

## ZRC 221<sup>®</sup> Galvanizing Compound

ZRC 221 provides the same true galvanic protection as our original ZRC Cold Galvanizing Compound using 43% fewer volatile organic compounds—another ZRC innovation in zinc rich technology.

Enjoy the following great benefits with ZRC 221:

- Excellent for reducing VOC emissions in restricted areas/production facilities
- 92% zinc in the dry film using only Type III “ultra pure” ASTM-D-520 zinc
- ISO 9001 registration assures the highest quality consistently
- Meets and exceeds the performance requirements of Fed. Spec.
- DOD-P-21035A (Galvanizing Repair Spec); MIL-P-26915A (USAF Zinc Dust Primer); ASTM Des. A-780 (Standard Practice for Repair of Damaged Hot-Dip Galvanized Coatings); SSPC-Paint 20 (Specification for Zinc-Rich Primer)
- Passes 3,000 hours salt spray testing without failure (ASTM Des. B117)
- Passes Preece Test (ASTM Des. A239) for hot-dip galvanizing

For specification assistance, application assistance, test reports and product selection please contact our customer support at (800) 831-3275 or our website [www.zrcworldwide.com](http://www.zrcworldwide.com).



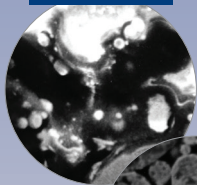
### APPLICATIONS

Field applied galvanizing  
 Repairing hot-dip galvanizing  
 Rust proofing welds  
 Repairing inorganic zinc  
 Regalvanizing of worn hot-dip  
 Metal fabrication  
 Construction  
 Manufacturing/OEM  
 Antenna Towers  
 Petrochemical Plants  
 Roads & Bridges  
 Tanks  
 Industrial Maintenance  
 Water Treatment  
 Marine & Offshore  
 Cooling Towers  
 Hundreds more!

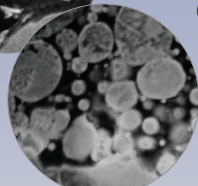
## THE ZRC DIFFERENCE

The ZRC difference is made possible by ZRC's high zinc content (92% by weight in the dried film) of “ultra pure” (ASTM D 520 Type III) zinc dust, ensuring that more metallic zinc is available for superior galvanic protection against corrosion. This high purity zinc dust is compounded with a tenacious non-encapsulating binder using a highly controlled trade secret process in our state-of-the-art manufacturing facility.

Competitor



The result is a self-healing galvanic film that does not require sand-blasting for most applications, providing both up-front labor savings and extended longevity of corrosion protection. We offer a Certificate of Compliance to these exacting material standards and a copy of our most recent ISO Registration Certificate.



ZRC

### The Proof is in the Photos

These scanning electron microscope photos illustrate the difference between the true galvanic protection of ZRC and a competitor's low percentage zinc coating.

## TESTING & SPECIFICATION CONFORMANCE DATA

- Meets and exceeds the performance requirements of Fed. Spec. DOD-P-21035A, formerly MIL-P-21035 (Galvanizing Repair Spec.)
- Meets and exceeds the performance requirements of Fed. Spec. MIL-P-26915A (USAF Zinc Dust Primer)
- Passes 3,000 hours salt spray testing without failure\*\* (ASTM Des. B117)
- Passes Preece Test (ASTM Des. A239) for hot-dip galvanizing
- Resists intermittent dry-heat temperatures up to 750°F
- Meets and exceeds ASTM Des. A-780 (Standard Practice for Repair of Damaged Hot-Dip Galvanized Coatings)
- Meets and exceeds SSPC-Paint 20 (Specification for Zinc-Rich Primer)

## AVAILABILITY/COST

Immediately available off the shelf, ZRC 221 Galvanizing Compound is offered directly from the manufacturer, or through a worldwide distribution network. The initial cost of ZRC is more than offset by substantial maintenance savings and the increased service life of protected surfaces. Contact ZRC Worldwide for current pricing and further information.

## MATERIALS/FINISHES

A unique formulation of 92% pure zinc metal as a liquid coating, ZRC 221 Galvanizing Compound is manufactured to exacting standards in our own state-of-the-art manufacturing facility.

## SUGGESTED SPECIFICATION

Organic Zinc-Rich Coating containing a maximum of 221 gms/L VOC, as supplied, and at least 92% metallic zinc (ASTM D520, Type III), by weight, in the dried film, exhibiting galvanic, anti-corrosion protection to iron and steel, and conforming to Society for Protective Coatings Specification SSPC Paint 20, Type II, Level 1, Zinc Rich Coating and American Society for Testing and Materials Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings, ASTM A 780-01, and meeting the performance requirements of Specification SSPC Paint 29, Type II, Level 1, Zinc Dust Sacrificial Primer Performance-Based, Military Specification MIL-P-21035B, Paint High Zinc Dust Content, Galvanizing Repair (Metric) and Military Specification MIL-PRF-26915D, Primer Coating, For Steel Surfaces; as manufactured by ZRC Worldwide, Marshfield, MA or other facility having been registered to the International Organization for Standardization ISO 9000:2000 standard for quality.

\*\* Copy of reports available upon request



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## Technical Data

TYPE	Single pack, premixed, ready to apply, liquid organic zinc compound
THEORETICAL COVERAGE	400 ft <sup>2</sup> /gal @ 1.5 mil dry film thickness
METALLIC ZINC CONTENT	92% by weight in dry film
FLASH POINT	109°F (SETA method, ASTM D3278)
VOC CONTENT	1.8 lbs/gal (221 gms/ltr) (ASTM D3960)
WEIGHT PER GALLON	26.2 lbs. (ASTM D1475)
SOLIDS CONTENT	85% (by weight)/56% (by volume)
VISCOSITY	1100 cps. Brookfield RVT spindle #5 @ 100 RPM, 25°C
MAXIMUM SERVICE TEMP - Intermittent	750°F (399)°C
MAXIMUM SERVICE TEMP - Constant	350°F (177)°C
ELECTRICAL CONDUCTIVITY	73 million ohms per square @ 3 mils dry (resistivity)
ADHESION	500 lbs./in <sup>2</sup> (ASTM D 4541, Elcometer Model F106)
IMPACT RESISTANCE	Greater than 30 inch-lbs. (extrusion) per ASTM-D2794
ABRASION RESISTANCE	11.5 liters per dry mil (tested @ 3 dry mils) per ASTM-D98-51
POT LIFE	At least 24 hrs. @ 77°F (25°C)
PACKAGING	Gallon can
DRY TIME	Set to touch. When ambient air dried, 20-30 min. @ 1.5 mil (38μ) thickness
RECOAT TIME	(Second Coat) 12 hrs.

**TOPCOATING** After 24-48 hrs., topcoat with acrylic, epoxy, urethane or vinyl type products. DO NOT USE alkyd, alkyd-modified acrylic, or lacquer type products. Consult our Guide to Topcoating for detailed instructions.

## Surface Preparation

Dependant upon surface condition and intended service. Typical examples include:

GREASE & OILS	Solvent clean to SSPC-SP1
RUST SCALE	Power tool clean to SSPC-SP3 or SSPC-SP11
MILL SCALE	Sandblast to SSPC-SP6 (commercial)
WATER IMMERSION	(100°F maximum) Sandblast to SSPC-SP10 (near-white)

## Application

**BRUSH/ROLLER/AEROSOL** Apply as received in container. For Brush Application, use 100% Natural 100% Chinese bristle brushes. For Roller Application, use 3/8" nap rollers, made of mohair or lambs wool (sheepskin).

## SPRAY (low pressure compressor type)

Atomized air pressure	50 lbs/in <sup>2</sup> = 3.5 kg/cm <sup>2</sup>
Fluid pressure	15-20 lbs/in <sup>2</sup> = 1.1-1.4 kg/cm <sup>2</sup>
Orifice of tip	0.080 inches (0.20 cm)
Viscosity reduction	5:1 ZRC-221:parachloro-trifluoromethyl-benzene (vol)

## SPRAY (airless type)

Pump	30:1
Hose	1/2" (1.3 cm) (I.D.)
Orifice of tip	60°-0.026 inches (0.07 cm)
Type of tip	Tungsten carbide, reversing
Filter screens	Complete removal is recommended. However, if screens are employed, use no less than 30 mesh.
Viscosity	No reduction required
Recommended procedure	Connect hose directly to pump, without filter assembly, ensuring a hose length of 50 ft. max. Use in-pot agitator or continuous recycling. Use least pressure possible. Start at 1500 lbs/in <sup>2</sup> = 105 kg/cm <sup>2</sup> and increase as required for good spraying.

## CLEAN UP

Mineral spirits solvent or Xylene

ISO 9001:2000



REGISTERED

ZRC Worldwide has been registered to the International Organization for Standardization ISO 9000 Series Standards for Quality. The fact that ZRC is registered to ISO 9001 assures our customers that the zinc-rich coatings manufactured in our facility are designed and manufactured according to the most stringent quality control standards, so you can rely on their consistency.

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