

Selection Data

GENERIC TYPE : Two component, cross-linked epoxy.

GENERAL PROPERTIES : CARBOLINE 890 is a high solids, high gloss, high build epoxy topcoat that can be applied by spray, brush, or roller. The cured film provides a tough, cleanable surface. Available in a wide variety of colors.

Features include :

- Good flexibility and lower stress upon curing than most epoxy coatings.
- Very good abrasion resistance.
- Excellent performance in wet exposures.
- Meets the most stringent VOC (Volatile Organic Content) regulations.
- Tested for Nuclear service Level 1.

Recommended USES : Recommended where a high performance, chemically resistant epoxy topcoat is desired. Offers outstanding protection for interior floors, walls, piping, equipment and structural steel or as an exterior coating for railcars, structural steel and equipment in various corrosive environments. Recommended industrial environments include Chemical Processing, Offshore Oil and Gas, Food Processing and , Water and Waste Water Treatment, Pulp and Paper, Power Generation among others. May be used as a two coat system direct to metal or concrete for Water and Municipal Waste Water immersion.

NOT RECOMMENDED FOR : Strong acid or solvent exposures, or immersion service other than water, or exterior weathering where color retention is desired, such as finish for tank exteriors.

TYPICAL CHEMICAL RESISTANCE :

Exposure	Immersion	Splash & Spillage	Fumes
Acids	NR	Very Good	Very Good
Alkalies	NR	Excellent	Excellent
Solvents	NR	Very Good	Excellent
Salt	Excellent	Excellent	Excellent
Water	Excellent	Excellent	Excellent

TEMPERATURE RESISTANCE :

Continuous	250°F (121°C)
Non-continuous	300°F (149°C)

At 200°F, coating discoloration and loss of gloss is observed, without loss of film integrity.

SUBSTRATES : Apply over suitably prepared metal, concrete, other surfaces as recommended.

COMPATIBLE COATINGS : May be applied directly over inorganic zincs, weathered galvanizing, catalyzed epoxies, phenolics as instructed. A test patch is recommended before use over existing coatings. May be used as a tie coat over inorganic zincs. A mist coat of CARBOLINE 890 is required when applied over inorganic zincs to minimize bubbling. May be top coated to upgrade weathering resistance. Not recommended over chlorinated rubber or latex coatings. Consult Carboline Technical Service Department for specific recommendations.

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THEORETICAL SOLIDS CONTENT OF MIXED MATERIAL :

CARBOLINE 890	By Volume
	75%±2%

VOLATILE ORGANIC CONTENT :

As Supplied : 1.78 lbs./gal.(214 grams/liter)

Thinned : The following are nominal values utilizing :

Thinner	% Thinner	Fluid Ounces/Gal.	Pounds/Gallon	Grams/Liter
#2	6	8	2.08	250
#2	10	12.8	2.26	271
#33	12	16	2.38	285

* **Varies with color**

RECOMMENDED DRY FILM THICKNESS PER COAT :

4-6 mils(100-150 microns)

5-7 mils(125-175 microns) DFT for a more uniform gloss over inorganic zincs

Dry film thicknesses in excess of 10 mils (250 microns) per coat are not recommended. Excessive film thickness over inorganic zinc may increase damage during shipping or erection.

THEORETICAL COVERAGE PER MIXED GALLON :

1203 MIL sq. ft. (30 sq. m/l at 25 microns)

241 sq. ft. at 5 mils (6.0 sq. m/l at 125 microns)

* Mixing and application losses will vary and must be taken into consideration when estimating job requirements.

STORAGE CONDITIONS :

Store indoors.

Temperature : 40-110°F (4-43°C)

Humidity : 0-100%

SHELF LIFE :

Twenty-four months when stored at 75°F (24°C)
COLORS : Available in Carboline Color Chart colors. Some colors may require two coats for adequate hiding. Colors containing lead or chrome pigments are not USDA acceptable Consult your local Carboline representative or Carboline Customer Service to availability.

GLOSS : High gloss (Epoxies lose gloss, discolor and eventually chalk in sunlight exposure.) Less than 4 mils DFT will reduce gloss.

Ordering Information

Prices may be obtained from your Carboline Sales Representative or Carboline Customer Service Department.

APPROXIMATE SHIPPING WEIGHT :

	<u>2 Gal.Kit</u>	<u>10 Gal.Kit</u>
CARBOLINE 890	29 lbs. (13kg)	145 lbs. (66kg)
THINNER #2	8 lbs. in 1's (4kg)	39 lbs. in 5's (18kg)
THINNER #33	9 lbs. in 1's (4kg)	45 lbs. in 5's (20kg)
FLASH POINT : (Setaflash)		
CARBOLINE 890 Part A		89°F (32°C)
CARBOLINE 890 Part B		71°F (22°C)
THINNER #2		24°F (-5°C)
THINNER #33		89°F (32°C)

Carboline® 890

These instructions are not intended to show product recommendations for specific service. They are issued as an aid in determining correct surface preparation. Mixing instructions and application procedure. It is assumed that the proper product recommendations have been made. These instructions should be followed closely to obtain the maximum service from the materials..

SURFACE PREPARATION : Remove oil or grease from surface to be coated with clean rags soaked in Thinner #2 or surface Cleaner #3 (refer to Surface Cleaner #3 instructions) in accordance with SSPC-SP 1.

STEEL : Normally applied over clean, dry recommended primers. May be applied directly to metal. For immersion service, abrasive blast to a minimum Near White Metal Finish in accordance with SSPC-SP10, to a degree of cleanliness in accordance with NACE #2 to obtain a 1.5-3 mil (40-75 micron) blast profile. For non-immersion, abrasive blast to a Commercial Grade Finish in accordance with SSPC-SP6, to a degree of cleanliness in accordance with NACE #3 to obtain a 1.5-3 mil (40-75 micron) blast profile.

Concrete : Apply over clean, dry recommended surfacer or primer. Can be applied directly to damp (not visibly wet) or dry concrete where an uneven surface can be tolerated.

Remove laitance by abrasive blasting or other means.

Do not coat concrete treated with hardening solutions unless test patches indicate satisfactory adhesion. Do not apply coating unless concrete has cured at least 28 days at 70°F (21°C) and 50% RH or equivalent time.

MIXING : Mix separately, then combine and mix in the following proportions:

	2 Gallon Kit	10 Gallon Kit
CARBOLINE 890 Part A	1 gallon	5 gallons
CARBOLINE 890 Part B	1 gallon	5 gallons
DO NOT MIX PARTIAL KITS.		

THINNING : For spray applications, thin up to 10% (12.8 fl.oz/gal) by volume with Thinner #2. For hot and windy conditions, or for brush and roller application, may be thinned up to 12% (16 fl.oz/gal.) by volume with Thinner #33.

Refer to Specification Data for VOC information.

Use of thinners other than those supplied or approved by Carboline may adversely affect product performance and void product warranty, whether express or implied.

POT LIFE : Three hours at 75°F (24°C) and less at higher temperatures. Pot life ends when material loses film build.

APPLICATION TEMPERATURES :

	<u>Material</u>	<u>Surfaces</u>
Normal	60-85°F (16-29°C)	60-85°F (16-29°C)
Minimum	50°F (10°C)	50°F (10°C)
Maximum	50°F (32°C)	125°F (52°C)

	<u>Ambient</u>	<u>Humidity</u>
Normal	60-90°F (16-32°C)	80%
Minimum	50°F (10°C)	0%
Maximum	110°F (43°C)	80%

Do not apply when surface temperature is less than 5°F (or 3°C) above the dew point.

Avoid excessive humidity or condensation during cure which can interfere with the cure of the coating, and/or cause discoloration. Epoxies lose gloss, discolor and eventually chalk when exposed to sunlight.

Special tinning and application techniques may be required above or below normal conditions.

SPRAY : This is high solids coating and may require slight adjustments in spray techniques. Wet film thicknesses are easily and quickly achieved. The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

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

Airless : Pump Ratio : 30:1 (min)
GPM Output : 3.0 (min)
Material Hose : 3/8" I.D. (min)
Tip Size : 017-021"
Output psi : 2100-2300
Filter Size : 60 mesh

* Teflon packing are recommended and are available from the pump manufacturer.

BRUSH OR ROLLER : Use medium bristle brush, or good quality short nap roller, avoid excessive rebrushing and rerolling. Two coats may be required to obtain desired appearance, hiding and recommended DFT. For best results, tie-in within 10 minutes at 75°F (24°C)

DRYING TIMES : These times are at 5 mils (125 microns) dry film thickness. Higher film thicknesses will lengthen cure times.

Surface

<u>Temperature</u>	<u>Dry to Topcoat</u>	<u>Final Cure</u>
50°F (10°C)	24 hours	3 days
60°F (16°C)	16 hours	2 days
75°F (24°C)	8 hours	1 days
90°F (32°C)	4 hours	16 hrs

* When recoating with CARBOLINE 890, recoat times will be drastically reduced. When topcoating epoxies, it is generally practiced to topcoat within 30 days of application. If this recoat window has been exceeded, contact Carboline Technical Service Department for special surface preparation, if any.

Recommended minimum cure before immersion services is 5 days at 75°F (24°C) surface temperature.

CLEANUP : Use Thinner #2.

CAUTION : READ AND FOLLOW ALL CAUTION STATEMENTS ON THIS PRODUCT DATA SHEET AND ON THE MATERIAL SAFETY DATA SHEET FOR THIS PRODUCT.

CAUTION:CONTAINS COMBUSTIBLE SOLVENTS. KEEP AWAY FROM SPARKS AND OPEN FLAMES. IN CONFINED AREAS WORKMEN MUST WEAR FRESH AIRLINE RESPIRATORS. HYPERSENSITIVE PERSONS SHOULD WEAR GLOVES OR USE PROTECTIVE CREAM. ALL ELECTRIC EQUIPMENT AND INSTALLATIONS SHOULD BE MADE AND GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. IN AREAS WHERE EXPLOSIVE HAZARDS EXIST, WORKMEN SHOULD BE REQUIRED TO USE NONFERROUS TOOLS AND TO WEAR CONDUCTIVE AND NONSPARKING SHOES.

