



Protective & Marine Coatings

ZINC CLAD[®] 4100 ORGANIC ZINC-RICH EPOXY PRIMER

PART A
PART A
PART B
PART F

B69A120
B69P120
B69V120
B69D11

GRAY-GREEN, BASE
PURPLE, BASE
HARDENER
ZINC DUST

Revised: December 17, 2020

PRODUCT INFORMATION

6.27

PRODUCT DESCRIPTION

ZINC CLAD 4100 is a three-component, polyamide epoxy, zinc-rich coating. It contains 89.2% by weight of zinc dust pigment in its dried film.

- Meets Class B requirements for slip coefficient and creep resistance (Gray-Green only)
- Provides cathodic protection
- Damaged film exhibits "self-healing" properties
- Fast Recoat Time
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Flat
Color:	Gray-Green, Purple*
*made to order only	
Volume Solids:	74% ± 2%
Weight Solids:	90% ± 2%
VOC (mixed):	<320 g/L; 2.67 lb/gal unreduced <340 g/L; 2.80 lb/gal 5% reduction
Zinc Dust Pigment Content in Dry Film:	89.2%
Mix Ratio:	3 components, premeasured

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.0 (100)	7.0 (175)
Dry mils (microns)	3.0 (75)	5.0 (125)
~Coverage sq ft/gal (m²/L)	237 (6.0)	396 (9.7)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1187 (29.1)	

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):

@ 35°F/1.7°C @ 50°F/10°C @ 77°F/25°C @ 100°F/38°C
50% RH

To touch:	30 minutes	30 minutes	20 minutes	5 minutes
To handle:	120 minutes	100 minutes	60 minutes	15 minutes
To recoat:				
minimum:	4 hours	2 hours	30 minutes	20 minutes
maximum*:	unlimited	unlimited	unlimited	unlimited
*Maximum Recoat: Unlimited. Must have a clean, dry surface for topcoating. "Loose" chalk or salts must be removed in accordance with good painting practice.				
To cure:	7 days	7 days	5 days	3 days
<i>Drying time is temperature, humidity, and film thickness dependent.</i>				
Pot Life:	8 hours	8 hours	4 hours	2 hours
Sweat-in-Time:	none	none	none	none

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)
Flash Point:	62°F (17°C), Seta Flash, mixed
Reducer/Clean Up:	
Below 80°F (27°C):	Reducer #58 or MEK
Above 80°F (27°C):	Reducer #58 or Reducer #104

RECOMMENDED USES

For use over properly prepared steel.

- Bridge and Highway Structures
- Fabrication Shops
- Stadiums and sports complexes
- Drilling Rigs
- Piping
- Refineries
- Barges & ships
- Shop or field application

- Approved primer for NEPCOAT Systems B and C

PERFORMANCE CHARACTERISTICS

Substrate*: HRS A36

Surface Preparation*: SSPC-SP 10 / NACE 2

System Tested*:

- 1 ct. Zinc Clad 4100 @ 3.0-5.0 mils (75-125 microns) dft
 - 1 ct. Macropoxy 646 @ 3.0-10.0 mils (75-250 microns) dft
 - 1 ct. Hi-Solids Polyurethane 250 @ 3.0-5.0 mils (75-125 microns) dft
- *unless otherwise noted below

Test Name	Test Method	Results
Adhesion (Zinc Primer only)	ASTM D4541, PATTI	2,248 psi
Adhesion	ASTM D4541, PATTI	2,828 psi
Corrosion Weathering	ASTM D5894, 15 cycles, 5,040 hours	Rating 10 per ASTM D610 for rusting; Rating 10 per ASTM D714 for blistering
Dry Heat Resistance (Zinc Primer only)	ASTM D2485	400°F (204°C)
Salt Fog Resistance	ASTM B117, 5,040 hours	Rating 10 per ASTM D610 for rusting; Rating 10 per ASTM D714 for blistering
Slip Coefficient (Zinc Primer only)	AISC Specification for Structural Joints using ASTM A325 or ASTM A490 Bolts	Class B @5 mil DFT (72 hour cure)

Meets the requirements of SSPC Paint 20, Type II, Level I



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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Steel:			
1 ct.	Zinc Clad 4100	3.0-5.0	(75-125)
1-2 cts.	Macropoxy 646	3.0-10.0	(75-250)
1-2 cts.	Hi-Solids Polyurethane 250	3.0-5.0	(75-125)
1 ct.	Zinc Clad 4100	3.0-5.0	(75-125)
1-2 cts.	Macropoxy 646	3.0-10.0	(75-250)
1 ct.	Zinc Clad 4100	3.0-5.0	(75-125)
1-2 cts.	Macropoxy 646-100	3.0-10.0	(75-250)
1-2 cts.	Hi-Solids Polyurethane 250	3.0-5.0	(75-125)
1 ct.	Zinc Clad 4100	3.0-5.0	(75-125)
1-2 cts.	Hi-Solids Polyurethane 250	3.0-5.0	(75-125)
1 ct.	Zinc Clad 4100	3.0-5.0	(75-125)
1 ct.	Sher-Loxane 800	4.0-6.0	(100-150)

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

Ductile Iron Pipe:
Atmospheric: NAPF 500-03-03 Power Tool Cleaning
Buried & Immersion: NAPF 500-03-04 Abrasive Blast Cleaning
Cast Ductile Iron Fittings: NAPF 500-03-05 Abrasive Blast Cleaning

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	SSPC	NACE
White Metal	Sa 3	SP 5	1
Near White Metal	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted C St 2	SP 2	-
Pitted & Rusted	D St 2	SP 2	-
Rusted	C St 3	SP 3	-
Pitted & Rusted	D St 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) in a five gallon can
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: 27.82 ± 0.2 lb/gal ; 3.33 Kg/L, mixed

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.



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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.

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.

Ductile Iron Pipe, Atmospheric Service:

Minimum surface preparation is Power Tool Clean per NAPF 500-03-03. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

Ductile Iron Pipe, Buried and Immersion Service:

Minimum surface preparation is Abrasive Blast Cleaning per NAPF 500-03-04. Ductile iron pipe external surfaces, in some cases, can be damaged by excessive abrasive blast cleaning beyond this standard. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

Ductile Iron Fittings:

Minimum surface preparation is Abrasive Blast Cleaning of Cast Ductile Iron Fittings per NAPF 500-03-05. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

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-SP16 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 ASTM D4417 Method C. A profile up to 5 mils (125 microns) is acceptable, however, coating must be applied to achieve a minimum of 2-3 mils (50-75 microns) dft, above the surface profile. This method may result in improved adhesion and performance.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	SSPC	NACE
White Metal	Sa 3	SP 5	1
Near White Metal	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted C St 2	SP 2	-
	Pitted & Rusted D St 2	SP 2	-
Power Tool Cleaning	Rusted C St 3	SP 3	-
	Pitted & Rusted D 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 or MEK
Above 80°F Reducer #58 or Reducer #104

Airless Spray

(use Teflon packings and continuous agitation)

Pressure.....2000 - 2500 psi
Hose.....3/8" ID
Tip0.015" - .019"
Filter.....none
Reduction.....As needed up to 5% by volume

Conventional Spray

(continuous agitation required)

Gun Binks 95
Fluid Nozzle 68
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.



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APPLICATION PROCEDURES

Surface preparation must be completed as indicated. Zinc Clad 4100 comes in 3 premeasured containers which when mixed provide 3.25 gallons (12.3L) or 1 gallon (3.78 L) of ready-to-apply material depending on kit size.

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 the appropriately sized Part F (zinc dust). Thoroughly agitate the mixture with power agitation. After mixing, pour through a 30-60 mesh screen. Re-stir before using. If reducer solvent is used, add only after components have been thoroughly mixed. 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)	4.0 (100)	7.0 (175)
Dry mils (microns)	3.0 (75)	5.0 (125)
~Coverage sq ft/gal (m ² /L)	237 (6.0)	396 (9.7)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1187 (29.1)	

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):

@ 35°F/1.7°C @ 50°F/10°C @ 77°F/25°C @ 100°F/38°C

50% RH

To touch:	30 minutes	30 minutes	20 minutes	5 minutes
To handle:	120 minutes	100 minutes	60 minutes	15 minutes

To recoat:

minimum:	4 hours	2 hours	30 minutes	20 minutes
maximum*:	unlimited	unlimited	unlimited	unlimited

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

To cure: 7 days 7 days 5 days 3 days

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

Pot Life: 8 hours 8 hours 4 hours 2 hours

Sweat-in-Time: none none none none

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. Clean tools immediately after use with MEK. 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 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. A 1.0 mil (25 micron) minimum surface profile is required.

A maximum of 7 mils (175 microns) dry film thickness is acceptable. Consult your Sherwin-Williams representative for applications which may exceed this limit.

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

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