

Selection & Specification Data

Generic Type	Organic Zinc Rich Epoxy
Description	Low VOC organic zinc epoxy steel primer with extremely fast cure-to-topcoat characteristics for in-shop applications and quick turnaround requirements in the field. Carbozinc 859 has less than 360g/litre VOC (thinned) and is used extensively in virtually all industrial markets.
Features	<ul style="list-style-type: none"> - Meets Class B slip co-efficient and creep testing criteria for use on faying surfaces. - Rapid cure. Dry to recoat in 30 minutes at 25°C and 50% relative humidity. - Complies with SSPC Paint 20 (Type II). - Low temperature cure down to 2°C. - Excellent adhesion. - Protects against undercutting corrosion. - Field proven primer that applies well by spray methods. - Excellent touch-up primer by brush or roller for small areas. - VOC compliant to current AIM regulations.
Colour	Green
Finish	Flat
Primer	Self-priming
Topcoat	Acrylics, Epoxies, Polyurethanes and others as recommended by your Carboline sales representative.
	Under certain conditions, a mist coat is required to minimize topcoat bubbling.
Dry Film Thickness	75 to 125µm per coat Dry film thickness in excess of 250 microns per coat is not recommended.
Solids Content	By volume 66% ± 2% (Tested in accordance with ASTM D2697)
Zinc Content in Dry Film	By Weight 81% ± 2%
Theoretical Coverage Rate	8.7m ² /litre at 75µm 5.2m ² /litre at 125µm
	Allow for loss in mixing and application
VOC Values	Thinner # 2: 10% - 374g Thinner # 33: 10% - 378g As supplied: 326g These are the nominal values. Use Thinner # 76 for projects requiring non-photochemically reactive solvents.
Dry Temp Resistance	Continuous: 204°C Non-Continuous: 218°C

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	ISO 8501 Sa2 with a 40 to 80 micron surface profile. ISO 8501 St2 or St3 with a roughened surface for touch-up.

Performance Data

Test Method	System	Results
Impact (ASTM D2794)	A. 859 B. 859 Polyurethane Gardner Impact Tester, Direct (Intrusion) kg.m over 1/8" steel	A. 1.8 B. 1.1 min
Adhesion (ASTM D4541)	A. Carbozinc 859 B. 859 / Polyurethane C. 859 / Epoxy / Polyurethane	A. 5.8Mpa Pneumatic B. 7.6Mpa min. Pneumatic C. 4.1Mpa Elcometer
Flexibility (ASTM D522)	A. 859 B. 859 / Polyurethane	A. >6% B. >5%
Immersion (ASTM D970)	A. Carbozinc 859 / Epoxy / Polyurethane Salt Water (5% sodium chloride) at 25°C 30 Days B. 859 / Epoxy/Polyurethane; Fresh Water at 25°C for 30 days	A & B had no rusting in the scribe; and no blistering, softening or discoloration with either environment
Slip Co-efficient	Carbozinc 859 A-490 bolt spec; 150 microns dry film maximum 10% max thinning	Meets requirements for Class B rating

Mixing & Thinning

Mixing	Power mix Part A completely. Then slowly sift in the zinc filler under agitation. Power mix Part B separately and add slowly to the mixture. Pour mixture through a 30 mesh screen. DO NOT MIX PARTIAL KITS. Tip: Sifting zinc through a window screen will aid in mixing process by breaking up or catching dry zinc lumps.
Thinning	Normally not required but may be thinned up to 15% with Thinner # 2 or Thinner # 76. In hot or windy conditions, may be thinned up to 15% with Thinner # 33. Use of thinners other than those supplied by Carboline may adversely affect product performance and void product warranty, whether expressed or implied. Consult Carboline Technical Service for guidance.
Ratio	10 Litre Kit: Part A: 4.37 litres Part B: 2.53 litres Zinc Filler: 22.0kg
Pot Life	4 Hours at 25°C and less at higher temperatures. Pot life ends when coating loses body and begins to sag.

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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.

Conventional Spray Agitated pressure pot equipped with dual regulators, 10mm I.D. minimum material hose, 1.8mm fluid tip and appropriate air cap.

Airless Spray Pump Ratio: 45:1 (min)* with pail agitator
GPM Output: 3.0 (min)
Material Hose: 10mm I.D. (min)
Tip Size: .017"-.023"
Output PSI: 2000-2200
Filter Size: 60 mesh
* Teflon packings are recommended and available from the pump manufacturer.

Brush & Roller (General) For small areas and touch-up only. Preferred method for large areas is spray application.

Spray Application (General) The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco. Keep material under mild agitation during application.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Minimum	4°C	2°C	2°C	0%
Maximum	32°C	49°C	43°C	95%

Industry standards are for the substrate temperatures to be 3°C above the dew point. 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 which are as follows: material 16°C to 29°C, surface and ambient 16°C to 32°C and humidity 0% to 90%.

Curing Schedule

Surface Temp & 50% Relative Humidity	Dry to Handle	Dry to Recoat & Topcoat w/ other finishes
2°C	8 Hours	6 Hours
10°C	5 Hours	2 Hours
24°C	2 Hours	30.0 Minutes
38°C	1 Hour	30.0 Minutes

These times are based on a 75 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.

Maximum recoat time is unlimited. Must have a clean, dry surface free of chalk, zinc salts, etc. per typical good painting practices. Consult StonCor Africa Technical Service for specific information.

Cleanup & Safety

Cleanup Use Thinner # 2. 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 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. In addition to ensuring proper ventilation, appropriate respirators must be used by all application personnel.

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, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

Packaging, Handling & Storage

Shelf Life Part A: 36 Months at 25°C.
Part B: 24 Months at 25°C.
Part C: 24 Months at 25°C.

Shelf life (actual stated shelf life) when kept at recommended storage conditions and in original, unopened containers.

Shipping Weight (Approximate) 10 Litre Kit = 32kg

Storage Temperature & Humidity 4°C to 43°C
0-95% Relative Humidity

Flash Point (Setaflash) Part A: 9°C
Part B: 3°C
Zinc Filler: N/A

Storage Store indoors.

This product is solvent-based and not affected by excursions below these published storage temperatures, down to -12°C, for a duration of no more than 14 days. Always inspect the product prior to use to make sure it is smooth and homogenous when properly mixed.



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