

# Zinc Primer Information

## Z1000-G5 Zinc Rich Primer

Erie Powder Coating's Z1000-G5 Zinc Rich Primer has been designed to provide a combination of excellent corrosion resistance and tremendous application characteristics. Both internal and 3<sup>rd</sup> party independent testing has proven Z1000-G5 ZRP has the ability to provide fantastic corrosion resistance to steel substrates that have been suitably prepared.

Z1000-G5 ZRP is formulated to effectively and efficiently utilize the galvanic properties of zinc metal - the same technology that gives galvanized steel its corrosion resistance. The zinc in this primer acts as a sacrificial metal matrix that prevents the steel substrate from rusting or oxidizing.

Z1000-G5 ZRP is the latest generation of zinc primer systems. This new generation uses novel technology designed specifically to solve the major problem with zinc-based epoxy primers; the intercoat adhesion between base and top coats. Historically zinc primers have exhibited extremely poor cure tolerances as the base coat in a two-coat system. If cured for too long prior to top coat application, catastrophic delamination failure can, and often does occur. Z1000-G5 ZRP has a far wider base coat cure window compared to traditional zinc rich primers. While gelling the

primer prior to top coating is still the recommendation for optimal performance, testing has revealed Z1000-G5 ZRP intercoat adhesion remains unaffected not only by a full cure, but in some cases a 200% over-cure. This extended cure window results in significantly reduced risk of topcoat adhesion failure. This feature is especially beneficial when applying the primer to substrates comprised of varying gauges of steel, where thicker areas will require more time to reach gelling temperature than the thinner areas of the substrate.

### **Applying the Zinc Rich Primer:**

Z1000-G5 Zinc Rich Primer should be applied to clean steel parts with standard powder application equipment. The coating should remain in the oven only long enough to fully flow out and gel before the second coat is applied. The high zinc content provides nearly the same level of substrate grounding capability as a raw steel substrate, so top coat application should require little to no gun settings adjustment. After the topcoat is applied, the part should be placed back into the oven to fully cure according to the specifications of the primer as well as the top coat used. Ensure the minimum recommended cure parameters are met for both products.

### Typical Applications

- Wheel rims
- Garden furniture
- After-market automotive products
- Light poles
- Electrical posts
- Structural beams
- Fencing
- Holding tanks
- Structural frame systems
- Agricultural equipment
- Products in highly corrosive environments

## Recommendations

- This product is **not** recommended for non-ferrous substrates such as aluminum.
- At minimum, primer **must** be applied to clean steel that is free of soils.
- Clean white blast profile or high-quality pre-treatment system **highly recommended**.
- This primer **should** be applied over a substrate that has a surface profile. Shot-blasting or an etching pre-treatment achieves this. This product is **not** as effective on excessively smooth surfaces.
- This product **can** be used as a single coat finish; however, a topcoat is **highly recommended**.

## Dry Powder Property Ranges

Film Build .....	1.5 to 2.5 mils (40 to 65 microns)
Recommended Bake (as primer only).....	4 to 10 minutes at 375°F (190°C) metal temperature
Recommended Bake (as single coat).....	10 to 25 minutes at 375°F (190°C) metal temperature
Particle Size .....	35% to 60% > 32 micron (Alpine Jet Sieve)
Overbake Resistance .....	100% good, no detrimental impact
Specific Gravity .....	3.2
Coverage @ 100% Efficiency.....	30 ft <sup>2</sup> / lb @ 2 mil film build
Shelf Life .....	12 months

## Cured Film Property Ranges\*

Gloss at 60° .....	50 to 65
Impact Resistance (ASTM D2794) .....	120 inch-pounds
Pencil Hardness (ASTM D3363) .....	4H to 5H
Cross Hatch Adhesion (ASTM D3359) ....	5B full pass
Flexibility (ASTM D522) .....	180° ¼" conical mandrel with no cracking
Salt Spray (ASTM B117) .....	3000 hours with <1/8" creep from scribe line
Humidity Resistance (ASTM D2247).....	3000 hours

\* As tested on Bonderite 1000 Parcolene 60 test panels

Note: This information is given in good faith based on information believed to be true at the time of issue. However, no warranty expressed or implied can be given as results may vary according to product application, operating conditions, materials applied to and with use. Since all application processes are unique, we strongly recommend that you conduct your own tests to determine how this product performs in your system.

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