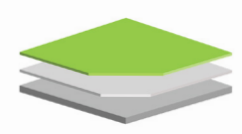
SERIES 69 - DRYZINC® zinc-rich primer (69/90500)

EPOXY ZINC-RICH PRIMER. PART OF A TWO-COAT TIGER SHIELD SYSTEM. DESIGNED TO IMPART SUPERIOR CORROSION PROTECTION TO STEEL SUBSTRATES

Typical applications

- corrosion protection applications
- structural steel work
- in two-coat system (TIGER Shield)



top coat powder coating
corrosion protection powder primer
substrate-steel, galvanized substrate

The 2-coat system consists of the powder coating primer as well as an opaque, UV-resistant top coat.

Product details

Standard packaging	in original 44 lb (20 kg) boxes and 5 lb (2.5 kg) minipack
Specific gravity (ASTM D792)	approximately 2.2 g/cm^3 depending on pigmentation
Theoretical coverage	at 2.5 mils (60 µm) film thickness: **24 ft²/lb (4.0 m²/kg)**. Refer also to "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) avoid direct and extended exposure to heat

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

finish	gloss
smooth *glossy*	60-90*

* *Gloss level according to ASTM 523 at 60° angle (doesn't apply to metallic effect powder coatings). The measured gloss level of effect powder coatings can diverge from the details given in this Product Data Sheet. The creation of tolerance samples is recommended.*

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 ZRP6000 69/90219
- or TIGER Drylac® zinc-free OGF 09/73841

and an opaque weather resistant TIGER Drylac® powder coating

Pretreatment

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±1.0 g/m2

II. Blasting
The raw steel surface needs to be blasted using sharp and edged minerals, such as cast iron pellets or equivalent. 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 Rz 1.96-2.75 mils (50–70 µm) and a maximum of Rmax 3.93 mils (100 µm) according to ISO 8501 and a peak amount Pc 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 Tribostatic*

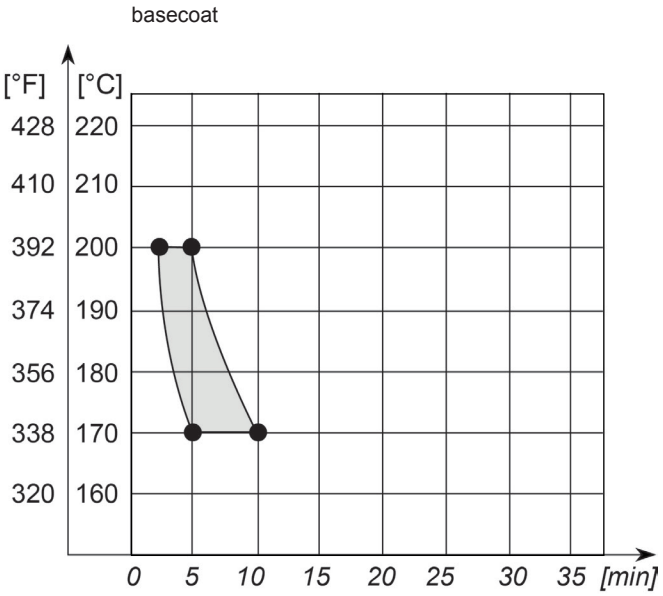
** For Tribostatic powder coatings, confirm before ordering. Suitability of metallic effects for Tribostatic processing must be verified prior to actual application. Please refer to the latest edition of the relevant application guidelines for metallic effect powder coatings.*

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

Product data sheet

Cure parameters

(substrate temperature versus curing time)



substrate temp.	min. curing time	max. curing time
338 °F (170 °C)	5 minutes	10 minutes
392 °F (200 °C)	2.5 minutes	5 minutes

Cure parameters must be closely observed since mechanical properties will develop before full cross-linking.

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.

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.

Series 69

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 maximum total film thickness of 6.4 mils (160 µm). Cure conditions are according to the cure curves. Actual product performance may vary due to product-specific properties such as gloss, colour, effect and finish as well as application-related and environmental influences. When used as a two-coat system, the increase in film thickness will result in a decrease of mechanical properties.

test method	test	**Dryzinc® 69/90500 +** TIGER Drylac® Series 38
ISO 2360	**recommended film thickness**	5.0-7.0 mils (120-180 µm)
ASTM D3359 method B	**cross cut tape test** 2mm cutting distance	5B
ASTM D2247	**determination of resistance to humidity** 1,000 hours	maximum undercutting 1/32 inch (1 mm), no blistering
ASTM B117	**salt spray resistance** 3,000 hours	maximum undercutting 1/32 inch (1 mm), no blistering
ASTM D3258	**porosity of paint films**	non-porous

Cleaning recommendations: refer to the latest edition of TIGER "Cleaning Recommendations" information sheet, Version 00-1005.

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

Series 69

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".

Please consult the manufacturer before applying any 2-coat systems that feature (i) a primer or e-coat as base coat and (ii) a metallic effect powder coating as a top coat.

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.

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.

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

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

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.

Disclaimer

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 provided 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. TIGER warrants that its products are free of flaws and defects to the extent stipulated in the Terms of Delivery and Payment.

As part of TIGER product information program, each Product Data Sheet is updated periodically. The latest version shall prevail. It is recommended to always check for the latest editions on TIGER's website download area www.tiger-coatings.com to make sure you have the most current version of this Product Data Sheet. The information on TIGER's Product Data Sheets are subject to change without notification.

This Product Data Sheet supersedes and replaces all previous Product Data Sheet versions and notes to customers published in relation to this product and is only intended to provide a general overview on the product.

Latest versions of Technical Information Sheets and Terms of Delivery and Payment are downloadable from www.tiger-coatings.com and form an integral part of this Product Data Sheet.

Series 69

Certified according to ISO 9001 | 14001

TIGER Drylac U.S.A., Inc.
3945 Swenson Avenue
St Charles, IL 60174, USA
T 800 243 8148
F 877 926 8148
E office.us@tiger-coatings.us
W www.tiger-coatings.us