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Submittal No.: 06, Paint Product Data Sheets

Date: April 17, 2015

Vermont Department of Transportation
Northeast Regional Construction Office
Attn: Mr. Ron Gray
347 Emerson Falls Road, Suite 5
St. Johnsbury, VT 05819
(Phone) (802) 751-3295; (Cell) (802) 793-3161
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Description: Proposal/Contract Number: Bradford-Newbury IM BPNT (14)
Letting Date: 10/10/14; Award Date: 11/03/14
Project Description: Bridge Painting of Five Bridges
In the Towns of Bradford & Newbury, VT
Contract Amount: \$4,327,785.00; Completion Date: 08/26/16

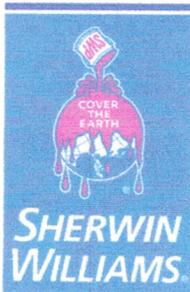
Contractor: **MONOKO, LLC**

Reviewed & Approved By: *Keri Monokandilos*
Keri Monokandilos, Manager

Date: 04/17/2015

Engineer: Peter Hodgson, Resident Engineer
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Revision:



Protective & Marine Coatings

ZINC CLAD® III HS ORGANIC ZINC-RICH EPOXY PRIMER

PART A
PART A
PART B
PART F

B69A100
B69LW100
B69V100
B69D11

GRAY-GREEN, BASE
OAP BLUE, BASE
HARDENER
ZINC DUST

Revised: January 19, 2015

APPLICATION BULLETIN

6.07

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Zinc Clad III HS comes in 3 premeasured containers which when mixed provides 3.25 gallons (12.3L) of ready-to-apply material.

Mixing Instructions:

Mix contents of component A and B thoroughly with low speed power agitator. Make certain no pigment remains on the bottom of the can. Then combine 1 part by volume of Part A with 1 part by volume of Part B, then add Part F (73 lb zinc dust). Thoroughly agitate the mixture with power agitation. After mixing, pour through a 30-60 mesh screen. Allow the material to sweat-in as indicated. Re-stir before using.

If reducer solvent is used, add only after components have been thoroughly mixed, after sweat-in. Continuous agitation of mixture during application is required, otherwise zinc dust will quickly settle out.

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 (113)	7.0 (175)
Dry mils (microns)	3.0 (75)	5.0 (125)
~Coverage sq ft/gal (m ² /L)	224 (5.5)	370 (9.1)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1120 (27.5)	

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

Drying Schedule @ 5.0 mils wet (125 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	45 minutes	30 minutes	10 minutes
To handle:	2 hours	1 hour	30 minutes
To recoat*:			
minimum:	4 hours	30 minutes	30 minutes
**maximum:	none	none	none
To cure:	10 days	7 days	7 days

Drying time is temperature, humidity, and film thickness dependent.

*NOTE: Film must be free of solvent, hard and firm. When rubbed with the face of a coin or knife the film should polish but not flake or chip.

**Maximum Recoat: Unlimited. Must have a clean, dry surface for top-coating. "Loose" chalk or salts must be removed in accordance with good painting practice.

Paint temperature must be at least 40°F (4.5°C) minimum.

Pot Life: 6 hours 4 hours 2 hours

Sweat-in-Time: 1 hour 30 minutes 15 minutes

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 MEK, R6K10. Clean tools immediately after use with MEK, R6K10. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

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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 performance.

Do not mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with MEK, R6K10.

Keep pressure pot at level of applicator to avoid blocking of fluid line due to weight of material. Blow back coating in fluid line at intermittent shutdowns, but continue agitation at pressure pot.

SSPC-SP11 surface preparation is acceptable for small areas.

Higher dry film thickness may be acceptable under certain conditions. Contact your Sherwin-Williams representative.

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

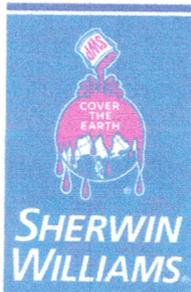
SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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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.



Protective & Marine Coatings

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A B65-600
PART A B65-650
PART B B65V600

GLOSS SERIES
SEMI-GLOSS SERIES
HARDENER

Revised: September 5, 2014

APPLICATION BULLETIN

5.22

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 six parts by volume of Part A with one part by volume of Part B (premeasured components). Thoroughly agitate the mixture with power agitation. 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)	4.5 (112.5)	9.0 (225)
Dry mils (microns)	3.0 (75)	6.0 (150)
~Coverage sq ft/gal (m ² /L)	175 (4.3)	346 (8.5)
Theoretical coverage sq ft/gal (m ² /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 @ 6.0 mils wet (150 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	4 hours	30 minutes	20 minutes
To handle:	18 hours	6 hours	4 hours
To recoat:			
minimum:	18 hours	8 hours	6 hours
maximum:	3 months	3 months	3 months
To cure:	14 days	7 days	5 days
Pot Life:	4 hours	2 hours	45 minutes
(reduced 5% with Reducer R7K15)			
Sweat-in-Time:	None		

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. Paint temperature must be at least 40°F (4.5°C) minimum.

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

CLEAN UP INSTRUCTIONS

Clean spills and splatters immediately with Reducer #132, R7K132. Clean tools immediately after use with Reducer #132, R7K132. 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 #15, R7K15 or MEK, R6K10.

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.

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

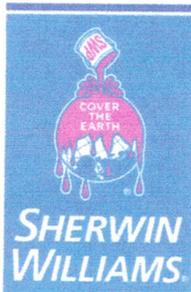
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Protective & Marine Coatings

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A B65-600
PART A B65-650
PART B B65V600

GLOSS SERIES
SEMI-GLOSS SERIES
HARDENER

Revised: September 5, 2014

APPLICATION BULLETIN

5.22

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.

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. 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 7	3
Brush-Off Blast	Sa 1	Sa 1	SP 4	3
Hand Tool Cleaning	CC 2	CC 2	SP 2	4
Pitted & Rusted	DC 2	DC 2	SP 3	-
Rusted	CC 3	CC 3	SP 3	-
Power Tool Cleaning	DC 3	DC 3	SP 3	-
Pitted & Rusted	DC 3	DC 3	SP 3	-

APPLICATION CONDITIONS

Temperature: 35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface)
40°F (4.5°C) minimum, 120°F (49°C) maximum (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:

Spray.....Reducer R7K15, MEK R6K10, or R7K111
Brush/Roll.....Reducer #132, R7K132, or R7K111
If reducer is used, reduce at time of catalyzation.

Airless Spray

Pressure.....2500 - 2800 psi
Hose.....3/8" ID
Tip......013" - .017"
Filter.....60 mesh
Reduction.....As needed up to 10% by volume with R7K15 or R7K111, or up to 9% with MEK, R6K10*

Conventional Spray

Gun.....Binks 95
Cap.....63P
Atomization Pressure.....50 - 70 psi
Fluid Pressure.....20 - 25 psi
Reduction.....As needed up to 10% by volume with R7K15 or R7K111, or up to 9% with MEK, R6K10*

Brush

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

Roller

Cover.....3/8" 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.

* Note: Reducing more than maximum recommended level will result in VOC exceeding 340g/L



Protective & Marine Coatings

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A B65-600
PART A B65-650
PART B B65V600

GLOSS SERIES
SEMI-GLOSS SERIES
HARDENER

Revised: September 5, 2014

PRODUCT INFORMATION

5.22

RECOMMENDED SYSTEMS

	Dry Film Thickness / ct.	
	Mils	(Microns)
Steel:		
1 ct. Macropoxy 646	5.0-10.0	(125-250)
1-2 cts. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:		
1 ct. Zinc Clad II Plus	3.0-5.0	(75-125)
1 ct. Macropoxy 646	5.0-10.0	(125-250)
1-2 cts. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:		
1 ct. Zinc Clad IV	3.0-5.0	(75-125)
1-2 cts. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:		
1 ct. Corothane I-GalvaPac Zinc Primer	3.0-4.0	(75-100)
1-2 cts. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:		
1 ct. Epoxy Mastic Aluminum II	6.0	(150)
1-2 cts. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:		
1 ct. Recoatable Epoxy Primer	4.0-6.0	(100-150)
1-2 cts. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Concrete/Masonry:		
1 ct. Kem Cati-Coat HS Epoxy Filler/Sealer	10.0-20.0	(250-500)
1-2 cts. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Aluminum/Galvanizing:		
1 ct. DTM Wash Primer	0.7-1.3	(18-32)
1-2 cts. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
ISO 12944 C5M System:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1 ct. Tower Guard Epoxy	5.0-11.5	(125-287.5)
1 ct. Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)

FIRETEX ONLY:

Finish Coat for FIRETEX Hydrocarbon Systems:

1 ct. Acrolon 218 HS 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.

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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, 1-2 mil (25-50 micron) profile
- * Galvanizing: SSPC-SP1
- * Concrete & Masonry: SSPC-SP13/NACE 6, or ICR1 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 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	DC St 2	DC St 2	SP 2	-
Pitted & Rusted	DC St 2	DC St 2	SP 2	-
Power Tool Cleaning	Rusted	DC St 3	SP 3	-
Pitted & Rusted	D St 3	DC St 3	SP 3	-

TINTING

Tint Part A with Maxitoner Colorants.

- Extra white tints at 100% tint strength
- Ultradeep base 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 and surface)
40°F (4.5°C) minimum, 120°F (49°C) maximum (material)
Relative humidity: At least 5°F (2.8°C) above dew point
85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging: 1 gallon (3.78L) mix; 5 gallon (18.9L) mix
Part A: .86 gal (3.25L) 4.29 gal (16.2L)
Part B: .14 gal (0.53L) 0.71 gal (2.7L)
(premeasured components)

Weight: 11.2 ± 0.2 lb/gal ; 1.3 Kg/L
mixed, may vary with color

SAFETY PRECAUTIONS

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Protective & Marine Coatings

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A B65-600
PART A B65-650
PART B B65V600

GLOSS SERIES
SEMI-GLOSS SERIES
HARDENER

Revised: September 5, 2014

PRODUCT INFORMATION

5.22

PRODUCT DESCRIPTION

ACROLON 218 HS is a low VOC, polyester modified, aliphatic, acrylic polyurethane formulated specifically for in-shop applications. Also suitable for industrial applications. A fast drying, urethane that provides color and gloss retention for exterior exposure.

- Can be used directly over organic zinc rich primers (epoxy zinc primer and moisture cure urethane zinc primer)
- Color and gloss retention for exterior exposure
- Fast dry
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Gloss or Semi-Gloss
Color:	Wide range of colors available
Volume Solids:	65% ± 2%, mixed, may vary by color
Weight Solids:	78% ± 2%, mixed, may vary by color
VOC (EPA Method 24):	Unreduced: <300 g/L; 2.5 lb/gal mixed Reduced 10% with R7K15: <340 g/L; 2.8 lb/gal mixed Reduced 9% with MEK, R6K10: <340 g/L; 2.8 lb/gal
Mix Ratio:	6:1 by volume, 1 gallon or 5 gallon mixes premeasured components

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.5 (112.5)	9.0 (225)
Dry mils (microns)	3.0 (75)	6.0 (150)
~Coverage sq ft/gal (m ² /L)	175 (4.3)	346 (8.5)
Theoretical coverage sq ft/gal (m ² /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 @ 6.0 mils wet (150 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	4 hours	30 minutes	20 minutes
To handle:	18 hours	6 hours	4 hours
To recoat:			
minimum:	18 hours	8 hours	6 hours
maximum:	3 months	3 months	3 months
To cure:	14 days	7 days	5 days
Pot Life:	4 hours	2 hours	45 minutes
(reduced 5% with Reducer R7K15)			
Sweat-in-Time:		None	

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. Paint temperature must be at least 40°F (4.5°C) minimum.

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).
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*Aluminum (Part A, Rex # B65SW655) has a shelf life of 24 months.

Flash Point:	55°F (13°C), Seta, mixed
Reducer/Clean Up:	
Spray:	Reducer R7K15, MEK R6K10, or R7K111
Brush / Roll:	Reducer #132, R7K132 or R7K111

RECOMMENDED USES

Specifically formulated for in-shop applications. For use over prepared metal and masonry surfaces in industrial environments such as:

- Structural steel
- Rail cars and locomotives
- Conveyors
- Bridges
- Wind Towers - onshore and offshore
- Offshore platforms - exploration and production
- Suitable for use in USDA inspected facilities
- Conforms to AWWA D102 Outside Coating Systems #4 (OCS-4), #5 (OCS-5) & #6 (OCS-6)
- Acceptable for use in high performance architectural applications
- Acceptable for use over Stampede 1 and Stampede 1H Caulking
- A component of INFINITANK
- Over FIRETEX hydrocarbon systems
- Suitable for use in the Mining & Minerals Industry

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

1 ct. Macropoxy 646 @ 6.0 mils (150 microns) dft

1 ct. Acrolon 218 HS Gloss @ 4.0 mils (100 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance ¹	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	43 mg loss
Adhesion ²	ASTM D4541	1976 psi
Corrosion Weathering ²	ASTM D5894, 27 cycles, 9072 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering
Direct Impact Resistance ¹	ASTM D2794	50 in. lb.
Dry Heat Resistance ¹	ASTM D2485, Method A	200°F (93°C)
Flexibility ¹	ASTM D522, 180° bend, 1/8" mandrel	Passes
Humidity Resistance ²	ASTM D4585, 100°F (38°C), 1500 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering
Pencil Hardness	ASTM D3363	3H
Salt Fog Resistance ³	ASTM B117, 15,000 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering

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

Complies with ISO 12944-5 C5I and C5M requirements.

Footnotes:

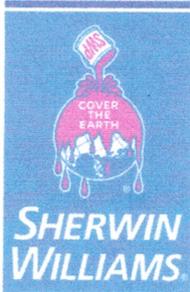
¹ Finish coat only tested

² Primer Zinc-Clad II Plus

Intermediate Macropoxy 646

Finish Acrolon 218 HS

³ Primer Zinc-Clad III HS



Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A
PART B

B58-600
B58V600

SERIES
HARDENER

Revised: January 8, 2015

PRODUCT INFORMATION

4.53

PRODUCT DESCRIPTION

MACROPOXY 646 FAST CURE EPOXY is a high solids, high build, fast drying, polyamide epoxy designed to protect steel and concrete in industrial exposures. Ideal for maintenance painting and fabrication shop applications. The high solids content ensures adequate protection of sharp edges, corners, and welds. This product can be applied directly to marginally prepared steel surfaces.

- Low VOC
- Low odor
- Outstanding application properties
- Meets Class A requirements for Slip Coefficient, 0.36 @ 6 mils / 150 microns dft (Mill White only)
- Chemical resistant
- Abrasion resistant

PRODUCT CHARACTERISTICS

Finish:	Semi-Gloss
Color:	Mill White, Black and a wide range of colors available through tinting
Volume Solids:	72% ± 2%, mixed, Mill White
Weight Solids:	85% ± 2%, mixed, Mill White
VOC (EPA Method 24):	Unreduced: <250 g/L; 2.08 lb/gal Reduced 10%: <300 g/L; 2.50 lb/gal
Mix Ratio:	1:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	7.0 (175)	13.5 (338)
Dry mils (microns)	5.0* (125)	10.0* (250)
~Coverage sq ft/gal (m²/L)	116 (2.8)	232 (5.7)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1152 (28.2)	

*May be applied at 3.0-10.0 mils (75-250 microns) dft as an intermediate coat in a multi-coat system. Refer to Recommended Systems (page 2). See Performance Tips section also.

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

Drying Schedule @ 7.0 mils wet (175 microns):

	@ 35°F/1.7°C	@ 77°F/25°C	@ 100°F/38°C
		50% RH	
To touch:	4-5 hours	2 hours	1.5 hours
To handle:	48 hours	8 hours	4.5 hours
To recoat:			
minimum:	48 hours	8 hours	4.5 hours
maximum:	1 year	1 year	1 year
To cure:			
Service:	10 days	7 days	4 days
Immersion:	14 days	7 days	4 days
<i>If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. Paint temperature must be at least 40°F (4.5°C) minimum.</i>			
Pot Life:	10 hours	4 hours	2 hours
Sweat-in-time:	30 minutes	30 minutes	15 minutes

When used as an intermediate coat as part of a multi-coat system:

Drying Schedule @ 5.0 mils wet (125 microns):

	@ 35°F/1.7°C	@ 77°F/25°C	@ 100°F/38°C
		50% RH	
To touch:	3 hours	1 hour	1 hour
To handle:	48 hours	4 hours	2 hours
To recoat:			
minimum:	16 hours	4 hours	2 hours
maximum:	1 year	1 year	1 year

PRODUCT CHARACTERISTICS (CONT'D)

Shelf Life:	36 months, unopened Store indoors at 40°F (4.5°C) to 110°F (43°C).
Flash Point:	91°F (33°C), TCC, mixed
Reducer/Clean Up:	Reducer, R7K15
In California:	Reducer R7K111 or Oxsol 100

PERFORMANCE CHARACTERISTICS

Substrate*: Steel
Surface Preparation*: SSPC-SP10/NACE 2
System Tested*:
 1 ct. Macropoxy 646 Fast Cure @ 6.0 mils (150 microns) dft
 *unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	84 mg loss
Accelerated Weathering-QUV¹	ASTM D4587, QUV-A, 12,000 hours	Passes
Adhesion	ASTM D4541	1,037 psi
Corrosion Weathering¹	ASTM D5894, 36 cycles, 12,000 hours	Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 per rusting
Nuclear Decontamination	ASTM D4256/ANSI N 5.12	99% Water Wash; 95% Overall
Direct Impact Resistance²	ASTM D2794	120 in. lb.
Dry Heat Resistance	ASTM D2485	250°F (121°C)
Exterior Durability	1 year at 45° South	Excellent, chalks
Flexibility	ASTM D522, 180° bend, 3/4" mandrel	Passes
Fuel Contribution	NFPA 259	5764 btu/lb
Humidity Resistance	ASTM D4585, 6000 hours	No blistering, cracking, or rusting
Immersion	1 year fresh and salt water	Passes, no rusting, blistering, or loss of adhesion
Radiation Tolerance	ASTM D4082 / ANSI 5.12	Pass at 21 mils (525 microns)
Pencil Hardness	ASTM D3363	3H
Salt Fog Resistance¹	ASTM B117, 6,500 hours	Rating 10 per ASTM D610 for rusting; Rating 9 per ASTM D1654 for corrosion
Slip Coefficient, Mill White[*]	AISC Specification for Structural Joints Using ASTM A325 or ASTM A490 Bolts	Class A, 0.36
Surface Burning	ASTM E84/NFPA 255	Flame Spread Index 20; Smoke Development Index 35 (at 18 mils or 450 microns)
Water Vapor Permeance	ASTM D1653, Method B	1.16 US perms

Epoxy coatings may darken or discolor following application and curing.

*Refer to Slip Certification document

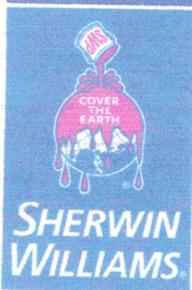
¹Footnotes:

¹ Zinc Clad II Plus Primer

² Two coats of Macropoxy 646 Fast Cure Epoxy

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.



Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A B58-600
PART B B58V600

SERIES
HARDENER

Revised: January 8, 2015

APPLICATION BULLETIN

4.53

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 one part 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 prior to application. Re-stir before using.

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

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

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	7.0 (175)	13.5 (338)
Dry mils (microns)	5.0* (125)	10.0* (250)
~Coverage sq ft/gal (m ² /L)	116 (2.8)	232 (5.7)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1152 (28.2)	

*May be applied at 3.0-10.0 mils (75-250 microns) dft in atmospheric conditions. Refer to Recommended Systems (page 2). See Performance Tips section also.

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

Drying Schedule @ 7.0 mils wet (175 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
To touch:	4-5 hours	2 hours	1.5 hours
To handle:	48 hours	8 hours	4.5 hours
To recoat:			
minimum:	48 hours	8 hours	4.5 hours
maximum:	1 year	1 year	1 year
To cure:			
Service:	10 days	7 days	4 days
Immersion:	14 days	7 days	4 days

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Paint temperature must be at least 40°F (4.5°C) minimum.

Pot Life:	10 hours	4 hours	2 hours
Sweat-in-time:	30 minutes	30 minutes	15 minutes

When used as an intermediate coat as part of a multi-coat system:

Drying Schedule @ 5.0 mils wet (125 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
To touch:	3 hours	1 hour	1 hour
To handle:	48 hours	4 hours	2 hours
To recoat:			
minimum:	16 hours	4 hours	2 hours
maximum:	1 year	1 year	1 year

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 R7K15. Clean tools immediately after use with Reducer R7K15. In California use Reducer R7K111. Follow manufacturer's safety recommendations when using any solvent.

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 mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer R7K15. In California use Reducer R7K111.

Tinting is not recommended for immersion service.

Use only Mill White and Black for immersion service.

Insufficient ventilation, incomplete mixing, miscatalyzation, and external heaters may cause premature yellowing.

Excessive film build, poor ventilation, and cool temperatures may cause solvent entrapment and premature coating failure.

Quik-Kick Epoxy Accelerator is acceptable for use. See data page 4.99 for details.

When coating over aluminum and galvanizing, recommended dft is 2-4 mils (50-100 microns).

Acceptable for Concrete Floors.

Can be used as a metalizing sealer. Consult Technical Bulletin - Sealers for Thermal Spray Metalizing, or your local Sherwin-Williams representative.

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

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.

DISCLAIMER

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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.



Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A B58-600
PART B B58V600

SERIES HARDENER

Revised: January 8, 2015

APPLICATION BULLETIN

4.53

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, Atmospheric Service:

Minimum surface preparation is Hand Tool Clean per SSPC-SP2. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6/NACE 3, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel within 8 hours or before flash rusting occurs.

Iron & Steel, Immersion Service:

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). Remove all weld spatter and round all sharp edges by grinding. Prime any bare steel the same day as it is cleaned.

Aluminum

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

Galvanized Steel

Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1 (recommended solvent is VM&P Naphtha). 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. In preparing galvanized steel substrates for the application of FIRE-TEX intumescent coating systems, Surface Preparation Specification SSPC-SP 16 must be followed obtaining a surface profile of minimum 1.5 mils (38 microns). Optimum surface profile will not exceed 2.0 mils (50 microns).

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.

Concrete, Immersion Service:

For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310.2R, CSP 2-4.

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.

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	Sp 3	Sa 3	SP 5	1
Near White Metal	Sp 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sp 1	Sa 1	SP 3	4
Brush-Off Blast	Sp 1	Sa 1	SP 3	4
Hand Tool Cleaning	St 2	St 2	SP 2	2
Pitted & Rusted	St 2	St 2	SP 2	2
Rusted	St 3	St 3	SP 3	3
Power Tool Cleaning	St 3	St 3	SP 3	3
Pitted & Rusted	St 3	St 3	SP 3	3

APPLICATION CONDITIONS

Temperature:	35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (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 Reducer R7K15
In California..... Reducer R7K111

Airless Spray

Pump.....	30:1
Pressure.....	2800 - 3000 psi
Hose.....	1/4" ID
Tip.....	.017" - .023"
Filter.....	60 mesh
Reduction.....	As needed up to 10% by volume

Conventional Spray

Gun.....	DeVilbiss MBC-510
Fluid Tip.....	E
Air Nozzle.....	704
Atomization Pressure.....	60-65 psi
Fluid Pressure.....	10-20 psi
Reduction.....	As needed up to 10% by volume
Requires oil and moisture separators	

Brush

Brush.....	Nylon/Polyester or Natural Bristle
Reduction.....	Not recommended

Roller

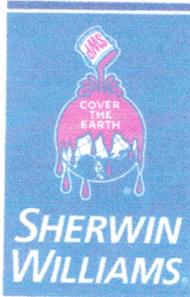
Cover.....	3/8" woven with solvent resistant core
Reduction.....	Not recommended

Plural Component Spray ... Acceptable

Refer to April 2010 Technical Bulletin - "Application Guidelines for Macropoxy 646 Fast Cure Epoxy & Recoatable Epoxy

Primer Utilizing Plural Component Equipment"

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



Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A B58-600
PART B B58V600

SERIES HARDENER

Revised: January 8, 2015

PRODUCT INFORMATION

4.53

RECOMMENDED USES

- Marine applications
- Fabrication shops
- Pulp and paper mills
- Power plants
- Offshore platforms
- Nuclear Power Plants
- Nuclear fabrication shops
- Mill White and Black are acceptable for immersion use for salt water and fresh water, not acceptable for potable water
- Suitable for use in USDA inspected facilities
- Acceptable for use in Canadian Food Processing facilities, categories: D1, D2, D3 (Confirm acceptance of specific part numbers/boxes with your SW Sales Representative)
- Conforms to AWWA D102 OCS #5
- Conforms to MPI # 108
- This product meets specific design requirements for non-safety related nuclear plant applications in Level II, III and Balance of Plant, and DOE nuclear facilities*.
- * Nuclear qualifications are NRC license specific to the facility.
- Suitable for use in the Mining & Minerals Industry

- Refineries
- Chemical plants
- Tank exteriors
- Water treatment plants
- DOE Nuclear Fuel Facilities
- DOE Nuclear Weapons Facilities

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Immersion and atmospheric:			
Steel:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Concrete/Masonry, smooth:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Concrete Block:			
1 ct.	Kem Cati-Coat HS Epoxy Filler/Sealer	10.0-20.0	(250-500)
<i>as needed to fill voids and provide a continuous substrate.</i>			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Atmospheric:			
Steel:			
(Shop applied system, new construction, AWWA D102, can also be used at 3 mils / 75 microns minimum dft when used as an intermediate coat as part of a multi-coat system)			
1 ct.	Macropoxy 646 Fast Cure Epoxy	3.0-6.0	(75-150)
1-2 cts.	of recommended topcoat		
Steel:			
1 ct.	Recoatable Epoxy Primer	4.0-6.0	(100-150)
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Steel:			
1 ct.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
or	Hi-Solids Polyurethane	3.0-5.0	(75-125)
or	SherThane 2K Urethane	2.0-4.0	(50-100)
or	Hydrogloss	2.0-4.0	(50-100)
Steel:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
1-2 cts.	Tile-Clad HS Epoxy	2.5-4.0	(63-100)
Steel:			
1 ct.	Zinc Clad II Plus	2.0-4.0	(50-100)
1 ct.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Zinc Clad III HS	3.0-5.0	(75-125)
or	Zinc Clad IV	3.0-5.0	(75-125)
1 ct.	Macropoxy 646 Fast Cure Epoxy	3.0-10.0	(75-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
Aluminum:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Galvanizing:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
FIRETEX ONLY:			
Steel & Galvanized Substrates being primed for FIRETEX only:			
1 ct.	Macropoxy 646 Fast Cure Epoxy	2.0-5.0	(50-125)

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	
Atmospheric:	SSPC-SP2/3
Immersion:	SSPC-SP10/NACE 2, 2-3 mil (50-75 micron) profile
Aluminum:	SSPC-SP1
Galvanizing:	SSPC-SP1; See Surface Preparations section on page 3 for application of FIRETEX intumescent coating systems
Concrete & Masonry	
Atmospheric:	SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3
Immersion:	SSPC-SP13/NACE 6-4.3.1 or 4.3.2, or ICRI No. 310.2R, CSP 2-4

Surface Preparation Standards

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

TINTING

Tint Part A with Maxitones at 150% strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

Tinting is not recommended for immersion service.

APPLICATION CONDITIONS

Temperature:	35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (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) and 5 gallon (18.9L) containers
Part B:	1 gallon (3.78L) and 5 gallon (18.9L) containers
Weight:	12.9 ± 0.2 lb/gal ; 1.55 Kg/L mixed, 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.



Protective & Marine Coatings

ZINC CLAD® III HS ORGANIC ZINC-RICH EPOXY PRIMER

PART A
PART A
PART B
PART F

B69A100
B69LW100
B69V100
B69D11

GRAY-GREEN, BASE
OAP BLUE, BASE
HARDENER
ZINC DUST

Revised: January 19, 2015

APPLICATION BULLETIN

6.07

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.

Zinc rich coatings require direct contact between the zinc pigment in the coating and the metal substrate for optimum performance.

Iron & Steel (atmospheric service)

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). Coat any bare steel the same day as it is cleaned or before flash rusting occurs.

Galvanized Steel

Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1 (recommended solvent is VM&P Naphtha). 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.

Weathered Zinc-Rich Primer

Remove zinc salts by either high pressure water washing and scrubbing with stiff bristle brush or sweep blast followed by water flush. Allow to dry.

Note: If blast cleaning with steel media is used, an appropriate amount of steel grit blast media may be incorporated into the work mix to render a dense, angular 1.5-3.0 mil (38-75 micron) surface profile, per Keane-Tator Surface Profile Comparator. A profile up to 4 mils (100 microns) is acceptable, however, coating must be applied to achieve a minimum of 3 mils (75 microns) dft. This method may result in improved adhesion and performance.

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	St 2	St 2	SP 2	-
Rusted	St 3	St 3	SP 3	-
Pitted & Rusted	St 3	St 3	SP 3	-
Rusted	St 3	St 3	SP 3	-
Power Tool Cleaning	St 3	St 3	SP 3	-
Pitted & Rusted	St 3	St 3	SP 3	-

APPLICATION CONDITIONS

Temperature: 35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface)
40°F (4.5°C) minimum, 120°F (49°C) maximum (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 Reducer #58, R7K58 or MEK, R6K10
Above 80°F Reducer #58, R7K58 or R7K104

Airless Spray

(use Teflon packings and continuous agitation)

Pressure.....2000 - 2300 psi
Hose.....3/8" ID
Tip019"
Filternone
Reduction.....As needed up to 5% by volume

Conventional Spray

(continuous agitation required)

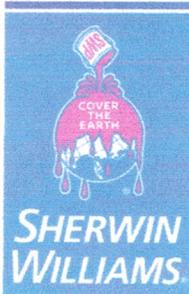
GunBinks 95
Fluid Nozzle68
Air Nozzle.....68P
Atomization Pressure.....50 psi
Fluid Pressure.....10 - 20 psi
Reduction.....As needed up to 5% by volume

Keep pressure pot at level of applicator to avoid blocking of fluid line due to weight of material. Blow back coating in fluid line at intermittent shutdowns, but continue agitation at pressure pot.

Brush

Brush.....Small areas only; natural bristle
Reduction.....Not recommended

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



Protective & Marine Coatings

ZINC CLAD® III HS ORGANIC ZINC-RICH EPOXY PRIMER

PART A
PART A
PART B
PART F

B69A100
B69LW100
B69V100
B69D11

GRAY-GREEN, BASE
OAP BLUE, BASE
HARDENER
ZINC DUST

Revised: January 19, 2015

PRODUCT INFORMATION

6.07

RECOMMENDED SYSTEMS

	Dry Film Thickness / ct.	
	Mils	(Microns)
Steel, polyurethane topcoat:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1-2 cts. Acrolon 218 HS	3.0-6.0	(75-150)
Steel, catalyzed epoxy topcoat:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1-2 cts. Macropoxy 646	5.0-10.0	(125-250)
Steel, catalyzed epoxy topcoat:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1-2 cts. Tile-Clad HS	2.5-4.0	(63-100)
Steel, catalyzed epoxy siloxane topcoat:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1-2 cts. Polysiloxane XLE-80	3.0-7.0	(75-175)
or		
1-2 cts. Polysiloxane XLE-80 HAPS Free	3.0-7.0	(75-175)
Steel, acrylic topcoat:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
2 cts. Pro Industrial DTM Acrylic Coating	2.5-4.0	(63-100)
or		
1 ct. Fast Clad HB Acrylic	5.0-8.0	(125-200)
Steel, water based epoxy topcoat:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
2 cts. Waterbased Tile-Clad Epoxy	2.0-4.0	(50-100)
Steel, water-based urethane topcoat:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1 ct. Waterbased Tile-Clad Epoxy	2.0-4.0	(50-100)
1-2 cts. Hydrogloss	2.0-4.0	(50-100)
Steel, Class B Compliant System:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1 ct. Steel Spec Epoxy Primer (red)	4.0-6.0	(100-150)
ISO 12944 C5M System:		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1 ct. Fast Clad Urethane	6.0-9.0	(150-225)
or		
1 ct. Zinc Clad III HS	3.0-5.0	(75-125)
1 ct. Tower Guard Epoxy	5.0-11.5	(125-287.5)
1 ct. Acrolon 218 HS	3.0-6.0	(75-150)
FIRETEX ONLY		
Steel Substrate being primed for FIRSETEX M90 and M90/2		
1 ct. Zinc Clad III HS	3.0-6.0	(75-150)

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, 2 mil (50 micron) profile
Galvanizing:	SSPC-SP7
Weathered Zinc Rich Primer:	Clean, dry, sound

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 6	2
Commercial Blast	Sa 2	Sa 2	SP 7	3
Brush-Off Blast	Sa 1	Sa 1	SP 8	4
Hand Tool Cleaning	CS 2	CS 2	SP 2	-
Pitted & Rusted	CS 2	CS 2	SP 3	-
Power Tool Cleaning	CS 3	CS 3	SP 3	-
Rusted	CS 3	CS 3	SP 3	-
Pitted & Rusted	CS 3	CS 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:	35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (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:	
3.25 gallons (12.3L) mixed:	
Part A	1 gallon (3.78L)
Part B	1 gallon (3.78L)
Part F	73 lb (33 Kg) Zinc Dust
1 gallon (3.78L) mixed:	
Part A	0.30 gallon (1.14L)
Part B	0.30 gallon (1.14L)
Part F	22 lb (10 Kg) Zinc Dust

Weight: 27.63 ± 0.2 lb/gal ; 3.31 Kg/L, mixed

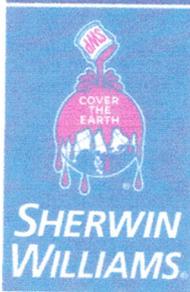
SAFETY PRECAUTIONS

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.



Protective & Marine Coatings

ZINC CLAD® III HS ORGANIC ZINC-RICH EPOXY PRIMER

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ZINC DUST

Revised: January 19, 2015

PRODUCT INFORMATION

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PRODUCT DESCRIPTION

ZINC CLAD III HS is a three-component, polyamide epoxy, zinc-rich coating. It has a low VOC level and contains 90.5% by weight of zinc dust pigment in its dried film.

- Meets Class B requirements for Slip Coefficient and Creep Resistance
- Provides cathodic protection
- Damaged film exhibits "self-healing" properties
- Fast Recoat Time
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Flat
Color:	Gray-Green, OAP Blue
Volume Solids:	70% ± 2%, ASTM D2697
Weight Solids:	90% ± 2%, mixed
VOC (EPA Method 24):	Unreduced: <340 g/L; 2.80 lb/gal mixed Reduced 5%: <360 g/L; 3.00 lb/gal
Zinc Dust Pigment Content in Dry Film:	ASTM D 521 90% Min ASTM D 6580 85% Min
Mix Ratio:	3 components, premeasured 3.25 gallons (12.3L) total

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.5 (113)	7.0 (175)
Dry mils (microns)	3.0 (75)	5.0 (125)
~Coverage sq ft/gal (m²/L)	224 (5.5)	370 (9.1)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1120 (27.5)	

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

Drying Schedule @ 5.0 mils wet (125 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	45 minutes	30 minutes	10 minutes
To handle:	2 hours	1 hour	30 minutes
To recoat*:			
minimum:	4 hours	30 minutes	30 minutes
**maximum:	none	none	none
To cure:	10 days	7 days	7 days

Drying time is temperature, humidity, and film thickness dependent.

*NOTE: Film must be free of solvent, hard and firm. When rubbed with the face of a coin or knife the film should polish but not flake or chip.

**Maximum Recoat: Unlimited. Must have a clean, dry surface for top-coating. "Loose" chalk or salts must be removed in accordance with good painting practice.

Paint temperature must be at least 40°F (4.5°C) minimum.

Pot Life:	6 hours	4 hours	2 hours
Sweat-In-Time:	1 hour	30 minutes	15 minutes

Shelf Life:	Part A*: 18 months, unopened Part B: 18 months, unopened Part F: 24 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C)
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*B69LW100 (Part A) has a 12 month shelf life

PRODUCT CHARACTERISTICS (CONT'D)

Flash Point:	58°F (14°C) Seta Flash, mixed
Reducer/Clean Up:	Reducer #58 (R7K58) or MEK, R6K10
Below 80°F (27°C):	
Above 80°F (27°C):	Reducer #58 (R7K58) or R7K104

RECOMMENDED USES

- For use over properly prepared blasted steel.
- Fabrication Shops
 - Bridge and Highway Structures
 - Stadiums and Sports Complexes
 - Drilling Rigs
 - Piping
 - Refineries
 - Barges and Ships
 - Wind Towers - onshore and offshore
 - Shop or Field Applications
 - Not recommended for immersion service
 - Approved with FIRETEX hydrocarbon coatings

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

- 1 ct. Zinc Clad III HS @ 5.0 mils (125 microns) dft
- 1 ct. Macropoxy 646 @ 5.0-10.0 mils (125-250 microns) dft
- 1 ct. Acrolon 218 HS @ 5.0 mils (125 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Adhesion	ASTM D4541	1976 psi
Corrosion Weathering	ASTM D5894, 27 cycles, 9072 hours	Rating 10 per ASTM D610 for rusting; Rating 10 per ASTM D714 for blistering
Dry Heat Resistance (zinc only)	ASTM D2485	400°F (204°C)
Moisture Condensation Resistance	ASTM D4585, 100°F (38°C), 4000 hours	Rating 10 per ASTM D610 for rusting; Rating 10 per ASTM D714 for blistering
Pencil Hardness (zinc only)	ASTM D3363	2H
Salt Fog Resistance	ASTM B117, 15,000 hours	Rating 10 per ASTM D610 for rusting; Rating 10 per ASTM D714 for blistering
Slip Coefficient* (zinc only)	AISC Specifications for Structural Joints using ASTM A325 or ASTM A490 Bolts	Class B, 0.52
Slip Coefficient1*	AISC Specification for Structural Joints using ASTM A325 or ASTM A490 Bolts	Passes Class B, 0.58

Meets SSPC Paint Spec 20 - 1 ct. Zinc @ 5 mils (125 microns) dft
Complies with ISO 12944-5 C5I and C5M requirements.

Footnotes:

- 1 ct. Zinc Clad III HS @ 3.0-5.0 mils (75-125 microns) dft
- 1 ct. Steel Spec Epoxy Primer @ 4.0-6.0 mils (100-150 microns) dft

*Refer to Slip Certification document