Protective & Marine Coatings

POLYLON HP POLYURETHANE

PART A B65-525
PART B B65V525
SERIES HARDENER

Revised: November 20, 2023

PRODUCT INFORMATION

5.35

PRODUCT DESCRIPTION

POLYLON HP POLYURETHANE is a high performance, high solids two component, exterior/interior, polyester-aliphatic urethane coating. Provides a high gloss, excellent chemical resistance, color retention, and chalk resistance.

- Outstanding resistance to a wide range of chemical, weather, and mechanical conditions
- Abrasion and impact resistant
- Superior exterior color and gloss retention
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Gloss
Color:	Wide range of colors available
Volume Solids:	70% ± 2%, mixed, may vary by color
Weight Solids:	80% ± 2%, mixed, may vary by color
VOC (EPA Method 24):	<250 g/L; 2.1 lb/gal, mixed
Mix Ratio:	2:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**3.0** (75)	**4.5** (112)
Dry mils (microns)	**2.0** (50)	**3.0** (75)
~Coverage sq ft/gal (m^2/L)	**380** (9.3)	**570** (14.0)
Theoretical coverage **sq ft/gal** (m^2/L) @ 1 mil / 25 microns dft	**1120** (27.4)	

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):

	@ 50°F/10°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To touch:	16 hours	2 hours	30 minutes
To handle:	24 hours	5 hours	2 hours
To recoat:			
minimum:	24 hours	12 hours	2 hours
maximum:	3 days	48 hours	24 hours
To cure:	7 days	7 days	5 days
Pot Life:	5 hours	4 hours	45 minutes
Sweat-in-Time:		None required	

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

PRODUCT CHARACTERISTICS (CONT'D)

Shelf Life:	Part A - 36 months, unopened Part B - 24 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	102°F (39°C) TCC, mixed
Reducer*:	VOC Restricted Areas (≤250 g/L): use R7K111
Clean Up:	R6K30, MAK

*Other areas (>250 g/L): use R7K111 or Reducer #225 (R7K225). Choose a reducer that is compliant in your area. Confirm compliance with state and local air quality rules before use.

RECOMMENDED USES

- For industrial, commercial, or marine applications where a heavy duty polyurethane coating is required
- Resists splash, spillage, and fumes of dilute acids, alkalies, solvents, and fuels
- Tank Exteriors
- Bridges
- Marine Vessels
- Pipelines
- Machinery and Equipment
- Product finish type application
- Suitable for use in USDA inspected facilities

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

1 ct. Macropoxy 646 @ 6.0 mils (150 microns) dft
1 ct. Polylon HP @ 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	63 mg loss (average of 5 trials)
Accelerated Weathering - QUV	ASTM D4587, QUV-A, 3000 hours	Passes, >70% Gloss retention; **Meets the requirement of SSPC Paint No. 36, Level 3**
Adhesion, steel	ASTM D3359 Method B; ASTM D4541	5B (ASTM D3359); 1200 psi (ASTM D4541)
Direct Impact Resistance	ASTM D2794	100 in. lb.
Dry Heat Resistance	ASTM D2485	200°F (93°C), 250°F (121°C) intermittent
Exterior Durability	2 years at 45° South	Excellent, 87% gloss retention
Flexibility	ASTM D522, 180° bend, 1/4" mandrel	Passes
Humidity Resistance	ASTM D4585, 100°F (38°C), 2000 hours	No blistering, cracking, softening or delamination
Pencil Hardness	ASTM D3363	H
Salt Fog Resistance, with primer	ASTM B117, 1000 hours	Rating 10 per ASTM D610 for rusting, less than 1/16" creepage at scribe. No blistering, cracking, softening, or delamination of the film.

continued on back

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Steel:			
1-2 cts.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Polylon HP Polyurethane	2.0-3.0	(50-75)
Steel:			
1-2 cts.	Recoatable Epoxy Primer	4.0-6.0	(100-150)
1-2 cts.	Polylon HP Polyurethane	2.0-3.0	(50-75)
Steel:			
1 ct.	Zinc Clad II Plus	3.0-5.0	(75-125)
1 ct.	Epolon II Multi-Mil Epoxy	2.0-4.0	(50-100)
1-2 cts.	Polylon HP Polyurethane	2.0-3.0	(50-75)
Steel:			
1 ct.	Epoxy Mastic Aluminum II	6.0	(150)
1-2 cts.	Polylon HP Polyurethane	2.0-3.0	(50-75)
Galvanizing:			
1-2 cts.	Epolon II Multi-Mil Epoxy	2.0-4.0	(50-100)
1-2 cts.	Polylon HP Polyurethane	2.0-3.0	(50-75)
Concrete/Masonry:			
1 ct.	Kem Cati-Coat HS Epoxy Filler/Sealer	10.0-20.0	(250-500)
1-2 cts.	Polylon HP Polyurethane	2.0-3.0	(50-75)

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

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
* Aluminum SSPC-SP-1
* Galvanizing SSPC-SP-1
* 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	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

TINTING

Tint Part A with Maxitoner Colorant at 100% tint strength (white tint base and clear tint base only). Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

APPLICATION CONDITIONS

Temperature:	40°F (4.5°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 A:	1 gallon (3.78L) ~2 gallon (7.56L) in a 3 gallon (11.3L) container
Part B:	I/2 gallon (1.89L) and 1 gallon (3.78L)
Weight:	10.78 ± 0.2 lb/gal ; 1.3 Kg/L mixed, may vary with color

SAFETY PRECAUTIONS

Refer to the SDS 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.

DISCLAIMER

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APPLICATION BULLETIN

5.35

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 (1-2 mils / 25-50 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs. Primer Required.

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 products 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.

Galvanized Steel
Allow to weather a minimum of six months prior to coating. Solvent Clean 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 or before flash rusting occurs. 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
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	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:	40°F (4.5°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* .....VOC Restricted Areas (≤250 g/L): use R7K111

Clean Up .....R6K30, MAK

*Other areas (>250 g/L): use R7K111 or Reducer #225 (R7K225). Choose a reducer that is compliant in your area. Confirm compliance with state and local air quality rules before use.

Airless Spray
Pressure.....2400 - 3000 psi
Hose.....3/8" ID
Tip .....013" - .017"
Filter.....60 mesh
Reduction.....As needed up to 10% by volume

Conventional Spray
Gun .....Binks 95
Cap 63P
Tip 66
Atomization Pressure.....50 - 60 psi
Fluid Pressure.....20 - 30 psi
Reduction.....As needed up to 10% by volume

Brush
Brush.....Natural Bristle
Reduction.....As needed up to 10% by volume

Roller
Cover .....1/4" woven with solvent resistant core
Reduction.....As needed up to 10% by volume

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

continued on back

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APPLICATION BULLETIN

5.35

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 two parts by volume of Part A with one part by volume of Part B. Thoroughly agitate the mixture with power agitation. Allow the material to sweat-in as indicated. Re-stir before using.

If reducer 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)	**3.0** (75)	**4.5** (112)
Dry mils (microns)	**2.0** (50)	**3.0** (75)
~Coverage sq ft/gal (m^2/L)	**380** (9.3)	**570** (14.0)
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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):

	@ 50°F/10°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To touch:	16 hours	2 hours	30 minutes
To handle:	24 hours	5 hours	2 hours
To recoat:			
minimum:	24 hours	12 hours	2 hours
maximum:	3 days	48 hours	24 hours
To cure:	7 days	7 days	5 days
Pot Life:	5 hours	4 hours	45 minutes
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 #R6K30. Clean tools immediately after use with Reducer #R6K30. 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 #R6K30.

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

When rolling this product, always maintain a wet edge to avoid roller marks. Roll as close to any cut-in areas as possible to eliminate visual imperfections. Roller application must be from a roller tray, not by pouring the material onto the surface.

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

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

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