



Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

PART S	B65-300	GLOSS SERIES
PART S	B65-350	SEMI-GLOSS SERIES
PART S	B65WW305	MR, WHITE TINT BASE (GLOSS)
PART T	B60V30	HARDENER

Revised: June 1, 2015

PRODUCT INFORMATION

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PRODUCT DESCRIPTION

HI-SOLIDS POLYURETHANE is a two-component, low VOC, aliphatic, acrylic polyurethane resin coating. It is designed for high performance protection with outstanding exterior gloss and color retention.

- Good/excellent resistance to corrosion and weathering
- Outstanding color and gloss retention
- Chemical resistant
- Part of a system tested for nuclear irradiation and decontamination, Level II
- Resists film attack by mildew (MR White only)
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish: High Gloss or Semi-Gloss
Color: Wide range of colors possible
Volume Solids: 65% ± 2%, mixed, may vary by color
Weight Solids: 77% ± 2%, mixed, may vary by color
VOC (EPA Method 24): Unreduced: <340g/L; 2.80 lb/gal mixed
 Reduced 15%: <370 g/L; 3.08 lb/gal
 May vary by color
Mix Ratio: 4:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.5 (112)	8.0 (200)
Dry mils (microns)	3.0 (75)	5.0 (125)
~Coverage sq ft/gal (m²/L)	208 (5.1)	347 (8.5)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1040 (25.5)	

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

Drying Schedule @ 4.5 mils wet (112 microns):

	@ 40°F/4.5°C	@ 77°F/25°C	@ 120°F/49°C
		50% RH	
To touch:	4 hours	2 hours	1 hour
To handle:	16 hours	8 hours	5 hours
To recoat:			
minimum	24 hours	18 hours	10 hours
maximum	14 days	14 days	14 days
To cure:	14 days	10 days	7 days
Pot Life:	8 hours	4 hours	2 hours

Sweat-in-Time: None required
*If maximum recoat time is exceeded, abrade surface before recoating.
 Drying time is temperature, humidity, and film thickness dependent.*

Shelf Life: Part S - 36 months, unopened
 Part T - 24 months, unopened
 Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point: 80°F (27°C), PMCC, mixed

Reducer/Clean Up:
 Below 80°F (27°C): Reducer #69, R7K69 or R7K111
 Above 80°F (27°C): Reducer #58, R7K58 or R6K32

RECOMMENDED USES

- For use over prepared substrates in industrial environments
- Heavy duty interior and exterior structural coating
- A chemical and abrasion resistant equipment and machinery finish
- A gloss and color retentive heavy duty maintenance coating for use in "high visibility" areas
- Exterior surfaces of steel tanks
- Chemical processing equipment
- Marine & Offshore Applications
- Resists film attack by mildew (MR White only)
- Suitable for use in USDA inspected facilities
- Acceptable for use in Canadian Food Processing facilities categories: D1, D3 (Confirm acceptance of specific part numbers/rexes with your SW Sales Representative)
- Conforms to AWWA D102 OCS #5 & #6.
- Acceptable for use in high performance architectural applications
- As topcoat for NEPCOAT System A
- Over FIRETEX hydrocarbon systems

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP6/NACE 3

System Tested*:

- 1 ct. Recoatable Epoxy Primer @ 4.0 mils (100 microns) dft
 - 1 ct. Hi-Solids Polyurethane Gloss @ 3.0 mils (75 microns) dft
- *unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	87.1 mg loss
Adhesion	ASTM D4541	1050 psi
Corrosion Weathering¹	ASTM D5894, 21 cycles, 7056 hours	Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 for rusting
Direct Impact Resistance	ASTM D2794	>28 in. lbs.
Dry Heat Resistance	ASTM D2485	200°F (93°C)
Flexibility	ASTM D522, 180° bend, 1/8" mandrel	Passes
Moisture Condensation Resistance	ASTM D4585, 100°F (38°C), 1000 hours	No rusting, blistering, or delamination
Pencil Hardness	ASTM D3363	F
Salt Fog Resistance¹	ASTM B117, 9000 hours	Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 for rusting
Surface Burning	ASTM E84	Flame Spread Index 0; Smoke Development Index 0 (at 3.5 mils or 88 microns)
Thermal Shock	ASTM D2246, 15 cycles	Excellent

Meets the requirements of SSPC Paint No. 36, Level 3 for white and light colors. Dark colors may require a clear coat.

Footnotes:

¹ Primer: Zinc Clad II Plus; Intermediate - Recoatable Epoxy Primer



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RECOMMENDED SYSTEMS

	Dry Film Thickness / ct.	
	Mils	(Microns)
Steel: Epoxy Primer		
1 ct. Recoatable Epoxy Primer	4.0-6.0	(100-150)
1-2 cts. Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: Epoxy Primer		
1 ct. Dura-Plate 235	4.0-8.0	(100-200)
1-2 cts. Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: Zinc Rich Primer		
1 ct. Zinc Clad II Plus	2.0-4.0	(50-100)
1 ct. Macropoxy 646	5.0-10.0	(125-250)
1-2 cts. Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: Epoxy Mastic Primer		
1 ct. Macropoxy 646	5.0-10.0	(125-250)
1-2 cts. Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: Universal Primer		
1 ct. Kem Bond HS Metal	2.0-5.0	(50-125)
1-2 cts. Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: NEPCOAT		
1 ct. Zinc Clad DOT	2.0-4.0	(50-100)
1 ct. Steel Spec Epoxy Intermediate	3.0-6.0	(75-150)
1 ct. Hi-Solids Polyurethane	3.0-5.0	(75-125)
Aluminum:		
1 ct. DTM Wash Primer	0.7-1.3	(18-32)
1-2 cts. Hi-Solids Polyurethane	3.0-5.0	(75-125)
Concrete:		
1 ct. Kem Cati-Coat Epoxy HS Filler/Sealer	10.0-15.0	(250-375)
1-2 cts. Hi-Solids Polyurethane	3.0-5.0	(75-125)
Galvanized Metal:		
1 ct. Recoatable Epoxy Primer	4.0-6.0	(100-150)
1-2 cts. Hi-Solids Polyurethane	3.0-5.0	(75-125)

FIRETEX ONLY:

Finish Coat for FIRETEX Hydrocarbon Systems:

1 ct. Hi-Solids Polyurethane*

*Consult FIRETEX PFP Specialist for recommended dft range

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

DISCLAIMER

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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, 2 mil (50 micron) profile
- * Aluminum: SSPC-SP1
- * Galvanizing: SSPC-SP1
- * Concrete & Masonry: SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3

* 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 3	SP 10	2
Commercial Blast	Sa 2	Sa 2.5	SP 6	3
Brush-Off Blast	Sa 1	Sa 2	SP 7	4
Hand Tool Cleaning	DC St 1	DC St 1	SP 3	-
Pitted & Rusted	DC St 2	DC St 2	SP 3	-
Rusted	DC St 3	DC St 3	SP 3	-
Power Tool Cleaning	DC St 3	DC St 3	SP 3	-
Pitted & Rusted	DC St 3	DC St 3	SP 3	-

TINTING

Tint with Maxitoner Colorants only into Part S. Extra White tints at 200% tint strength. Ultradeep tints at 150% tint strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

APPLICATION CONDITIONS

Temperature: 35°F (1.7°C) minimum
 120°F (49°C) maximum
 (air, surface, and material)
 At least 5°F (2.8°C) above dew point
 Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:
 Part S: 1 gallon (3.78L) and 4 gallon (15.1L) kits
 Part T: quarts (0.94L) and gallons (3.78L)
 Weight: 10.7 ± 0.2 lb/gal ; 1.28 Kg/L
 mixed, may vary with 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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APPLICATION BULLETIN

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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 or before flash rusting occurs.

Aluminum

Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1. Primer required.

Galvanized Steel

Allow to weather a minimum of six months prior to coating. Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1. When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned. Primer required.

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, 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. 310.2R Concrete Surface Preparation.

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
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Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	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	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature: 35°F (1.7°C) minimum
 120°F (49°C) maximum
 (air, surface, and material)
 At least 5°F (2.8°C) above dew point

Relative humidity: 85% 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

Below 80°F (27°C).....Reducer #69, R7K69 or R7K111
 Above 80°F (27°C).....Reducer #58, R7K58 or R6K32

Airless Spray

Pressure.....2500 - 2800 psi
 Hose.....3/8" ID
 Tip.....013" - .017"
 Filter.....none
 Reduction.....As needed up to 10% by volume

Conventional Spray

GunBinks 95
 Fluid Nozzle63 B
 Atomization Pressure50 - 70 psi
 Fluid Pressure.....20 - 25 psi
 Reduction.....As needed up to 15% by volume

Brush

Brush.....Natural bristle
 Reduction.....As needed up to 15% by volume

Roller

Cover3/8" woven with solvent resistant core
 Reduction.....As needed up to 15% 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 contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine 4 parts by volume of Part S with 1 part by volume of Part T. Thoroughly agitate the mixture with power agitation.

If reducer solvent is used, add only after both components have been thoroughly mixed.

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

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.5 (112)	8.0 (200)
Dry mils (microns)	3.0 (75)	5.0 (125)
~Coverage sq ft/gal (m²/L)	208 (5.1)	347 (8.5)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1040 (25.5)	

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

Drying Schedule @ 4.5 mils wet (112 microns):

	@ 40°F/4.5°C	@ 77°F/25°C	@ 120°F/49°C
		50% RH	
To touch:	4 hours	2 hours	1 hour
To handle:	16 hours	8 hours	5 hours
To recoat:			
minimum	24 hours	18 hours	10 hours
maximum	14 days	14 days	14 days
To cure:	14 days	10 days	7 days
Pot Life:	8 hours	4 hours	2 hours
Sweat-in-Time:	None required		

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 #58, R7K58. Clean tools immediately after use with Reducer #58, R7K58. 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.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #58, R7K58.

Mixed coating is sensitive to water. Use water traps in all air lines. Moisture contact can reduce pot life and affect gloss and color.

Quick-Thane Urethane Accelerator is acceptable for use. See data page 5.97 for details.

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

R7K69 reducer is acceptable at temperature both above and below 80°F (28°C).

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

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