



# Protective & Marine Coatings

## ZINC CLAD™ IV 85% EPOXY ZINC-RICH PRIMER

Revised 07/2016 - Issue 5

### PRODUCT INFORMATION

#### PRODUCT DESCRIPTION

**ZINC CLAD IV** is a two-component, polyamide epoxy, zinc-rich coating. It has a low VOC level and contains 85% by weight of zinc dust pigment in the dried film.

- Meets SSPC-Paint 20 Type II, Organic, Level 1
- Zinc dust meets or exceeds the requirements for ASTM D520, Type II
- Meets Class A requirements for Slip Coefficient and Creep Resistance, Value = 0.49.
- Provides cathodic protection
- Damaged film exhibits "self-healing" properties

#### PRODUCT CHARACTERISTICS

<b>Finish:</b>	Flat
<b>Colour:</b>	Grey-green
<b>Volume Solids:</b>	68% ± 2%, mixed, ASTM D2697
<b>Weight Solids:</b>	90% ± 2%, mixed
<b>VOC (EPA Method 24):</b>	<340 g/L
<b>Zinc Content in Dry Film:</b>	85% by weight
<b>Mix Ratio:</b>	8:1 By Volume

#### Recommended Spreading Rate per coat:

	Minimum		Maximum	
<b>Wet microns (mils)</b>	<b>125</b>	(5.0)	<b>200</b>	(8.0)
<b>Dry microns (mils)</b>	<b>75</b>	(3.0)	<b>125</b>	(5.0)
<b>~Coverage m<sup>2</sup>/L (sgft/gal)</b>	<b>8.4</b>	(345)	<b>5.0</b>	(205)

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

#### Drying Schedule @ 125 microns (5.0 mils wet):

	@ 4.5°C (40°F)	@ 25°C (77°F) 50% RH	@ 43°C (110°F)
<b>To touch:</b>	45 minutes	30 minutes	15 minutes
<b>To handle:</b>	1.5 hours	1 hour	45 minutes
<b>To recoat*:</b>			
<b>minimum:</b>	6 hours	4 hours	2 hours
<b>maximum**:</b>	none	none	none
<b>To cure:</b>	10 days	10 days	7-10 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.*

<b>Pot Life:</b>	8 hours	6 hours	4 hours
<b>Sweat-in-Time:</b>	1 hour	30 minutes	15 minutes

#### PRODUCT CHARACTERISTICS (CONT'D)

<b>Shelf Life:</b>	18 months, unopened Store indoors at 4.5°C (40°F) to 38°C (100°F)
<b>Flash Point:</b>	27°C (80°F) PMCC, mixed
<b>Reducer/Clean Up:</b>	
Below 27°C (80°F):	MEK, Thinners 13
Above 27°C (80°F):	Reducer #58, R7K58 or MEK, Thinners 13

#### RECOMMENDED USES

For use over properly prepared blasted steel.

- Application to blasted steel surfaces
- Areas exposed to fresh and salt water
- Areas exposed to brackish water
- Areas exposed to chemical fumes
- Topcoating is recommended for maximum protection
- Not recommended for immersion service
- Suitable for use in the Mining & Minerals Industry

#### PERFORMANCE CHARACTERISTICS

**Substrate\*:** Steel

**Surface Preparation\*:** SSPC-SP10/NACE 2

**System Tested\*:**

1 ct. Zinc Clad IV @ 75 microns (3.0 mils) dft

*\*unless otherwise noted below*

Test Name	Test Method	Results
<b>Abrasion Resistance</b>	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	300 mg loss
<b>Adhesion</b>	ASTM D4541	1000 psi
<b>Dry Heat Resistance</b>	ASTM D2485	149°C (300°F)
<b>Exterior Durability</b>	1 year at 45° South	Good
<b>Flexibility</b>	ASTM D522, 180° bend, 1" mandrel	Passes
<b>Moisture Condensation Resistance</b>	ASTM D4585, 38°C (100°F), 1500 hours	Excellent
<b>Pencil Hardness</b>	ASTM D3363	2H
<b>Salt Fog Resistance</b>	ASTM B117, 1500 hours	Excellent
<b>Slip Coefficient* (zinc only)</b>	AISC Specifications for Structural Joints using ASTM A325 or ASTM A490 Bolts	Class A, 0.49

*\*Refer to Slip Certification document*



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#### RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Microns	(Mils)
<b>Steel, acrylic topcoat:</b>			
1 ct.	Zinc Clad IV	75-125	(3.0-5.0)
2 cts.	DTM Acrylic Coating	63-100	(2.5-4.0)
or			
1 ct.	Fast Clad HB Acrylic	125-200	(5.0-8.0)
<b>Steel, water based epoxy topcoat:</b>			
1 ct.	Zinc Clad IV	75-125	(3.0-5.0)
2 cts.	Water Based Catalyzed Epoxy	63-100	(2.5-4.0)
<b>Steel, catalyzed epoxy topcoat:</b>			
1 ct.	Zinc Clad IV	75-125	(3.0-5.0)
1-2 cts.	Macropoxy HS	75-150	(3.0-6.0)
or			
1-2 cts.	SeaGuard 5000 HS	100-175	(4.0-7.0)
or			
1-2 cts.	SeaGuard 6000	125-200	(5.0-8.0)
<b>Steel, high build epoxy topcoat:</b>			
1 ct.	Zinc Clad IV	75-125	(3.0-5.0)
1-2 cts.	Tile-Clad HS	63-100	(2.5-4.0)
<b>Steel, epoxy/urethane topcoat:</b>			
1 ct.	Zinc Clad IV	75-125	(3.0-5.0)
1 ct.	Macropoxy HS	75-150	(3.0-6.0)
1 ct.	Acrolon 218 HS Acrylic Polyurethane	75-150	(3.0-6.0)
<b>Steel, polyurethane topcoat:</b>			
1 ct.	Zinc Clad IV	75-125	(3.0-5.0)
1-2 cts.	Acrolon 218 HS	75-150	(3.0-6.0)

NOTE: 1 ct. of DTM Wash Primer can be used as an intermediate coat under recommended topcoats to prevent pinholing.

#### FIRETEX ONLY:

Steel Substrates being primed for FIRETEX M90, M90/02 and M93/02 only:

1 ct.	Zinc Clad IV	75-125	(3.0-5.0)
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#### Steel Substrates being primed for FIRETEX only:

1 ct.	Zinc Clad IV	75-125	(3.0-6.0)
1 ct.	Macropoxy 920 Pre-Prime	40-50	(1.6-2.0)

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/Sa2, 50 micron (2 mil) profile or SSPC-SP12/NACE 5 WJ-2L

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

#### TINTING

Do not tint.

#### APPLICATION CONDITIONS

Temperature: 4.5°C (40°F) minimum, 49°C (120°F) maximum (air, surface, and material)  
At least 3°C (5°F) above dew point

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

#### ORDERING INFORMATION

Packaging: 8.5L mixed  
Base 7.56L kit  
Hardener 0.94L

Weight: 3.17 Kg/L, mixed; 26.45 ± 0.2 lb/gal

#### 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

#### 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. For SSPC-SP12/NACE 5, all surfaces to be coated shall be cleaned in accordance with WJ-2L standards. Pre-existing profile should be approximately 2 mils (50 microns). Light rust bloom is allowed.

#### 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	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: 4.5°C (40°F) minimum, 49°C (120°F) maximum  
(air, surface, and material)  
At least 3°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 .....MEK, R6K10, Thinners 13  
Above 80°F .....Reducer #58, R7K58 or  
MEK, R6K10, Thinners 13

#### Airless Spray

(use Teflon packings and continuous agitation)

Pressure.....2000 - 2300 psi  
Hose.....3/8" ID  
Tip ..... 19 thou (0.48mm)  
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 BULLETIN

#### APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Zinc Clad IV comes in 2 premeasured containers which when mixed provides 8.5L (2.25 gallons) of ready-to-apply material.

#### Mixing Instructions:

Mix contents of each component thoroughly with a low speed power agitator. Make certain no pigment remains on the bottom of the can. Then combine 8 parts by volume of Base with 1 part by volume of Hardener. 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 both 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 microns (mils)	125 (5.0)	200 (8.0)
Dry microns (mils)	75 (3.0)	125 (5.0)
~Coverage m <sup>2</sup> /L (sgft/gal)	8.4 (345)	5.0 (205)

*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):

	@ 4.5°C (40°F)	@ 25°C (77°F)	@ 43°C (110°F)
	50% RH		
To touch:	45 minutes	30 minutes	15 minutes
To handle:	1.5 hours	1 hour	45 minutes
To recoat*:			
minimum:	6 hours	4 hours	2 hours
maximum**:	none	none	none
To cure:	10 days	10 days	7-10 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 topcoating. "Loose" chalk or salts must be removed in accordance with good painting practice.

Pot Life:	8 hours	6 hours	4 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.

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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.

Application above recommended film thickness may result in mud cracking.

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

#### SAFETY PRECAUTIONS

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