



SERIES 69 - DRYZINC® ZINC-RICH PRIMER (69/90500)

Epoxy zinc-rich powder coating primer. Part of a two-coat TIGER Shield system. Designed to impart superior corrosion protection to steel substrates.

Typical applications

- Steel constructions.
- Stadium seating.
- Agricultural machinery.
- Industrial equipment.
- Fixtures.
- Fences.
- Bike mounts.
- Heavy corrosion protection.

Standard Packaging 44 lb (20 kg) box.
5 lb (2.5 kg) minipack.

Specific Gravity (ASTM D792) approximately 2.2 g/cm³
depending on pigmentation.

Theoretical Coverage at 2.2 specific gravity and
2.5 mils (60 µm) film thickness:
24 ft²/lb (4.0 m²/kg).

Refer also to the latest edition
of "Theoretic Powder Coating
Coverage Chart".
Version 00-1001 (imperial).
Version 00-1000 (metric).

Storage Stability 6 months at no more than
77 °F (25 °C).

Features

- Zinc-rich primer.
- Especially suited for blasted substrates.
- Good intercoat adhesion.
- Very good corrosion protection.
- Very good mechanical properties.
- Good chemical resistance.
- Good storage stability.
- Very good edge coverage.

Finish and Color

- Grey smooth flow glossy surface, approximately 60-90*.

* Gloss level according to ASTM 523 at 60° angle.

TIGER Shield

TIGER Shield is a two-coat system consisting of a corrosion protective primer as a base coat:

- TIGER Dryprotector 69/70000,
 - or TIGER Dryzinc® 69/90500,
 - or TIGER Drylac® zinc-rich 69/90219,
 - or TIGER Drylac® zinc-free OGF 09/73841,
- and an opaque weather resistant TIGER Drylac® powder coating.

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Pretreatment (alternatives)

Two methods of pretreatment have been tested. A prerequisite for inclusion in the TIGER Shield processing is the quality of the steel substrate defined as an alloy-treated steel, class ST 37, ST 52 or any other equally suited steel that can be coated (stainless steel alloys and any derivatives thereof are explicitly excluded for use within a TIGER Shield application).

The following means of pretreatment and metal preparation have been tested respectively, and approved, in accordance with the requirements as set forth in EN ISO 12944.

I. Zinc phosphating

Minimum conversion coating weight $2.5 \pm 1.0 \text{ g/m}^2$.

II.) Blasting

The raw steel surface needs to be blasted using sharp and edged minerals or cast iron pellets. The tolerances for a blasted steel surface thereby need to correspond to the comparison specimen standard G 201 (lower tolerance segment 2, upper tolerance segment 3 = medium grade) and to the surface preparation class of minimum Sa 2.5 according to ISO 8503-1 and ISO 8503-2 with the surface depth between a minimum of R_z 1.96-2.75 mils (50–70 μm) and a maximum of R_{max} 3.93 mils (100 μm) according to ISO 8501 and a peak amount P_c 0.39 mils (10 μm) of 20 measured with a perthometer (Mahr). Blasting must ensure that a minimum of 95% of the total area to be blasted is reached.

To avoid any corrosion, the powder coating has to take place immediately after the blasting stage.

Processing

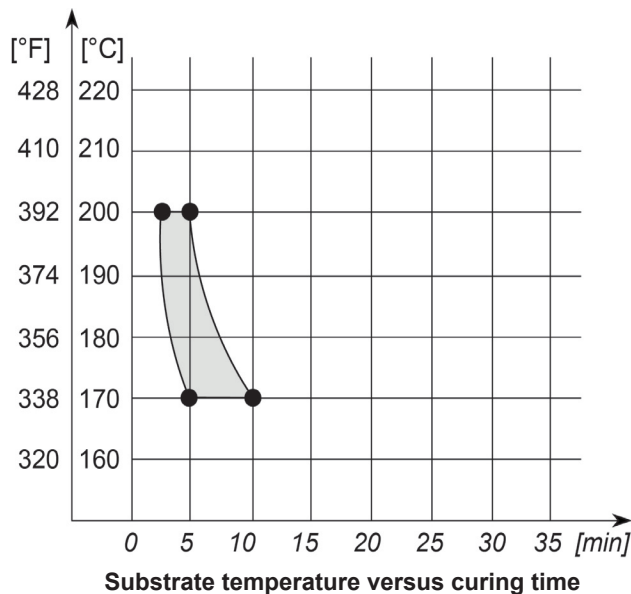
Corona and Tribo*

* For Tribo/Airstatic powder coatings please confirm before ordering. Suitability of metallic effects for Tribo processing must be verified prior to application. Please refer to the latest edition of the relevant Information Sheets.

Since not all powder coatings are suitable for recycling/reclaim, please verify before ordering.

Cure Parameters (substrate temperature)

TIGER Drylac® Two-Coat Process
Cure Parameters | Base Coat



To achieve a full cure and the desired mechanical properties and weatherability the time/temperature combination must fall within the cure window.

Two-Coat Process

If used as a two-coat TIGER Shield system, best intercoat adhesion is achieved when pre-gelling the primer at 392 °F (200 °C) for 2-3 minutes prior to applying a TIGER Drylac® powder coating topcoat. It is then to be cured, applying the curing parameters as given in the relevant Product Data Sheet for that top coat.

To avoid eventual oxidation no more than 12 hours must elapse between the application of TIGER Dryzinc® 69/90500 and the spraying of any TIGER Drylac® topcoat.

When the pre-gelling and subsequent cure is done in a directly fired gas oven, intercoat adhesion between the primer and the topcoat may suffer due to a variation in the gas supply.

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Film Thickness

A minimum film thickness of 2.5 mils (60 µm) per layer needs to be applied. The system requires the primer to be applied at 2.5-4.0 mils (60-100 µm) and the weather resistant top coat to be sprayed at a film thickness of 2.5-4.0 mils (60-100 µm). It is required that the total film thickness of both; the primer and the top coat, amount to an entire film build up to 5.0 mils (120 µm). In order to achieve sufficient opacity, it may become necessary to apply organic pigmented top coats at a higher film thickness. Please note that non-pigmented top coats, such as clear coats or transparent effects are not suited for a TIGER Shield application.

Please Note

For metallic finishes, it is recommended to observe the guidelines published in the latest edition of TIGER Drylac® “Application guidelines for metallic effect powder coatings”.

Top coating with a clear exterior grade powder coating over an interior grade powder coating does not result into a weather resistant coating system.

Post-bending properties of any part must be verified prior to application. Minor cracks in the coated surface may lead to corrosion.

Joint sealants and any other auxiliary products, such as glazing aids, gliding waxes, drilling and cutting lubricants, which come in contact with the coated surface, must be pH-neutral and free of substances that may damage the finish. Therefore, a suitability test at the applicator’s end, prior to coating, is highly recommended.

In general, colors in the red, orange and yellow range may require an increased film thickness to achieve full hiding.

Any post-mechanical processing of already coated parts, such as sawing, drilling, milling, cutting and bending will result in damage of the coated surface and will subsequently weaken the corrosion protection.

Please read and understand the Safety Data Sheet (SDS) before use.

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Test Results

Results are checked on a 1/8 inch (3 mm) gauge zinc phosphated, steel panel, two-coat TIGER Shield system (TIGER Dryzinc® 69/90500 and a smooth glossy finish topcoat) with a total film thickness of maximum 6.4 mils (160µm). Cure conditions according to the cure curves.

Test results	Test method	Dryzinc® 69/90500 + TIGER Drylac® Series 38
Film thickness		5.0-7.0 mils (120-180 µm)
Cross cut tape test 2 mm	ASTM D3359	5B
Humidity resistance 1,000 hours	ASTM D2247	Maximum undercutting 1/32 inch (1 mm). No blistering.
Salt spray resistance 3,000 hours	ASTM B117	Maximum undercutting 1/32 inch (1 mm). No blistering.
Porosity of paint films	ASTM D3258	Non-porous.

Cleaning recommendations: Refer to the latest edition of TIGER “Cleaning Recommendations” information sheet, Version 00-1005.

If the metal preparation and pretreatment are followed according to the instructions as set forth in this Product Data Sheet, the TIGER Shield system will yield protection against corrosion that meets the requirements of a corrosion class C5-I long according to EN ISO 12 944 part VI.

TIGER Shield (Pretreatment with zinc phosphating)

Results are checked on a 1/8 inch (3 mm) zinc phosphated steel panel, two-coated-structure (TIGER Dryzinc® 69/90500 and a smooth glossy finish topcoat) with a general maximum film thickness of 6.4 mils (160 µm). Cure according to the relevant curing parameters.

Test results	Test method	Dryzinc® 69/90500 + TIGER Drylac® Series 38
Tested corrosion resistance	EN ISO 12 944	C5-I long IKS test report PB 300/64/00*
Suitable for application in pre-stressed and highly fastened bolted connections	DIN 18 800 Part 1***	Unrestricted use for bolted connections ISL test report PB 10/00**

TIGER Shield (Metal preparation with blasting)

Results are checked on a 1/8 inch (3 mm) gauge blasted steel panel, two-coat TIGER Shield system (TIGER Dryzinc® 69/90500 and a smooth glossy finish topcoat) with a total maximum film thickness of 5.0-7.0 mils (120-180 µm). Cure conditions are according to the cure curves.

Test results	Test method	Dryzinc® 69/90500 + TIGER Drylac® Series 38
Tested corrosion resistance	EN ISO 12 944	C5-I long IKS test report PB 300/64/00*
Suitable for application in pre-stressed and highly fastened bolted connections	DIN 18 800 Part 1***	Unrestricted use for bolted connections ISL test report PB 10/00**

* Institute for Corrosion Protection, Dresden, Germany

** Institute for Steel Construction, Leipzig, Germany

*** DIN = German Industrial Standard

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Chemical Resistance

The required chemical resistance of a powder coating depends, among other things, on its formulation. Chemical resistance requirements must be considered according to processing conditions and final use of the finished product. This is best established during the product specification process. Agreement between all parties involved must be reached about the requirements for such chemical resistance as well as the test method, which may be performed in accordance with PCI test method #8 "Solvent Cure Test". Furthermore, the test duration and concentration of the test media need to be agreed upon.

As part of TIGER Drylac® product information program, Product Data Sheets are updated periodically. It is recommended to always check for the latest editions on TIGER's website. TIGER's verbal and written recommendations for the use of its products are based upon experience and in accordance with current technological standards. These are given in order to support the buyer or user. They are non-committal and do not create any additional commitments to the purchase agreement. They do not release the buyer from verifying the suitability of TIGER products for the intended application. This Product Data Sheet supersedes all previous Product Data Sheet versions and notes published in relation to this product.

Certified according to
ISO 9001 | 14001

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