

Selection & Specification Data

Generic Type	A water-based epoxy repair mortar which is cement and aggregate filled.
Description	An economical epoxy patching and surfacing compound that exhibits excellent bond strength to concrete and other masonry surfaces. It is ideally suited for patching spalled concrete and masonry wall surfacing to accept subsequent topcoats. Carboguard 510 repairs damaged concrete, fills large cracks, and can be used as a coving and sloping material for floor-wall transitions.
Features	<ul style="list-style-type: none"> Epoxy modification improves chemical resistance for wastewater environment Water based, low odour Excellent film strength, abrasion, and impact resistance Is castable, making it suitable for restoring pump and machinery foundations Easily topcoated to provide additional chemical resistance or improved appearance Resin mix may also used as a primer without aggregate Topcoated with Carboline's lining systems provides protection from acid attack from H₂S or MIC
Colour	Grey
Primers	Normally self-priming to concrete or masonry surfaces
Topcoats	Epoxies, Epoxy Novolacs, Polyurethanes etc
Dry Film Thickness	As required to fill the void or resurface the substrate. May be applied up to 50 mm per application. Feather-edging is not recommended.
Solids Content	By volume: 100% (practical, once fully reacted)
Theoretical Coverage Rate	Resin as primer only: 3 m ² / litre. 3 gal kit + sand / cement: 4.3 m ² at 10mm 3 gal kit + aggregate / cement:: 1.9 m ² at 25mm
Mix Ratio (Volume)	Resin: 1:2 (Part A : Part B) Mortar: 1 : 2 : 36.25 (A:B:Aggregate)
VOC Values	0 grams / litre as supplied
Limitations	<ul style="list-style-type: none"> Minimum surface and ambient temperature at application is 10°C. Not for use directly under vinyl ester or polyester materials without suitable barrier coat.

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.
Concrete	Concrete must be cured 28 days at 24°C and 50% relative humidity or equivalent. Prepare surfaces in accordance with ASTM D4258 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete.
CMU	Mortar joints should be thoroughly cured for a minimum of 15 days at 24°C and 50% relative humidity or equivalent.
Steel	Not normally recommended. Where required all steel should be adequately prepared and primed with Phenoline 311 Primer before application of Carboguard 510.

Performance Data

Test Method	Results
Dynanometer Adhesion to Concrete	2.41 MPa (350 psi) (Concrete fails)
ASTM C-109 Compressive Strength	40.27 MPa (5840 psi)
ASTM C-190 Tensile Strength	5.96 MPa (865 psi)
ASTM C-348 Flexural Strength	12.69 MPa (1840 psi)
Abrasion Resistance Tabor Abrador CS-17 Wheel; 1000 cycles	0.09 mg

Test reports and additional data available on written request.

Application Equipment

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	Carboguard 510 may be applied using conventional concrete placement and finishing tools. Mixing should be done by a horizontal blade mortar mixer.
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Mixing Thinning & Application

Mixing Normal Application to Concrete:
Power mix Parts A and B separately, then combine and use as a primer at a spreading rate of 11.15 m² (120 ft²) per gallon - 3 m² per litre.

Within 4 hours of priming, combine the following mixture, for use as a surfacing build up material. Premix sand and cement for best results before adding to A+B mixture.

Ratio Resin Mix: 1:2 by volume (A : B)

3 Gallon Kit* (for filling up to 25mm thick)

Part A - 1 gallon (3.78 litres)

Part B - 2 gallon (7.57 litres)

Sand #30-50 angular mesh* - 68.04 kg

Portland Cement (Type 1)* - 19.05 kg

Volume Yield: 43.8 litres

3 Gallon Kit* (for filling over 25mm thick)

Part A - 1 gallon (3.78 litres)

Part B - 2 gallon (7.57 litres)

Sand #30-50 angular mesh* - 22.68 kg

Portland Cement (Type 1)* - 19.05 kg

Pea Gravel 6mm (¼")* - 45.36 kg

Volume Yield: 47.6 litres

* 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 50mm, up to 15% additional pea gravel can be added to further extend volume by 5%. Components listed are for 3 gallon resin kit. Scale up appropriately for 15 gallon resin kit.

Apply to the surface using rubber float or other suitable spreading tool.

Pot Life 60 minutes at 24°C

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Normal	21°-26°C	21°-26°C	21°-26°C	0-80%
Minimum	10°C	10°C	10°C	0%
Maximum	32°C	52°C	43°C	80%

Curing Schedule

Surface Temp. & 50% Relative Humidity	Set Time to Topcoat	Light Traffic	Heavy Traffic	Final Cure
24°C	12 hours	24 hours	48 hours	28 days

These times are based on 13 mm (½") thickness at 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 discolouration 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. The maximum recoat time without surface preparation is 7 days at 30°C. 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 MSDS 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 Carboguard 510 does not contain solvents or HAPs and therefore does not require special ventilation; however when used in association with other coatings 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 vapour 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 an approved respirator.

Packaging, Handling & Storage

Pack Sizes

3 Gallon kit*	15 gallon kit*
(27 lbs)	(135 lbs)
12 kg	61kg

* Liquid components A & B only.

Flash Point (Setflash)

Part A:	251°C
Part B:	Water-based, Not applicable.

Storage Conditions 18°- 30°C Store indoors.
Do not freeze

Shelf Life Parts A & B: Min. 24 months at 24°C

***Shelf Life: when kept at recommended storage conditions and in original unopened containers.**

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