SERIES 09 - zinc-free OGF primer (09/73841)

EPOXY/POLYESTER HYBRID ZINC-FREE OUT-GASSING FORGIVING PRIMER. PART OF A TWO-COAT TIGER SHIELD SYSTEM. IMPARTS SUPERIOR CORROSION PROTECTION TO FORGED, CAST, HOT GALVANIZED AND POROUS SUBSTRATES

Typical applications

- steel/aluminium constructions
- agricultural machinery
- industrial equipment
- fixtures
- fences
- bike mount
- heavy corrosion protection

Product details

Standard packaging	in original 10 & 20 kg (22 & 44 lb) box and 2.5 kg (5 lb) minipack
Specific gravity (ASTM D792)	approximately 1.6 g/cm^3 depending on pigmentation
Theoretical coverage	at 60 µm (2.5 mils) film thickness: **11.1 m^2/kg (51.5 ft^2/lb)**. Refer also to "Theoretic Powder Coating Coverage Chart" version 00-1000 (metric) version 00-1001 (imperial)
Storage stability	12 months at no more than 25 °C (77 °F) avoid direct and extended exposure to heat

Features

- zinc-free primer
- especially suited for porous 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
grey smooth *glossy*	65-75*

* *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® 69/90701
- or TIGER Drylac® zinc-rich 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 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 Rz 50–70 µm (1.96-2.75 mils) and a maximum of Rmax 100 µm (3.93 mils) according to ISO 8501 and a peak amount Pc 10 µm (0.39 mils) 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.*

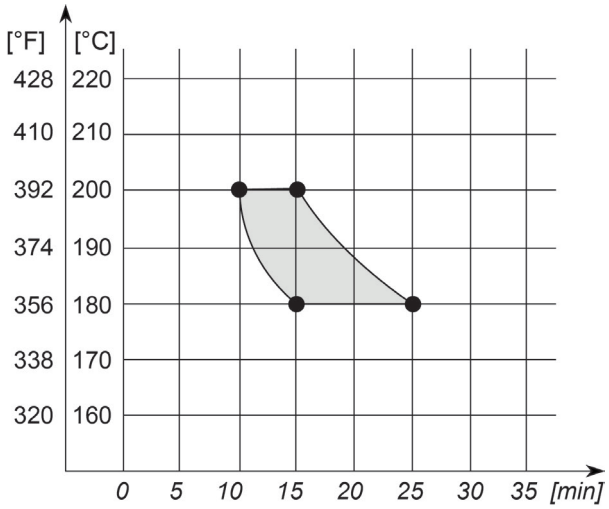
Since not all powder coatings are suitable for recycling/reclaim, please verify before ordering.

Product data sheet

Cure parameters

(substrate temperature versus curing time)

base coat



substrate temp.	min. curing time	max. curing time
180 °C (356 °F)	15 minutes	25 minutes
200 °C (392 °F)	10 minutes	15 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 200 °C (392 °F) 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 Drylac® zinc-free OGF 09/73841 and the subsequent 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.

Test results

Checked under laboratory conditions on a 3mm (1/8 inch) gauge zinc phosphated steel test panel, two-coat TIGER Shield system (TIGER zinc-free OGF primer 09/73841 and a smooth glossy finish topcoat) with a total maximum film thickness of 160 µm (6.4 mils). 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.

test method	test	**Series 09/73841** Zinc-free OGF primer
ISO 2360	**recommended film thickness**	160-180 µm (6.4-7.2 mils)
ASTM D3359 method B	**cross cut tape test** 1mm cutting distan	5B
ASTM D2247	**determination of resistance to humidity** 1,000 hours	maximum undercutting 1 mm (1/32 inch), no blistering
ASTM B117	**salt spray resistance** 3,000 hours	maximum undercutting 1 mm (1/32 inch), 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.

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Film thickness

A minimum film thickness of 80 µm (3.2 mils) per layer needs to be applied. The system requires the primer to be applied at 80-100 µm (3.2-4.0 mils) and the weather resistant topcoat to be sprayed at a film thickness of 80-100 µm (3.2-4.0 mils). It is required that the total film thickness of both, the primer and the topcoat, amount to a minimum film build of 160 µm (6.4 mils). In order to achieve sufficient opacity, it may become necessary to apply organic pigmented topcoats at a higher film thickness. Please note that non-pigmented topcoats, 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".

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.

In general, colours 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.

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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 09/73841

Certified according to ISO 9001 | 14001

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