

SELECTION & SPECIFICATION DATA

Generic Type	Aliphatic Acrylic-Polyester Polyurethane Satin Finish
Description	High build, low sheen finish that has excellent resistance to corrosion, chemicals and abrasion. Suitable for application over a number of Carboline primers and intermediates, this material provides very good weathering performance in a broad range of colors.
Features	<ul style="list-style-type: none"> • Outstanding performance properties in both mild and aggressive environments • High build; suitable for many two-coat systems • Approved for use in food & dairy processing plants (see Approvals NZ/AU, page 5) • Application by spray, brush or roller • Indefinite recoatability • VOC compliant to current AIM regulations • Low HAPs content version of time proven Carbothane® 133 HB
Colour	White and full range of AS, BS, RAL and custom tinted colours.
Gloss	Satin
Finish	Satin to Low Sheen Semi-Gloss
Primer	<i>Refer to Substrates & Surface Preparation</i>
Dry Film Thickness	76 - 127 microns (3 - 5 mils) per coat Dry film thickness in excess of 175 microns per coat is not recommended.
Solids Content	By Volume 61% +/- 2%
Theoretical Coverage Rate	24.0 m ² at 25 microns (978 ft ² at 1.0 mils) 8.0 m ² at 75 microns (326 ft ² at 3.0 mils) 4.8 m ² at 125 microns (196 ft ² at 5.0 mils) Allow for loss in mixing and application.
VOC Values	As Supplied : 324 g/l These are nominal values and may vary slightly with colour.
Dry Temp. Resistance	Continuous: 93°C (199°F) Non-Continuous: 120°C (248°F)
Limitations	When exposed to light abrasion / rubbing, the affected surface will display an increase in sheen level, resulting in a variable surface finish.
Topcoats	Carbothane® 130 Clear Coat where required for extreme weathering resistance or NZTA/AMA approved graffiti resistance. <i>Note: Application of Clear Coat will improve UV resistance of most colours <u>but will raise the gloss level.</u></i>

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. Refer to the specific primer's Product Data Sheet for detailed requirements of the specified primer.
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Carbothane 133 LH

PRODUCT DATA SHEET



SUBSTRATES & SURFACE PREPARATION

Steel	For maximum protection, abrasive blasting to a minimum of SSPC-SP 6 (AS 1627.4 Class 2), or better, with a 35-70 micron surface profile. Power or hand tool clean as minimum requirement. Prime and / or intermediate coat as recommended by your Carboline sales representative or Carboline specification.
Galvanized Steel	Ensure no traces of galvanizing passivation treatment (quench) are present; degrease and abrade surface. Sweep abrasive blasting is highly recommended. Refer to primer Product Data Sheet. Prime with specific Carboline primer such as Carboguard® 504 or Carboguard® 635, or as recommended by your Carboline Sales Representative.
Aluminum	Degrease, abrade and prime with appropriate Carboline primer as recommended by your Carboline sales representative or Carboline specification.
Previously Painted Surfaces	Lightly sand or abrade to roughen and degloss the surface. Existing paint must attain a minimum 3B rating in accordance with ASTM D3359 "X-Scribe" adhesion test. Prime with specific Carboline primers as recommended by your Carboline sales representative or Carboline specification.

PERFORMANCE DATA

Test Method	System	Results	Report #
ASTM D4213 Scrub Resistance	1 ct 133 LH	0.0027 µm erosion rate after 100 cycles with abrasive scrub medium	03403
ASTM G26 Weatherometer	Blasted steel 1 ct IOZ 1 ct 133 LH	No blistering, rusting or cracking after 3500 hours	01982
ASTM G53 QUV 2500 hours with UVA 340 bulb	Blasted steel 1 ct Epoxy 1 ct 133 LH	Colour change less than 2 McAdam Units; no blistering, rusting, cracking or chalking	03394
ASTM B117 Salt Fog	Blasted steel 1 ct Epoxy Zn 1 ct 133 LH	No rusting or blistering on plane or scribe. 4000 hours	02585
ASTM D5894 QUV A Prohesion	1 ct 133 LH	No effect on plane area and 78% gloss retention after 1008 hours wet / dry salt fog cycle	03274
ASTM D4585 Humidity	Blasted steel 1 ct IOZ 1 ct 133 LH	No rusting or blistering after 3000 hours	02585
Graffiti Resistance	Blasted steel 1 ct Epoxy 1 ct 133 LH	All markings and stains removed by solvent after exposure to: shoe polish, Sharpie Marker, crayon, lipstick, spray cans of acrylic, alkyd and epoxy.	03395
ASTM D1735 Water Fog	Blasted steel 1 ct Epoxy 1 ct 133 LH	No rusting or blistering after 8600 hours	02061

Test reports and additional data available on written request.

MIXING & THINNING

Mixing	Power mix Part A separately, then combine with Part B and power mix. DO NOT MIX PARTIAL KITS.
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MIXING & THINNING

Thinning	Not normally required for airless spray. Use minimum quantity of Thinner #25 required for good spray atomisation; typically 0-20% depending upon gear and conditions. For brush / roller application use Thinner #22.
Ratio	4:1 by volume (Part A : Part B)
Pot Life	4 Hours at 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.

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, 9.5 mm (3/8") I.D. minimum material hose, 1.8 mm (.070") I.D. fluid tip and appropriate air cap.
Airless Spray	Pump Ratio: 30:1 (min.)* Output: 10 lt/minute (min.) Material Hose: 9.5 mm (3/8") I.D. (min.) Tip Size: .013-.015" Output PSI: 2100-2300 Filter Size: 60 mesh *Teflon packings are recommended and available from the pump manufacturer.
Brush & Roller (General)	Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive rebrushing or re-rolling. For best results, tie-in within 10 minutes at 24°C.
Brush	Recommended for touch-up only. Use a medium, natural bristle brush.
Roller	Use a medium-nap synthetic roller cover with phenolic core.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	4°C (39°F)	4°C (39°F)	4°C (39°F)	0%
Maximum	38°C (100°F)	43°C (109°F)	43°C (109°F)	90%
Optimum	18°C (64°F)	18°C (64°F)	18°C (64°F)	35%

Industry standards are for substrate temperatures to be 3°C above the dew point. This product simply requires the substrate temperature to be above the dew point.

Caution: This Product is moisture sensitive in the liquid stage and until cured. Protect from high humidity, dew and direct moisture contact until 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

Carbothane 133 LH

PRODUCT DATA SHEET



CURING SCHEDULE

Surface Temp.	Dry to Handle	Dry to Recoat	Final Cure General
4°C (40°F)	24 Hours	24 Hours	28 Days
10°C (50°F)	15 Hours	15 Hours	14 Days
24°C (75°F)	6 Hours	6 Hours	7 Days
32°C (90°F)	NR	NR	4 Days
32°C (90°F)	3 Hours	3 Hours	NR

These times are based on a 75-125 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.

Polyurethane Accelerator can be used to accelerate the film forming process in this product for conditions outside of the parameters of this data sheet. Polyurethane Accelerator is added at a rate of 5 mls per mixed litre or a maximum of 25 mls per mixed five litres. At this addition rate, Polyurethane Accelerator 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 Polyurethane Accelerator, this product will continue to cure at temperatures as low as -7°C.

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	This product contains iso-cyanate. For spray application users must have air-fed masks as directed in local regulations. Adequate ventilation must be maintained throughout application and cure to avoid build up of solvent vapours.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: Min. 24 months at 24°C Part B: Min. 24 months at 24°C *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
Shipping Weight (Approximate)	5 Litre Kit - 9.2 kg 10 Litre Kit - 18.5kg
Storage Temperature & Humidity	4°-43°C 0-90% Relative Humidity
Flash Point (Setaflash)	Part A: 20°C Part B: -2°C
Storage	Store Indoors. This product is solvent based and not affected by excursions below these published storage temperatures, down to -7°C, 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.

PACKAGING, HANDLING & STORAGE

Packaging | 5 and 10 litre kits - Std Colour White, Wite and Deep bases.
5 litre kit only in Deep/Mid tone colours.

APPROVALS

Approvals NZ/AU | **Food Processing**
NZ AsureQuality assessed & passed for food / beverage including dairy farm & factory non-
incidental contact. Ref: H3111

WARRANTY

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