

Selection & Specification Data

Generic Type	Two-component, zinc-rich epoxy primer
Description	A two-component, high solids, zinc rich epoxy primer formulated for the protection of properly prepared steel substrates. 859 EZ2 can be applied by conventional, airless, or plural component spray. Recommended where a high performance, highly corrosion resistant zinc primer is desired. Typical applications include structural steel, tanks, piping, equipment and other miscellaneous parts in industrial or architectural projects.
Features	<ul style="list-style-type: none"> • Excellent application properties • Tough abrasion resistant film • Excellent adhesion & undercutting resistance • Superior corrosion resistance • Meets VOC (Volatile Organic Content) regulations, <2.8 lbs./gal • Fast drying for recoat • Meets or exceeds SSPC Paint System 20 Level 3 (2002) • 75% zinc in dry film
Color	Green (0300)
Finish	Matte
Topcoats	Epoxies, polyurethanes and others as recommended by Carboline.
Dry Film Thickness	2 – 3 mils (50-75 microns) per coat. For more severe environments 859 EZ may be applied at 4 mils (100 microns) dry film thickness.
Solids Content	By Volume: 64% ± 2%
Theoretical Coverage Rate per Gallon	509 ft ² at 2 mils (125 m ² /l at 50 microns) 340 ft ² at 3 mils (8.3 m ² /l at 75 microns) Mixing and application losses will vary and must be taken into consideration when estimating job requirements.
VOC Values	As supplied: 2.79 lbs/gal (334 g/l) Thinned: 6.5 oz/gal (5%) w/ #2: 2.99 lbs/gal (359 g/l) 3.8 oz/gal (3%) w/#33 2.92 lbs/gal (350 g/l) These are nominal values.
Ratio by Volume	4:1 Ratio 4 parts 859 EZ Part A 1 part 859 EZ Part B
Pot Life	3 Hours at 75°F (24°C) unthinned. Pot life decreases at higher temperatures. Pot life ends when coating becomes too viscous to use. This product is moisture sensitive. Avoid moisture contamination.
Dry Temp. Resistance	Continuous: 180°F (82°C) Non-Continuous: 230°F (110°C) Discoloration is observed above 180°F (82°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. Use Thinner #2 or Carboline Surface Cleaner #3 in accordance with SSPC-SP1.
Steel	Abrasive blast to a commercial finish in accordance with SSPC-SP6 and obtain a 1½ - 2 mil (38-50 micron) blast profile.
Phosphatized	Apply 859 EZ2 directly to dry, properly phosphatized substrate. Perform adhesion tests to insure proper, uniform and acceptable adhesion direct to phosphatized metal substrate.

Curing Schedule

Substrate Temperature	Dry to Touch	Dry to Handle or Assemble	Dry to Topcoat*
35°F (2°C)	3 Hours	8 Hours	6 hours*
50°F (10°C)	1 hour	5 hours	2 hours*
75°F (24°C)	30 minutes	2 hours	1.5 hours*
90°F (32°C)	15 minutes	1 hour	1 hour*
130°F (54°C)	10 minutes	30 minutes	30 minutes*

*Consult Carboline Technical Service for specific wet-on-wet recoat recommendations. Some topcoats are suitable for immediate (30 min or less) recoating of 859 EZ2. These times are based on a 2.0-3.0 mils (50-75 microns) 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. Note: Product may be force cured.

FORCE CURE INFORMATION

Flash Off	Bake Time	Cool Down	Total
Convention Oven			
10 minutes	30 minutes at 150°F (65°C)	20 minutes	60 minutes
Infrared Oven			
5 minutes	15 minutes at 150°F (65°C)	15 minutes	35 minutes

Times and substrate temperatures shown are based on in-house testing and will vary depending on oven type, as well as substrate size and type.

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 Guidelines:

Spray Application (General) The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

Conventional Spray Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap.

Airless Spray (Non-plural) Pump Ratio: 30:1 (min.)
GPM Output: 3.0 (min.)
Material Hose: 3/8" I.D. (min.)
Tip Size: .015-.019"
Output PSI: 2100-2300
Filter Size: 30-60 mesh
Teflon packings are recommended and available from the pump manufacturer.

Airless Spray (Heated, plural component) Pump Ratio: Graco 35:1 (min)
GPM Output: 3.5 (min)

Lower Units: Two (2) #0
One (1) #5
Heaters: One (1) Graco Viscon (A side)
Material Hose: 50' x 3/8" I.D.
Mixer: 10" static
Gun: Graco Silver 205-591
Tip Size: .015-.019"
Output psi: 2400-2800
Filter Size: 30-60 mesh (in-line)
Solvent Flush Pump Ratio: 10:1

Touch Up Respray or brush. Brushing recommended only for touchup of small areas. Use medium, natural bristle brush applying with full strokes. Avoid excessive rebrushing.

Mixing & Thinning

Mixing For plural component application equipment follow the equipment manufacturer's instructions. Power mix each component separately prior to using plural component spray equipment or batch mixing. THIS PRODUCT IS MOISTURE SENSITIVE. AVOID MOISTURE CONTAMINATION. DO NOT MIX PARTIAL KITS.

Ratio By Volume 4:1 Ratio (A to B)

Thinning Normally not required for plural heated application. For batch mix applications, it may be thinned up to 6.5 oz/gal (5%) with Thinner #2. For hotter than normal application conditions it may be thinned 3.8 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.

Pot Life 3 hours at 75°F (24°C) unthinned. Pot life decreases at higher temperatures. Pot life ends when coating becomes too viscous to use. This product is moisture sensitive. Avoid moisture contamination.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Normal	60°-85°F (16°-29°C)	60°-90°F (16°-32°C)	60°-90°F (16°-32°C)	0-90%
Minimum	40°F (4°C)	35°F (2°C)	35°F (2°C)	0%
Maximum	90°F (32°C)	120°F (49°C)	110°F (43°C)	95%

Do not apply when the surface temperature is less than 5°F (3°C) 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 thinning and application techniques may be required above or below normal application conditions.

Cleanup & Safety

Cleanup Use Thinner #2 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 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

Shipping Weight (Approximate)	1 Gallon Kit 25 lbs. (kg)	3.75 Gallon Kit 82 lbs. (kg)
	15 Gallon Kit 335 lbs. (kg)	150 Gallon Kit 1,226 lbs. (kg)
Thinner #2	5 Gallon 40 lbs. (kg)	50 Gallon Drum 405 lbs. (kg)
	Thinner 33 40 lbs. (kg)	405 lbs. (kg)

Flash Point (Setaflash)	Part A:	64°F (18°C)
	Part B:	69°F (20°C)
	Thinner #2:	24°F (-4.4)
	Thinner #33:	89°F (32°C)

Storage (General) Store Indoors.

Storage Temperature & Humidity 40° - 95°F (4-35°C)
0-90% Relative Humidity

Shelf Life Part A: 12 months at 75°F (24°C)
Part B: Min. 12 months at 75°F (24°C)

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



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