

## SELECTION & SPECIFICATION DATA

<b>Generic Type</b>	Aliphatic Acrylic-Polyester Polyurethane
<b>Description</b>	High solids, high build, satin finish that provides a tough attractive finish while exhibiting outstanding performance properties. Demonstrates extremely good resistance to abrasion, corrosion and chemical exposure when applied over recommended Carboline primers and/or intermediate coats.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Compliant to AWWA D102-11, OCS-4 &amp; OCS-6</li> <li>• Outstanding performance properties in virtually all industrial markets</li> <li>• High build; suitable for many two-coat systems</li> <li>• High solids formulation allows for improved edge protection</li> <li>• Suitable for application direct to inorganic and organic zinc primers</li> <li>• Indefinite recoatability</li> <li>• VOC compliant to current AIM regulations</li> <li>• Suitable for use in USDA inspected facilities</li> </ul>
<b>Color</b>	1864 (White), 6666 (Safety Yellow), 5555 (Safety Red), C703 (Grey), C705 (Light Grey), C900 (Black). Other colors are available on request. Contact your Carboline Representative for availability
<b>Finish</b>	Satin to Semi-Gloss
<b>Primer</b>	Inorganic zinc primers, organic zinc primer, or epoxy primers
<b>Dry Film Thickness</b>	3 - 5 mils (76 - 127 microns) per coat Dry film thickness in excess of 7.0 mils (175 microns) per coat is not recommended.
<b>Solids Content</b>	By Volume 72% +/- 2%
<b>Theoretical Coverage Rate</b>	1155 ft <sup>2</sup> /gal at 1.0 mils (28.3 m <sup>2</sup> /l at 25 microns) 385 ft <sup>2</sup> /gal at 3.0 mils (9.4 m <sup>2</sup> /l at 75 microns) 231 ft <sup>2</sup> /gal at 5.0 mils (5.7 m <sup>2</sup> /l at 125 microns) Allow for loss in mixing and application.
<b>VOC Value(s)</b>	Per EPA Method 24: 1.31 lbs/gal (157 g/l) 16 oz/gal of Thinner 2: 2.05 lbs/gal (246 g/l) 16 oz/gal of Thinner 214: 1.92 lbs./gal (230 g/l) 16 oz/gal of Thinner 215: 2.07 lbs/gal (249 g/l) 16 oz/gal of Thinner 236 E: 1.31 lbs./gal (157 g/l) 16 oz/gal of Thinner 242 E: 1.31 lbs/gal (157 g/l) 16 oz/gal of Thinner 25: 2.07 lbs/gal (248 g/l)  These are nominal values and may vary slightly with color. <b>NOTE:</b> Thinner 242 E contains VOC-exempt t-butyl acetate. Check local regulations regarding product usage.
<b>Dry Temp. Resistance</b>	Continuous: 300°F (149°C) Some discoloration and loss of gloss may be experienced at elevated temperatures.
<b>Limitations</b>	*The alignment of aluminum flakes in aluminum-filled finishes is very dependent on application conditions and techniques. Care must be taken to keep conditions as constant as possible to reduce variations in final appearance. It is also advisable to work from a single batch of material since variations can occur from batch to batch. For more information consult Carboline Technical Service Department.

# Carbothane<sup>®</sup> 133 VOC

## PRODUCT DATA SHEET



### SUBSTRATES & SURFACE PREPARATION

<b>General</b>	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. For all surfaces, prime with specific Carboline primers as recommended by your Carboline sales representative.
<b>Steel</b>	SSPC-SP6 with a 1.5-2.5 mil (37.5-62.5 microns) surface profile for maximum protection. SSPC-SP2 or SP3 as minimum requirement.
<b>Previously Painted Surfaces</b>	Lightly sand or abrade to roughen surface and degloss the surface. Existing paint must attain a minimum 3A rating in accordance with ASTM D3359 "X-Scribe" adhesion test.

### PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	System	Results
ASTM B117 Salt Fog for 4,000 hours	1ct. Carbozinc 11/1ct. Carbothane 133 VOC	No effect to plane, very slight rust in scribe

### MIXING & THINNING

<b>Mixing</b>	Power mix separately Part A, then combine with Part B and power mix. DO NOT MIX PARTIAL KITS.
<b>Thinning</b>	Spray: Up to 16 oz/gal (12%) w/ Thinner 2 Spray: Up to 16 oz/gal (12%) w/ Thinner 25 Spray: Up to 16 oz/gal (12%) w/ Thinner 236E Spray: Up to 16 oz/gal (12%) w/ Thinner 242E Brush: Up to 16 oz/gal (12%) w/ Thinner 215 Roller: Up to 16 oz/gal (12%) w/ Thinner 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.
<b>Ratio</b>	5:1 Ratio (A to B)
<b>Pot Life</b>	6 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.

### APPLICATION EQUIPMENT GUIDELINES

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.

<b>Spray Application (General)</b>	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.
<b>Conventional Spray</b>	Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap.

## APPLICATION EQUIPMENT GUIDELINES

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<b>Airless Spray</b>	Pump Ratio: 30:1 (min.)* GPM Output 2.5 (min.) Material Hose: 3/8" I.D. (min.) Tip Size: 0.013-0.015" Output PSI: 2100-2400 Filter Size: 60 mesh *PTFE packings are recommended and available from the pump manufacturer.
<b>Brush &amp; Roller (General)</b>	Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling. For best results, tie-in within 10 minutes at 75°F.
<b>Brush</b>	Recommended for touch-up only. Use a medium, natural bristle brush.
<b>Roller</b>	Use a medium-nap mohair roller cover with solvent resistant core.

## APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	50°F (10°C)	35°F (2°C)	35°F (2°C)	0%
Maximum	100°F (38°C)	120°F (49°C)	95°F (35°C)	80%

**Industry standards are for substrate temperatures to be 5°F (3°C) above the dew point.**

**Caution:** This Product is moisture sensitive in the liquid stage and until fully cured. Protect from heavy 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 micro-bubbling of the product.

## CURING SCHEDULE

Surface Temp.	Dry to Handle	Dry to Recoat	Final Cure General
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 4.0 mil (100 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 times are indefinite.** Surface must be clean and dry. As part of good painting practice it is recommended to test for adhesion by wiping the surface with Thinner 25. If the film shows a slight "tack" the surface is suitable for recoating without extensive surface preparation such as abrading.

Carboline Additive 101 can be used to accelerate the film forming process in this product for conditions outside of the parameters of this data sheet. Carboline Additive 101 is added at a rate of 1.0-2.0 oz per mixed gallon or a maximum of 6 oz per mixed five gallons. At this addition rate, Additive 101 will accelerate the cure rate of the urethane product between 25-40% depending on the substrate temperature range and reduce the pot life of the product by approximately 40-50% of that stated on the product data sheet. With the use of Additive 101, this product will continue to cure at temperatures as low as 20°F (-7°C).

## CLEANUP & SAFETY

<b>Cleanup</b>	Use Thinner 2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.
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## PRODUCT DATA SHEET



### CLEANUP & SAFETY

<b>Safety</b>	Read and follow all caution statements on this product data sheet and on the SDS for this product and use personal protective equipment as directed.
<b>Ventilation</b>	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.
<b>Caution</b>	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

<b>Shelf Life</b>	Part A: Min. 36 months at 75 °F (24 °C) Part B (Urethane Converter 811): 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.
<b>Storage Temperature &amp; Humidity</b>	40° - 110°F (4°-43°C) 0-80% Relative Humidity
<b>Storage</b>	Store Indoors.  This product is solvent based and not affected by excursions below these published storage temperatures, down to 10°F, for a duration of no more than 14 days. Always inspect the product prior to use to make sure it is smooth and homogeneous when properly mixed.
<b>Shipping Weight (Approximate)</b>	1.2 Gallon Kit - 17 lbs (8 kg) 6 Gallon Kit - 80 lbs (36 kg)
<b>Flash Point (Setaflash)</b>	Part A: 71 °F (22 °C) Part B (Urethane Converter): 127 °F (53 °C)

### WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.