



# Protective & Marine Coatings

# COROTHANE® I HS ALIPHATIC FINISH COAT

**B65W50** ULTRA WHITE  
**B65T54** ULTRADEEP BASE  
**B65R50** SAFETY RED

**B65W51** EXTRA WHITE BASE  
**B65B50** BLACK  
**B65Y50** SAFETY YELLOW

Revised 6/12

## PRODUCT INFORMATION

5.12

### PRODUCT DESCRIPTION

**COROTHANE I HS** is a single component, low VOC, moisture curing urethane designed for low temperature or high humidity applications while providing UV resistance and chemical resistance equivalent to two part urethane coatings.

- Low temperature application - down to 20°F (-7°C)
- Superior resistance to yellowing, chalking, or degradation by sunlight
- Superior adhesion to most prepared surfaces
- Superior abrasion resistance
- Outstanding chemical resistance
- Outstanding application properties

### PRODUCT CHARACTERISTICS

<b>Finish:</b>	Gloss
<b>Color:</b>	Wide range of colors available
<b>Volume Solids:</b>	61% ± 1%, may vary by color
<b>Weight Solids:</b>	77% ± 2%
<b>VOC (EPA Method 24):</b>	Unreduced: <310 g/L; 2.60 lb/gal Reduced 5%: <340 g/L; 2.80 lb/gal

### Recommended Spreading Rate per coat:

	Minimum	Maximum
<b>Wet mils</b> (microns)	<b>3.5</b> (88)	<b>5.0</b> (125)
<b>Dry mils</b> (microns)	<b>2.0</b> (50)	<b>3.0</b> (75)
<b>~Coverage sq ft/gal</b> (m <sup>2</sup> /L)	<b>326</b> (8.0)	<b>489</b> (12.0)
Theoretical coverage <b>sq ft/gal</b> (m <sup>2</sup> /L) @ 1 mil / 25 microns dft	<b>976</b> (23.9)	

*NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.*

### Drying Schedule @ 4.0 mils wet (100 microns):

	@ 40°F/4.5°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
<b>To touch:</b>	4 hours	2 hours	45 minutes
<b>To recoat:</b>			
<b>minimum:</b>	24 hours	12 hours	6 hours
<b>maximum:</b>	14 days	14 days	14 days
<b>To cure:</b>	7 days	3 days	3 days

*If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.*

<b>Shelf Life:</b>	12 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C). (Tinted colors must be used within 7 days after tinting)
<b>Flash Point:</b>	101°F (39°C), Seta Flash
<b>Reducer/Clean Up:</b>	Reducer #15, R7K15, R7K100, or R7K111 (VOC exempt)

### RECOMMENDED USES

- Color coat where maximum color and gloss retention are required
- Suitable for use in the following industries:
  - Marine
  - Industrial
  - Bridge and Highway
  - Water and Waste Water
  - Petro-Chemical
  - Pulp and Paper
  - Rail
- Suitable for use in USDA inspected facilities.
- Conforms to AWWA D102-03 OCS #2
- Meets requirements of SSPC Paint 38, Level II

### PERFORMANCE CHARACTERISTICS

**Substrate\*:** Steel

**Surface Preparation\*:** SSPC-SP6

**System Tested\*:**

1 ct. Corothane I MIO-Aluminum @ 3.0 mils (75 microns) dft

1 ct. Corothane I HS @ 3.0 mils (75 microns) dft

\*unless otherwise noted below

Test Name	Test Method	Results
<b>Abrasion Resistance</b>	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	80 mg loss
<b>Adhesion</b>	ASTM D4541	1296 psi
<b>Corrosion Weathering</b>	ASTM D5984, 12 cycles, 4032 hours	Rating 10 per ASTM D610 Rusting; Rating 10 per ASTM D714 Blistering
<b>Direct Impact, topcoat only</b>	ASTM D2794	70 in lb
<b>Dry Heat Resistance</b>	ASTM D2485	250°F (121°C)
<b>Flexibility, topcoat only</b>	ASTM D522, 180° bend, 1/8" mandrel	Passes
<b>Humidity</b>	ASTM-D4585, 1000 hours	Rating 10 per ASTM D610 for Rusting; Rating 10 per ASTM D714 for Blistering
<b>Pencil Hardness</b>	ASTM D3363	HB
<b>Salt Fog Resistance</b>	ASTM B117, 1000 hours	Rating 10 per ASTM D610 for Rusting; Rating 10 per ASTM D714 for Blistering
<b>Thermal Cycling</b>	ASTM D2246, 15 cycles	Passes, no cracking, checking, or blistering; no loss of adhesion, 100% gloss retention

**Meets requirements of SSPC Paint 38, Level II.**



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### RECOMMENDED SYSTEMS

	Dry Film Thickness / ct.	
	Mils	(Microns)
<b>Steel:</b>		
1 ct. Corothane I MIO-Aluminum	2.0-3.0	(50-75)
1 ct. Corothane I Ironox B	3.0-5.0	(75-125)
1 ct. Corothane I HS	2.0-3.0	(50-75)
<b>Steel:</b>		
1 ct. Corothane I MIO-Aluminum	2.0-3.0	(50-75)
1-2 cts. Corothane I HS	2.0-3.0	(50-75)
<b>Steel:</b>		
1 ct. Corothane I GalvaPac Zinc Primer	3.0-4.0	(75-100)
1 ct. Corothane I Ironox B	3.0-5.0	(75-125)
1 ct. Corothane I HS	2.0-3.0	(50-75)
<b>Steel:</b>		
1 ct. Corothane I PrePrime	1.0-1.5	(25-40)
1 ct. Corothane I MIO-Aluminum	2.0-3.0	(50-75)
1 ct. Corothane I Ironox B	3.0-5.0	(75-125)
1 ct. Corothane I HS	2.0-3.0	(50-75)
<b>Steel (Epoxy Primer):</b>		
1 ct. Dura-Plate 235	4.0-8.0	(100-200)
1-2 cts. Corothane I HS Coat	2.0-3.0	(50-75)
<b>Concrete, smooth:</b>		
1 ct. Corothane I PrePrime	1.0-1.5	(25-40)
1 ct. Corothane I HS	2.0-3.0	(50-75)
<b>Concrete, rough:</b>		
On deeply profiled or damaged concrete floor:		
1 ct. Kem Cati-Coat HS Epoxy Filler/Sealer	10.0-20.0	(250-500)
as required to fill voids and provide a continuous substrate.		
1 ct. Corothane I HS	2.0-3.0	(50-75)
<b>Previously Painted Surfaces:</b>		
Spot prime bare steel with 1 coat of Corothane I GalvaPac Zinc Primer		
1 ct. Corothane I HS	2.0-3.0	(50-75)
or		
1 ct. Corothane I Ironox B	3.0-5.0	(75-125)
1 ct. Corothane I HS	2.0-3.0	(50-75)
(Check compatibility)		

The systems listed above are representative of the product's use, other systems may be appropriate.

### DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

### SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

- \*Iron & Steel: SSPC-SP6/NACE 3
- \*Concrete & Masonry: SSPC-SP13/NACE 6, or ICRI No. 310.2, CSP 1-3
- \*Previously Painted SSPC-SP2 or SP3
- \*Primer required

#### Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Pitted & Rusty	D St 2	D St 2	SP 2	-
Rusty	C St 3	C St 3	SP 3	-
Power Tool Cleaning	D St 3	D St 3	SP 3	-

### TINTING

Tint B65W51 and B65T54 only with Maxitoner colorants, 100% tint strength. Must be used within 7 days after tinting.

### APPLICATION CONDITIONS

Temperature:  
 air and surface: 20°F (-7°C) minimum, 100°F (38°C) maximum  
 material: 45°F (7°C) minimum  
 Do not apply over surface ice

Relative humidity: 30% minimum, 99% maximum

Refer to product Application Bulletin for detailed application information.

### ORDERING INFORMATION

Packaging: 1 gallon (3.78L) and 5 gallon (18.9L) containers

Weight: 11.79 ± 0.2 lb/gal ; 1.4 Kg/L  
 may vary by color

### SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

### WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



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Revised 6/12

## APPLICATION BULLETIN

5.12

### SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

#### Iron & Steel

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/ NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel the same day as it is cleaned.

#### Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2, CSP 1-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required.

#### Follow the standard methods listed below when applicable:

ASTM D4258 Standard Practice for Cleaning Concrete.  
ASTM D4259 Standard Practice for Abrading Concrete.  
ASTM D4260 Standard Practice for Etching Concrete.  
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.  
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.  
ICRI No. 310.2 Concrete Surface Preparation.

#### Previously Painted Surfaces

If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, or if this product attacks the previous finish, removal of the previous coating may be necessary. If paint is peeling or badly weathered, clean surface to sound substrate and treat as a new surface as above.

#### Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted C St 2	C St 2	SP 2	-
Pitted & Rusted	D St 2	D St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted D St 3	D St 3	SP 3	-

### APPLICATION CONDITIONS

Temperature:  
air and surface: 20°F (-7°C) minimum, 100°F (38°C) maximum  
material: 45°F (7°C) minimum  
Do not apply over surface ice

Relative humidity: 30% minimum, 99% maximum

### APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

#### Reducer/Clean Up

Brush/Roll ..... Reducer #15, R7K15  
Spray.....Aromatic 100 Reducer, R2K5  
VOC exempt .....R7K111

#### Airless Spray

Pump.....30:1  
Pressure..... 1800 - 2000 psi  
Hose..... 1/4" ID  
Tip ..... .011" - .015"  
Filter ..... 60 mesh  
Reduction.....As needed up to 5% by volume

#### Conventional Spray

Unit.....	Graco	Binks
Gun .....	900	95
Fluid Nozzle .....	070	66/65
Air Nozzle.....	947	66PR
Atomization Pressure.....	60-70 psi	60-70 psi
Fluid Pressure.....	15-20 psi	15-20 psi
Reduction.....	As needed up to 5% by volume	

#### Brush

Brush..... Natural bristle  
Reduction.....As needed up to 5% by volume

#### Roller

Cover ..... 1/4" natural or synthetic with solvent resistant core  
Reduction.....As needed up to 5% by volume

If specific application equipment is not listed above, equivalent equipment may be substituted.



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### APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix paint thoroughly prior to use with a low speed power agitator. Filter slowly through a 55 mesh screen.

Apply paint at the recommended film thickness and spreading rate as indicated below:

#### Recommended Spreading Rate per coat:

	Minimum	Maximum
<b>Wet mils</b> (microns)	<b>3.5</b> (88)	<b>5.0</b> (125)
<b>Dry mils</b> (microns)	<b>2.0</b> (50)	<b>3.0</b> (75)
<b>~Coverage sq ft/gal</b> (m <sup>2</sup> /L)	<b>326</b> (8.0)	<b>489</b> (12.0)
Theoretical coverage <b>sq ft/gal</b> (m <sup>2</sup> /L) @ 1 mil / 25 microns dft	<b>976</b> (23.9)	

*NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.*

#### Drying Schedule @ 4.0 mils wet (100 microns):

	@ 40°F/4.5°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
<b>To touch:</b>	4 hours	2 hours	45 minutes
<b>To recoat:</b>			
<b>minimum:</b>	24 hours	12 hours	6 hours
<b>maximum:</b>	14 days	14 days	14 days
<b>To cure:</b>	7 days	3 days	3 days

*If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.*

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

### CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer #15, R7K15. Clean tools immediately after use with Reducer #15, R7K15. Follow manufacturer's safety recommendations when using any solvent.

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### PERFORMANCE TIPS

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Excessive reduction of material can affect film build, appearance, and adhesion.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #15, R7K15.

Pour a small amount of Reducer #15, R7K15 over the top of the paint in the can to prevent skinning or gelling.

Place a temporary cover over the pail to keep excessive moisture, condensation, fog, or rain from contaminating the coating.

Do not exceed recommended dry film thickness.

When applying Corothane I - HS over dark colors, Corothane I Zinc Primers, or porous surfaces, an intermediate coat or a minimum of 2 finish coats is required for adequate hide and uniformity of appearance.

Tinted colors must be used within 7 days after tinting.

E-Z Roll Urethane Defoamer is acceptable for use. See data page 5.99 for details.

Corothane KA Accelerator is acceptable for use. See data page 5.98 for details.

It is recommend that partially used cans not be sealed/closed for use at a later date.

Do not shake beyond two minutes.

Refer to Product Information sheet for additional performance characteristics and properties.

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