar.
Features	• Epoxy modification improves chemical resistance for wastewater environment • Water based, low odor • Can be used if the substrate is saturated surface damp or "SSD" • Excellent film strength, abrasion, and impact resistance • Is castable, making it suitable for restoring pump foundations • Easily topcoated to provide additional chemical resistance or appearance • Used as a primer by mixing Parts A and B only - no sand, cement or aggregates • Topcoated with Carboline's lining systems provides protection from H_2S or MIC
Color	Gray When used as primer, it applies as translucent white and dries clear.
Primer	Use as a primer on concrete and masonry surfaces by mixing only Part A and Part B together - do not add sand, Portland cement, or pea gravel.
Dry Film Thickness	1 - 2 mils (25 - 51 microns) per coat 250 - 500 mils (6350 - 12700 microns) per coat Normal 1/4-1/2 inch per coat to resurface substrate. May be applied up to 2 inches (50800 microns) as required to fill voids.
Spreading Rate	~32% solids by volume As Primer : 250-500 sq ft/per gallon As a mortar, 3-gal kit with aggregate blend: 40 square feet @.5" thick
VOC Values	**As Supplied** : < 0.10 lbs/gal (12 g/L) **EPA Method 24** (calculated minus water and exempt solvents)
Limitations	Epoxies may lose gloss, discolor and chalk when exposed to sunlight. Not for use under vinyl ester or polyester materials
Topcoats	May be coated with Epoxies, Polyurethanes, or Epoxy-Novolacs 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.

SUBSTRATES & SURFACE PREPARATION

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 4-9.

PERFORMANCE DATA

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

Test Method	System	Results
Abrasion Resistance Tabor Abrador CS-17 Wheel	Carboguard 510	0.09 mg
ASTM C-109 Compressive Strength	Carboguard 510	5840 psi
ASTM C-190 Tensile Strength	Carboguard 510	865 psi
ASTM C-348 Flexural Strength	Carboguard 510	1840 psi
Dynamometer Adhesion to concrete	Carboguard 510	350 psi

*Tested as a mortar

MIXING & THINNING

Mixing	**Primer:** power mix Parts A and B separately and then power mix them together until thoroughly mixed. Do not add sand, Portland cement, or aggregate. **Cementitious mortar:** apply within 4 hours of priming. Power mix Part A and Part B separately and then power mix them together until thoroughly mixed. Premix sand, Portland cement, and pea gravel (if needed) before combining and thoroughly mixing with the previously mixed Part A and Part B. A horizontal blade mortar mixer is recommended. While it is not always needed, up to 2oz of water can be added per mixed gallon of material to aid in workability.

MIXING & THINNING

Ratio

1:2
½ Cubic foot kit (for voids, bug holes)
Part A: 0.38 gal. (3.4 lbs.)
Part B: 0.77 gal. (6.2 lbs.)
Part C: Consists of Sand #40-80 angular mesh: 39 lbs. and Portland Cement (Type 1): 11 lbs.
3 Gallon Kit (for filling up to .5" thick)
Part A: 1 gallon (8.8 lbs.)
Part B: 2 gallon (16. lbs.)
Sand #30-50 angular mesh or similar*: 75-150 lbs. depending on the desired consistency for the work being performed.
Portland Cement (Type 1)*: 42 lbs.
3 Gallon Kit (for patching over 1" thick)
Part A: 1 gallon (8.8 lbs.)
Part B: 2 gallon (16. lbs.)
Sand #30-50 angular mesh*: 50 lbs.
Portland Cement (Type 1)*: 42 lbs.
Pea Gravel ¼"*: 100 lbs.
Volume Yield: 1.66 cubic feet
Sand, cement and pea gravel for 3 and 15 gallon kits are not supplied by Carboline and should be bought locally.
Note: In thicknesses over 2", up to 15% additional pea gravel can be added to further extend volume by 5%. Components listed are for 3 gallon kit. Scale up appropriately for 15 gallon kit. Apply to the surface using rubber float or other suitable spreading tool.

***Liquid components A & B only.**

Pot Life

60 minutes at 75 °F (24 °C)

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.

General

As a Primer Carboguard 510 may be rolled or sprayed and backrolled using a garden sprayer.

As a mortar Carboguard 510 be applied using conventional concrete placing and finishing tools.

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. Special application techniques may be required above or below normal application conditions. Note: When conditions such as excessive wind and high ambient temperatures exist, cover the area with polyethylene sheeting.

CURING SCHEDULE

Surface Temp.	Set Time	Light Traffic	Heavy Traffic	Final Cure General
75°F (24°C)	12 Hours	24 Hours	48 Hours	28 Days

As a primer this can generally be recoated in 1 hour or as soon as it turns clear.
These times are based on ½" thickness at 70 °F (21 °C). Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times. 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.
When using Carboguard 510 as an underlayment for epoxy, epoxy-novolac, or polyurethane coatings, it will be necessary to allow the Carboguard 510 to cure a minimum of 24 hours for every 2 inches of thickness. It is recommended that the Carboguard 510 have surface roughness or profile as designated by the topcoat to maximize inter-coat adhesion. The maximum recoat time without surface preparation is 7 days at 85 °F. Always take precautions to prohibit the surface from becoming contaminated prior to application of topcoating; it will be necessary to detergent wash and abrasive blast or sand the surface if it has been contaminated.

CLEANUP & SAFETY

Cleanup	Use scouring pads and water. 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 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 respirator.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A & B: 24 months at 75 °F (24 °C) Part C for the 1/2 cubic ft kit: 24 months *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
Storage Temperature & Humidity	50-90 °F (10-32 °C) **Do not freeze.**
Storage	Store Indoors.
Shipping Weight (Approximate)	• ½ cu. Ft. Kit - 62 lbs (28 kg) • 3 Gallon Kit - 27 lbs. (12 kg) • 15 Gallon Kit - 135 lbs. (61kg)
Flash Point (Setaflash)	Part A: >200 °F (93 °C) Part B: >200 °F (93 °C) Part C: Not applicable.

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.