

Corrosion Protection Primer

EPOXY-BASED

69/70000 | POWDER COATING PRIMER FOR METAL FACADES & STEEL CONSTRUCTION

69/70111 | POWDER COATING PRIMER FOR METAL FACADES & STEEL CONSTRUCTION

69/70366 | POWDER COATING PRIMER FOR METAL FACADES & STEEL CONSTRUCTION

EPOXY-BASED + ZINC

69/90350 | POWDER COATING PRIMER CONTAINING ZINC FOR STEEL CONSTRUCTION

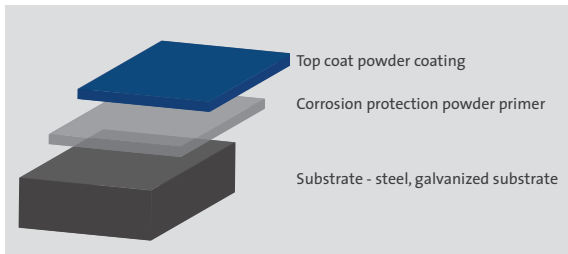
69/90500 | POWDER COATING PRIMER CONTAINING ZINC FOR METAL FACADES & STEEL CONSTRUCTION

EPOXY / POLYESTER BASED

89/70855 | POWDER COATING PRIMER FOR METAL FACADES & STEEL CONSTRUCTION

Applications

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



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

Product details

Packaging In original boxes of 20 kg each as well as in Minipacks of 2.5 kg each

Density (ISO 8130-2)

69/70000	1.5-1.6 g/cm ³
69/70111	1.5-1.6 g/cm ³
69/70366	1.5-1.6 g/cm ³
69/90350	2.4-2.6 g/cm ³
69/90500	1.8-1.9 g/cm ³
89/70855	1.4-1.5 g/cm ³

Theoretical coverage (see most recent version of data sheet # 1072)

Use before see printed date on product label; under dry conditions at no more than 25 °C, avoid direct and extended heat exposure

Properties

- very good corrosion protection
- good mechanical properties
- good chemical resistance
- good storage stability
- very good edge covering
- very good flow
- **69/70366** | particularly suitable for geometrically complex workpieces
- **69/90350, 69/90500** | zinc-based primer, particularly suited for sandblasted substrates

Finish | Colors

- **69/70366** | smooth glossy 80-100*
- **69/90350, 69/90500, 69/70111** | smooth glossy 70-80*
- **69/70000** | smooth matte
- **89/70855** | smooth glossy 85±5*
- Color: gray

* Gloss level acc. to ISO 2813/60° 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 datasheet. The production of tolerance samples is urgently recommended.

Steel pretreatment

The material to be coated is 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 galvanized workpieces are explicitly excluded). The following means of pre-treatment for the above mentioned steel have been tested according to the requirements of DIN ISO 12 944 and are approved.

I.) Zinc phosphating

The conversion layer formed by zinc phosphating must have a conversion coating weight of $2.5 \pm 1.0 \text{ g/m}^2$.

II.) Blasting

The raw steel surface needs to be blasted using sharp and edged mineral 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 acc. to ISO 8503-1 and ISO 8503-2 with the surface depth between a minimum of Rz 50 – 70 μm and a maximum of Rmax 100 μm and a peak amount Pc10 μm of 20 measured with perthometer (Mahr). Blasting must ensure, that a minimum of 95 % of the total area to be blasted is reached.

The powder coating must take place immediately after the blasting, in order to prevent possible corrosion.

Galvanized steel pretreatment

III) Chromate treatment

The quality guidelines published by GSB and Qualicoat as well as the international standards according to DIN, EN, BS and ASTM are to be observed.

Cure conditions & film thicknesses

applicable only for 69/70111, 69/90500

For the use as TIGER Shield 2-layer system, pre-gelling of the primer at $180^\circ\text{--}200^\circ \text{C}$ for 2–3 min. is indispensable for optimal inter-coat adhesion. As a result of the pre-gelling the primer must not be cured, but rather be melted – please mind different part configuration and metal thickness! Subsequently a top coat is applied with TIGER Drylac® for facade applications, e.g. in the Series 29, and completely cured according to the curing conditions of the product data sheet for this top coat.

Processing

Corona, Tribo (apart from 89/70855 corona only)

Note

No more than 12 hours should elapse between applying the primer and the spraying with any TIGER Drylac® top coat. During the pre-gelling and curing of the powder coating in directly heated gas ovens, a reduction of the adhesion between primer and top coat can occur due to the different composition of the waste gas.

TIGER Shield Test Results TIGER 2-Coat System

Checked on a blasted steel panel 3.0 mm in gauge, two coat system with a total film thickness of max. 160 - 180 μm and a top coat in a smooth glossy finish. Cure conditions according to the cure curves.

Testing	Test Standard	69/70000	69/70111	69/70366	69/90350	69/90500	89/70855
Salt spray test in h	ISO 9227	480 h max. undercutting $\leq 1 \text{ mm}$	1,440 h max. undercutting $\leq 1 \text{ mm}$	1,440 h max. undercutting $\leq 1 \text{ mm}$	1,440 h max. undercutting $\leq 1 \text{ mm}$	1,440 h max. undercutting $\leq 1 \text{ mm}$	720 h max. undercutting $\leq 1 \text{ mm}$
Determination of the resistance against humidity (Tropical test) in h	ISO 6270	240 h max. blistering $\leq 1 \text{ mm}$	720 h max. blistering $\leq 1 \text{ mm}$	720 h max. blistering $\leq 1 \text{ mm}$	720 h max. blistering $\leq 1 \text{ mm}$	720 h max. blistering $\leq 1 \text{ mm}$	480 h max. blistering $\leq 1 \text{ mm}$
Kesternich test 0.2l SO ₂ / cycle 30 cycles	ISO 3231 Evaluation according to DIN EN ISO 4628	-	Blistering 0 (SO ₂)	Blistering 0 (SO ₂)	Blistering 0 (SO ₂)	Blistering 0 (SO ₂)	-
Porous thickness	DIN 55670	non-porous	non-porous	non-porous	non-porous	non-porous	non-porous

*Institut für Lacke und Farben e.V., Magdeburg | ** Institut für Korrosionsschutz Dresden GmbH

TIGER Shield 2-Coat System Build-up and Curing Conditions

Please observe cure parameters closely since mechanical properties will develop before full cross-linking!

Corrosion category/ -stress	TIGER Drylac® Primer	Curing 1-coat Full cure		Curing 2-coat Pre-gelling		Top coat Complete Curing (substrate temperature) Dual layer		Number of layers	min. total film thickness [µm]
		Substrate temperature	min. film thickness [µm]	Substrate temperature	min. film thickness [µm]				
C3 (high) ✓480 h salt spray test	69/70000	200°C 10'	80	180°C 12'	60-80	Series 14 Series 29 Series 67 Series 68	170°C 15' 170°C 20' 160°C 15' 170°C 25'	2	140 - 160
			80		60-80				
			80		60-80				
			80		60-80				
C4 (high) ✓720 h salt spray test	69/90350	200°C 10'	80	160°C 15'	80	Series 14 Series 29 Series 67 Series 68	170°C 15' 170°C 20' 160°C 15' 170°C 25'	2	160
	69/90500	200°C 10'	80	180°C 3' *	80				
	69/70111	200°C 10'	80	180°C 3' *	80				
	69/70366	140°C 30'	80	140°C 30'	80				
	89/70855	190°C 15'	80	160°C 15'	80				
C5 -I+M (high) ✓1,440 h salt spray test	69/90350	200°C 10'	100	160°C 15'	100	Series 14 Series 29 Series 67 Series 68	170°C 15' 170°C 20' 160°C 15' 170°C 25'	2	200
	69/90500	200°C 10'	100	180°C 3' *	100				
	69/70111	200°C 10'	100	180°C 3' *	100				
	69/70366	140°C 30'	100	140°C 30'	100				
ISO 20340 C5 M (high) ✓4,200 h test	69/70366	140°C 30'	100-120	140°C 30' *	100 - 120	Series 68	170°C 25'	2 +KTL E-coat	200 - 220 +KTL E-coat

* Processing

For the 2-coat system, we generally recommend pre-gelling the primer (i.e. fusing the primer without fully curing it, taking into consideration different part geometries and wall thicknesses); **for primer types 69/90500 and 69/70111, pre-gelling is absolutely required.** Please observe the relevant Product Data Sheets and Guidelines for application in the most recent version. Pre-gelling the primer base coat during a dual-layer application process involves achieving the required substrate temperature. This leaves this layer intentionally undercured, guaranteeing improved adhesion between layers when the subsequent top coat is applied and fully cured - it also saves time and money. Apply full cure according to the relevant product data sheet in a one-coat application. When pre-gelling and the subsequent cure are done in a directly fired gas oven inter-coat adhesion between primer and the top coat may suffer. E-coat: check suitability for powder coatings. The relevant suitability tests must be performed. Directly heated gas ovens can also have a negative impact on intercoat adhesion. The relevant suitability tests must be performed. Directly heated gas ovens can also have a negative impact on intercoat adhesion. **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.**

General Information

Proper application of any packaging material is important, including but not limited to any fixing aids or means of transportation and to the ease of their post-removal (e.g. adhesive tapes). Under unfavorable storage conditions a micro climate (e.g. water and moisture accumulation under packaging foils) may lead to milky-white spots on the coated surface. This physical process only occurs occasionally and may be reversed with heat (e.g. posttempering in the oven, industrial heating device).

Joint sealing compounds and other auxiliary materials such as glazing aids, lubricants, drilling and cutting lubricants etc., which come into contact with coated surfaces, must be pH-neutral and free of paint-damaging substances. Prior to coating a suitability test at the applicator is therefore highly recommended.

Please pay attention to pigment related color differences of red-yellow-orange shades between architectural grade versus weather resistant powder coatings. Therefore for self-contained orders series continuity is to be maintained.

Subsequent mechanical processing of the coated components by sawing, drilling, milling, cutting and forming is to not to be carried out, as this leads to damage to the coating resulting in a weakening of the corrosion protection.

Disclaimer

Our verbal and written recommendations for the use of our products are based upon experience to the best of our knowledge in accordance with present technological standards. These are given in order to support the buyer or user. They are non-binding and do not constitute any contractual legal relationship or additional obligation from the purchase agreement. They do not release the purchaser from verifying the suitability of our products for the intended application at his own responsibility. We warrant that our products are free of flaws and defects to the extent as stipulated in our Terms of Delivery and Payment.

As part of our duty to inform, we modify our product information periodically according to technical progress. Therefore the most recent valid version of this information is applicable and is available at any time from the Download area at www.tiger-coatings.com. TIGER Coatings GmbH & Co. KG reserves the right to make changes to the product data sheet without written notification.

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Our technical leaflets and the General Terms of Delivery and Payment, the most recent version of which you can call up at any time at www.tiger-coatings.com in the Download area, form an integral part of this Product Data Sheet.

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EN ISO 9001 / 14001



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