ZINC CLAD® II LV
INORGANIC ZINC-RICH COATING

PRODUCT INFORMATION

PRODUCT DESCRIPTION

ZINC CLAD II LV is a solvent-based, two-component, inorganic ethyl silicate, zinc rich coating. This is a fast drying, high solids, low VOC coating with 82% 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 coefficient and creep resistance, 0.56
- Meets AASHTO M-300-specification

PRODUCT CHARACTERISTICS

Finish: Flat
Color: Gray-Green
Volume Solids: 69% ± 2%, mixed (void content method)
Weight Solids: 86% ± 2%, mixed
VOC (EPA Method 24): Unreduced: <400 g/L 3.33 lb/gal (mixed)
Zinc Content in Dry Film: 82% by weight
Mix Ratio: 2 components, premeasured 4.50 gallons (17.0L) mixed

Recommended Spreading Rate per coat:

<table>
<thead>
<tr>
<th>Wet mils (microns)</th>
<th>Dry mils (microns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>3.0</td>
<td>75</td>
</tr>
</tbody>
</table>

Coverage sq ft/gal (m²/L):

Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft

1104 27.0

Dry film thickness in excess of 6.0 mils (150 microns) per coat is not recommended.

Drying Schedule @ 6.0 mils wet (150 microns):

<table>
<thead>
<tr>
<th>@ 40°F/4.5°C</th>
<th>@ 77°F/25°C</th>
<th>@ 100°F/38°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% RH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To touch: 25 minutes 20 minutes 5 minutes
To handle: 25 minutes 20 minutes 10 minutes
To topcoat: 4 days 24 hours 8 hours
To cure: 5 days 36 hours 24 hours
To stack: 6 hours 2 hours 1 hour

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

Pot Life: 8 hours @ 77°F (25°C)

High humidity will shorten pot life.

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

Shelf Life: Part A: 9 months, unopened
Part F: 24 months, unopened
Store indoors at 40°F (4.5°C) to 100°F (38°C)

Flash Point: Reducer/Clean Up:

Above 70°F (21°C): 65°F (18.3°C)
R2K4, 150 Flash Naphtha
R2K4, Xylene
Below 70°F (21°C):

Salt Fog Resistance: ASM B117, 1000 hours
Rating 10 per ASTM D714 for Blistering; Rating 10 per ASTM D610 for Rusting

Slip Coefficient*: AISC Specifications for Structural Joints
Class B, 0.53

*Refer to Slip Certification document

Recommended Uses

For use over prepared blasted steel in areas such as:
- Bridges
- Shop or field application
- Nuclear Power Plants
- Nuclear fabrication shops
- 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)
- 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.

Performance Characteristics

Substrate*: Steel
Surface Preparation*: SSPC-SP10/NACE 2
System Tested*: 1 ct. Zinc Clad II LV @ 4.0 mils (100 microns) dft

Test Name | Test Method | Results
--- | --- | ---
Adhesion | ASTM D4541 | 10.025 MPa = 1454lb psi
Direct Impact Resistance | ASTM D2794 | 50 in lbs.
Dry Heat Resistance | ASTM D2485 | 750°F (399°C)*
Flexibility | ASTM D522, 180° bend, 1" mandrel | Passes
Moisture Condensation Resistance | ASTM D4585, 100°F, 1000 hours | Rating 10 per ASTM D714 for Blistering; Rating 10 per ASTM D610 for Rusting
Pencil Hardness | ASTM D3363 | 2H
Radiation Tolerance | ASTM D4082 / ANSI 5.12 | Pass at 5 mils (125 microns)
Salt Fog Resistance | ASTM B117, 1000 hours | Rating 10 per ASTM D714 for Blistering; Rating 10 per ASTM D610 for Rusting

Provides performance comparable to products formulated to specifications Mil-P-38336 and Mil-P-46105 and SSPC Paint 20.

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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/NACE3, 2 mil (50 micron) profile
  - Immersion: SSPC-SP10/NACE 2, 2 mil (50 micron) profile

**Surface Preparation Standards**

<table>
<thead>
<tr>
<th>Condition of Surface</th>
<th>ISO 8501-1</th>
<th>Swedish Std.</th>
<th>SSPC</th>
<th>NACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Metal</td>
<td>Sa 2.5</td>
<td>Sa 2.5</td>
<td>SP 6</td>
<td>1</td>
</tr>
<tr>
<td>Near White Metal</td>
<td>Sa 2</td>
<td>Sa 2</td>
<td>SP 10</td>
<td>2</td>
</tr>
<tr>
<td>Commercial Blast</td>
<td>Sa 3</td>
<td>Sa 3</td>
<td>SP 6</td>
<td>3</td>
</tr>
<tr>
<td>Brush-Off Blast</td>
<td>Sa 1</td>
<td>Sa 1</td>
<td>SP 7</td>
<td>4</td>
</tr>
<tr>
<td>Hand Tool Cleaning</td>
<td>Rusty</td>
<td>C St 2</td>
<td>SP 2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Rusted</td>
<td>D St 2</td>
<td>SP 2</td>
<td>-</td>
</tr>
<tr>
<td>Power Tool Cleaning</td>
<td>Rusty</td>
<td>C St 3</td>
<td>SP 3</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Pitted &amp; Rusted</td>
<td>D St 3</td>
<td>SP 3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Tinting**

Do not tint.

**Application Conditions**

Temperature: 20°F (7°C) minimum, 100°F (38°C) maximum (air, surface, and material) at least 5°F (2.8°C) above dew point

Relative humidity: 40% - 90% maximum Water misting may be required at humidities below 50%

Refer to product Application Bulletin for detailed application information.

**Ordering Information**

Packaging: 4.50 gallons (17.0L) total, mixed

Part A: 3.25 gallon (12.3L) kit

Part F: 73 lbs (33.1 Kg) zinc dust

Weight: 22.99 ± 0.2 lb/gal ; 2.76 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 MERCHANDABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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**Recommended Systems**

<table>
<thead>
<tr>
<th>Dry Film Thickness / ct. Mils (Microns)</th>
<th>Steel, Untopcoated, Immersion or Atmospheric</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ct. Zinc Clad II LV</td>
<td>2.0-4.0 (50-100)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Steel, Epoxy Topcoat, Atmospheric:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ct. Zinc Clad II LV</td>
</tr>
<tr>
<td>1 ct. Macropoxy 646</td>
</tr>
<tr>
<td>1 ct. Acrolon 218 HS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Steel, Polyurethane Topcoat, Atmospheric:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ct. Zinc Clad II LV</td>
</tr>
<tr>
<td>1 ct. Macropoxy 646</td>
</tr>
<tr>
<td>1 ct. Hi-Solids Polyurethane</td>
</tr>
</tbody>
</table>

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

**Steel, Class B Compliant System**

| 1 ct. Zinc Clad II LV                  | 2.0-4.0 (50-100) |
| 1 ct. Steel Spec Epoxy Primer Red      | 4.0-6.0 (100-150) |

The systems listed above are representative of the product’s use, other systems may be appropriate.
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). Prime any bare steel the same day as it is cleaned 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 mils / 50 microns). Remove all weld spatter and round all sharp edges by grinding. 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 (38-50 micron) surface profile. This method may result in improved adhesion and performance.

Surface Preparation Standards

<table>
<thead>
<tr>
<th>Condition of Surface</th>
<th>ISO 8501-1 BS7079.A1</th>
<th>Swedish Std. SIS055900</th>
<th>SSPC</th>
<th>NACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Metal</td>
<td>Sa 3</td>
<td>Sa 3</td>
<td>SP 3</td>
<td>2</td>
</tr>
<tr>
<td>Near White Metal</td>
<td>Sa 2.5</td>
<td>Sa 2.5</td>
<td>SP 5</td>
<td>3</td>
</tr>
<tr>
<td>Commercial Blast</td>
<td>Sa 2</td>
<td>Sa 2</td>
<td>SP 6</td>
<td>3</td>
</tr>
<tr>
<td>Brush-Off Blast</td>
<td>Sa 1</td>
<td>Sa 1</td>
<td>SP 7</td>
<td>2</td>
</tr>
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<td>Hand Tool Cleaning</td>
<td>Rusted</td>
<td>C St 2</td>
<td>SP 2</td>
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<td>D St 3</td>
<td>SP 3</td>
<td>2</td>
</tr>
</tbody>
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Application Conditions

Temperature: 20°F (7°C) minimum, 100°F (38°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point

Relative humidity: 40% - 90% 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 (21°C)..............R2KT4, 150 Flash Naphtha
Below 70°F (21°C)..............R2K4, Xylene

Airless Spray
(use Teflon packings and continuous agitation)

Unit........................Graco 30:1
Pressure........................2700 psi
Hose............................3/8" ID
Tip.............................019" - .021"
Filter...........................30 mesh
Reduction.....................As needed up to 5% 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 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............................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 BULLETIN

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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Zinc Clad II LV comes in premeasured containers, which when mixed provides ready-to-apply material.

Mixing Instructions:
Thoroughly agitate Binder, Part A using low speed continuous air driven agitation. Slowly mix all of Zinc Dust, Part F into all of Binder Part A until mixture is completely uniform. 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:

<table>
<thead>
<tr>
<th>Recommended Spreading Rate per coat:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet mils (microns)</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>3.0</td>
</tr>
<tr>
<td>Dry mils (microns)</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>2.0</td>
</tr>
<tr>
<td>Coverage sq ft/gal (m²/L)</td>
</tr>
<tr>
<td>280</td>
</tr>
<tr>
<td>Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns df</td>
</tr>
</tbody>
</table>

Dry film thickness in excess of 6.0 mils (150 microns) per coat is not recommended.

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):

@ 40°F/4.5°C  @ 77°F/25°C  @ 100°F/38°C

To touch:  25 minutes  20 minutes  5 minutes
To handle: 25 minutes  20 minutes  10 minutes
To topcoat: 4 days  24 hours  8 hours
To cure:  5 days  36 hours  24 hours
To stack:  6 hours  2 hours  1 hour

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

Pot Life:  8 hours @ 77°F (25°C)

High humidity will shorten pot life.

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.

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. Any 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.

WARRANTY

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