



Selection & Specification Data

Generic Type Aliphatic Acrylic Polyurethane

Description A clear coat finish that provides added UV protection over pigmented Carboline polyurethanes. Exceptionally hard film and excellent depth-of-image provide extended service life to the Carbothane® topcoats, especially when deep tone and metallic colors are used.

Features

- Hard finish with excellent impact and abrasion resistance
- Excellent resistance to UV degradation
- High gloss version provides very good depth of image
- Attractive gloss and satin finishes
- Suitable for conventional spray or roller application
- Graffiti resistant
- VOC compliant to current AIM regulations

Color Clear (0910)

Finish Gloss & Satin

Substrate Apply over Carbothane 133HB, 134HG, 833/833 FC and others as recommended by Carboline.

Dry Film Thickness 1.0-2.0 mils (25-50 microns) per coat

Solids Content By Volume: (Gloss) 60% ± 2%
By Volume: (Satin) 57% ± 2%

Theoretical Coverage Rate For Gloss 962 mil ft² (23.2 m²/l) at 25 microns
Allow for loss in mixing and application

Theoretical Coverage Rate For Satin 914 mil ft² (23.2 m²/l) at 25 microns
Allow for loss in mixing and application

VOC Values Gloss As supplied: 2.8 lbs/gal (335 g/l)
Thinned:
13 oz/gal w/ #214: 3.2 lbs/gal (384 g/l)
13 oz/gal w/ #215: 3.2 lbs/gal (384 g/l)
These are nominal values.

VOC Values Satin As supplied: 3.0 lbs/gal (360 g/l)
Thinned:
13 oz/gal w/ #214: 3.4 lbs/gal (407 g/l)
13 oz/gal w/ #215: 3.4 lbs/gal (407 g/l)
These are nominal values.

Dry Temp. Resistance Continuous: 200°F (93°C)
Non-Continuous: 250°F (121°C)
Discoloration and loss of gloss is observed above 200°F (93°C).

Substrates & Surface Preparation

General Apply over Carbothane topcoats that are clean and dry, and within the recoat time allotment. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating.

Previously Painted Surfaces Consult Carboline Technical Services for information.

Performance Data

Gloss & Satin Data

Test Method	System	Results	Report #
ASTM D4541 Adhesion	Blasted Steel 1 ct. Epoxy 1 ct. Urethane 1 ct. Clear	Gloss: 1965 psi (Pneumatic) Satin: 1435 psi (Pneumatic)	03539
ASTM D3359 Adhesion	Blasted Steel 1 ct. Epoxy 1 ct. Urethane 1 ct. Clear	Gloss: 5A Satin: 5B	03539
ASTM D522 Flexibility	1 ct. Clear	Gloss & Satin No cracking observed at 1/8" diameter Method A	03539
ASTM G53 ASTM D4587 Accelerated Weathering	Blasted Steel 1 ct. Epoxy 1 ct. Urethane 1 ct. Clear	Gloss & Satin No blistering, cracking or chalking; color difference less than 3.88 DE units; no loss of gloss after 4500 hours of cycling	03394
ASTM D3363 Hardness	1 ct. Clear	Gloss: F Satin: 2H	03539
ASTM G26 Weatherometer	Blasted steel 1 ct. Zinc Primer 1 ct. Urethane 1 ct. Clear	Gloss only: retention of 94.5%. Color change of .90 DE CIE-Lab units after 3000 hours of exposure.	03230
ASTM D1014 Outdoor Weathering	Blasted steel 1 ct. Zinc Primer 1 ct. Urethane 1 ct. Clear	Gloss only: retention of 94%. Color change of .70 DE CIE-Lab units after 3 years of exposure at 45° angle South Florida.	03230
Graffiti Resistance	Blasted Steel 1 ct. Epoxy 1 ct. Urethane 1 ct. Clear	Gloss & Satin All removed by solvent after exposure to: shoe polish, Sharpie marker, crayon, lipstick, spray cans of acrylic, alkyd and epoxy.	03395

Test reports and additional data available upon written request.

Carbothane® Clear Coats

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) This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. 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, air powered agitator, 3/8" I.D. minimum material hose, .043" I.D. fluid tip and appropriate air cap.

Airless Spray Not recommended.

Brush Recommended for touch-up only. Use a medium, natural bristle brush and avoid excessive rebrushing.

Roller Use a 1/2"-nap mohair roller cover with phenolic core and avoid excessive rerolling.

Mixing & Thinning

Mixing Power mix Part A separately, then combine and power mix. DO NOT MIX PARTIAL KITS.

Ratio Gloss 3.5:1 Ratio (A to B)

Ratio Satin 4:1 Ratio (A to B)

Thinning Spray: Normally not required.
Brush: Up to 13 oz/gal (10%) w/ #214 & 215
Roller: Up to 13 oz/gal (10%) w/ #214 & 215
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) and less at higher temperatures. Pot life ends when coating becomes too viscous to use. MOISTURE CONTAMINATION WILL SHORTEN POT LIFE AND CAUSE GELLATION.

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. 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 supplied air respirator.

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.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Normal	60°-85°F (16°-29°C)	60°-85°F (16°-29°C)	60°-85°F (16°-29°C)	40-60%
Minimum	50°F (10°C)	35°F (2°C)	35°F (2°C)	10%
Maximum	100°F (38°C)	120°F (49°C)	95°F (35°C)	80%

Industry standards are for substrate temperatures to be above the dew point. **Caution:** This Product is moisture sensitive in the liquid stage and until fully cured. Protect from high humidity, dew and direct moisture contact until fully cured. Application and/or curing in humidities above maximum, or exposure to moisture from rain or dew may result in a loss of gloss and/or microbubbling of the product.

Curing Schedule

Surface Temp. & 50% Relative Humidity	Dry to Handle	Dry to Recoat	Final Cure
35°F (2°C)	36 Hours	36 Hours	14 Days
50°F (10°C)	16 Hours	16 Hours	10 Days
75°F (24°C)	8 Hours	8 Hours	7 Days
90°F (32°C)	4 Hours	4 Hours	5 Days

These times are based on a 1.0-2.0 mil (25-50 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.

Packaging, Handling & Storage

Shipping Weight - Gloss (Approximate) .90 Gallon Kit 9 lbs (4 kg) 4.5 Gallon Kit 45 lbs (21 kg)

Shipping Weight - Satin (Approximate) 1.0 Gallon Kit 11 lbs 5 Gallon Kit 55 lbs

Flash Point (Setaflash) Gloss & Satin Part A: 43°F (6°C) Part B: 106°F (41°C)

Storage (General) Store Indoors.

Storage Temperature & Humidity 40° - 110°F (4°-43°C) 0-80% Relative Humidity

Shelf Life: Gloss & Satin Part A: Min. 36 months at 75°F (24°C) Part B: Min. 24 months at 75°F (24°C)

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

Distributed by:



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