Protective & Marine Coatings

ZINC CLAD® DOT
INORGANIC ZINC-RICH COATING

PART A	B69VZ20	BASE
PART B	B69VZ18 (FOR 3.66 GAL KITS)	ACCELERATOR
PART B	B69VZ18B (FOR 1.10 GAL KITS)	ACCELERATOR
PART F	B69D11	ZINC DUST

Revised: May 9, 2022

PRODUCT INFORMATION

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PRODUCT DESCRIPTION

ZINC CLAD DOT is a solvent-based, three component, inorganic ethyl silicate, zinc rich coating. This is a fast drying, high solids coating with 84%, by weight, of zinc dust in the dry film.

- Coating self-heals to resume protection if damaged
- Provides cathodic/sacrificial protection by the same mechanism as galvanizing
- Forms an inorganic barrier to moisture and solvents
- Meets Class B requirements for Slip & Creep Resistance, 0.65
- HAPS free as supplied

PRODUCT CHARACTERISTICS

Finish:	Flat
Color:	Gray-Green
Volume Solids:	75% ± 2%, mixed
Weight Solids:	90% ± 2%, mixed
VOC (EPA Method 24):	<340 g/L; 2.8 lb/gal, mixed
Zinc Content in Dry Film:	84% ± 2% by weight
Mix Ratio:	3 components, premeasured 3.66 or 1.10 gallons mixed

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils:	**2.7**	**5.5**
Dry mils:	**2.0**	**4.0**
~Coverage sq ft/gal:	**300**	**600**

Dry film thickness in excess of 6.0 mils per coat is not recommended.

Drying Schedule @ 4.0 mils wet @ 50% RH:

	@ 40°F	@ 77°F	@ 100°F
To touch:	25 minutes	20 minutes	5 minutes
To handle:	1 hour	20 minutes	15 minutes
To topcoat:	7 days	24 hours	8 hours
To stack:	6 hours	2 hours	1 hour

Drying time is temperature, humidity, and film thickness dependent.
Do not topcoat until a rating of 4 is achieved after 50 MEK double rubs

Pot Life:	8 hours @ 77°F
Sweat-in-time:	None required, but material should be mixed for at least 5 minutes before use.

Shelf Life:	Part A - 18 months, unopened Part B - 24 months, unopened Part F - 24 months, unopened Store indoors at 40°F to 100°F.
Flast Point (mixed):	55°F
Reducer/Clean up: Above 70°F: Below 70°F:	 R7K111 (HAPS Free), R2K4 R7K111 (HAPS Free), R2K4, R2K5, R6K9

RECOMMENDED USES

For use over prepared blasted steel and galvanized steel in areas such as:

- Bridges
- Refineries
- Shop or field application
- Drilling rigs
- As a one-coat maintenance coating or as a permanent primer for severe corrosive environments (pH range 5-9)
- Ideal for application at low temperatures or service at high temperatures and/or humidity conditions
- Fresh and demineralized water immersion service (non-potable)

PERFORMANCE CHARACTERISTICS

Substrate*: Steel
Surface Preparation*: SSPC-SP10
System Tested*:
1 ct. Zinc Clad DOT @ 3.0 mils dft
*unless otherwise noted below

Test Name	Test Method	Results
Patti Adhesion	ASTM D4541	12.1 MPa= 1754 lb psi
Corrosion Weathering	ASTM D5894, 5040 hours	Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting
Corrosion Weathering[1]	ASTM D5894, 5040 hours	Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting
Direct Impact Resistance	ASTM D2794-92	60 in lbs.
Dry Heat Resistance	ASTM D2485	750°F
Flexibility	ASTM D522, 180° bend, 1" mandrel	Passes
Humidity[1]	ASTM D1654, Method 2, 4000 hours	Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting
Pencil Hardness	ASTM D3363	3H
Salt Fog Resistance	ASTM B117, 5000 hours	Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting
Salt Fog Resistance[1]	ASTM B117, 5000 hours	Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting

Footnotes:
[1] Zinc Clad DOT / Steel Spec Epoxy Intermediate / HS Poly

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils
Steel, Epoxy Topcoat, Atmospheric:		
1 ct.	Zinc Clad DOT	2.0-4.0
1 ct.	Macropoxy 646	3.0-10.0
Steel, Polyurethane Topcoat, Atmospheric:		
1 ct.	Zinc Clad DOT	2.0-4.0
1 ct.	Macropoxy 646	3.0-10.0
1 ct.	Acrolon 218 HS	3.0-6.0
Steel, Polyurethane Topcoat, Atmospheric:		
1 ct.	Zinc Clad DOT	2.0-4.0
1 ct.	Steel Spec Epoxy Intermediate	3.0-6.0
1 ct.	Hi-Solids Polyurethane	3.0-5.0

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

DISCLAIMER

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SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Iron & Steel:

Atmospheric: SSPC-SP6/NACE 3, 2 mil profile

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	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:

Material: 20°F minimum, 95°F maximum

Air: 20°F minimum, 115°F maximum

Surface: 20°F minimum, 130°F maximum
At least 5°F above dew point

Relative humidity: 95% maximum
Water misting may be required at humidities below 50%

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:

3.66 gallons mixed:
- Part A: 2.17 gallons
- Part B (Rex # B69VZ18): 0.25 gallons
- Part F: 73 lb Zinc Dust

1.10 gallons mixed:
- Part A: 0.65 gallons
- Part B (Rex # B69VZ18B): 0.076 gallons
- Part F: 22 lb Zinc Dust

Weight per gallon: 26.7 ± 5% lb, 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

Zinc rich coatings require direct contact between the zinc pigment in the coating and the metal substrate for optimum performance. Surface must be dry, free from oil, dirt, dust, mill scale or other contaminants to ensure adequate adhesion.

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

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 - 2.0 mil 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:
- Material: 20°F minimum, 95°F maximum
- Air: 20°F minimum, 115°F maximum
- Surface: 20°F minimum, 130°F maximum
  At least 5°F above dew point

Relative humidity: 95% maximum
Water misting may be required at humidities below 50%

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
- Above 70°F .....R7K111 (HAPS Free), R2KT4
- Below 70°F .....R7K111 (HAPS Free), R2K4, R2K5, R6K9

Airless Spray
(use Teflon packings and continuous agitation)
- Unit.....Graco 30:1
- Pressure.....2700 psi
- Hose.....3/8" ID
- Tip .....017" - .021"
- Filter.....30 mesh
- Reduction.....As needed up to 4% by volume*

For continuous operation in larger areas, use Speeflo Airless Commander Zinc Pump. Set ball checks to maximum travel for viscous material.

Conventional Spray
(continuous agitation required)
- Gun .....Binks 95
- Fluid Nozzle 66
- Fluid Hose.....1/2" ID, 50 ft maximum
- Air Nozzle.....63PB
- Air Hose .....1/2" ID, 50 ft maximum
- Atomization Pressure.....25 psi
- Fluid Pressure.....10-20 psi
- Reduction.....As needed up to 4% by volume*

*Other VOC areas (<450 g/L): can be reduced up to 15%. Choose a reducer that is compliant in your area. Confirm compliance with state and local air quality rules before use.

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 .....For touch up in small areas only

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 DOT comes in premeasured containers, which when mixed provides ready-to-apply material.

Mixing Instructions:
Thoroughly agitate Binder, Part A. Using continuous air driven agitation, slowly mix all of Zinc Dust, Part F, into all of Binder Part A until mixture is completely uniform. Continue agitation and add Part B. After mixing, pour mixture through 30-mesh screen. Mixed material must be used within 8 hours. Do not mix previously mixed material with new. No "sweat-in" period is required.

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:	**2.7**	**5.5**
Dry mils:	**2.0**	**4.0**
~Coverage sq ft/gal:	**300**	**600**

Dry film thickness in excess of 6.0 mils per coat is not recommended.

Drying Schedule @ 4.0 mils wet @ 50% RH:

	@ 40°F	@ 77°F	@ 100°F
To touch:	25 minutes	20 minutes	5 minutes
To handle:	1 hour	20 minutes	15 minutes
To topcoat:	7 days	24 hours	8 hours
To stack:	6 hours	2 hours	1 hour

Drying time is temperature, humidity, and film thickness dependent.
Do not topcoat until a rating of 4 is achieved after 50 MEK double rubs

Pot Life: 8 hours @ 77°F

Sweat-in-time: None required, but material should be mixed for at least 5 minutes before use.

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 R2KT4, 150 Flash Naphtha or R2K4, Xylene. Clean hands and tools immediately after use with Reducer R2KT4, 150 Flash Naphtha or R2K4, Xylene. Follow manufacturer's safety recommendations when using any solvent.

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PERFORMANCE TIPS

Topcoating: Note minimum cure times at normal conditions before topcoating. Longer drying periods are required if primer cannot be water mist sprayed when humidity is low. Water misting may be required at humidities below 50% to enhance cure rate.

Occasionally topcoats will pinhole or delaminate from zinc-rich coatings. This is usually due to poor ambient conditions or faulty application of topcoats. This can be minimized by:

- Provide adequate ventilation and suitable application and substrate temperature.
- If pinholing develops during topcoating, apply a mist coat of the topcoat, reduced up to 50%. Allow 10 minutes flash off and follow with a full coat.

An intermediate coat is recommended to provide uniform appearance of the topcoat.

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 Reducer R2KT4, 150 Flash Naphtha.

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.

Application above recommended film thickness may result in mud cracking and poor topcoat appearance.

During the early stages of drying, the coating is sensitive to rain, dew, high humidity, and moisture condensation. If possible, plan painting schedules to avoid these influences during the first 16-24 hours of curing.

Topcoats may be applied once 50 MEK double rubs are achieved, per ASTM D4752, Rating 4. No zinc or only slight traces should be visible. Coin hardness test can also be used.

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

SAFETY PRECAUTIONS

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