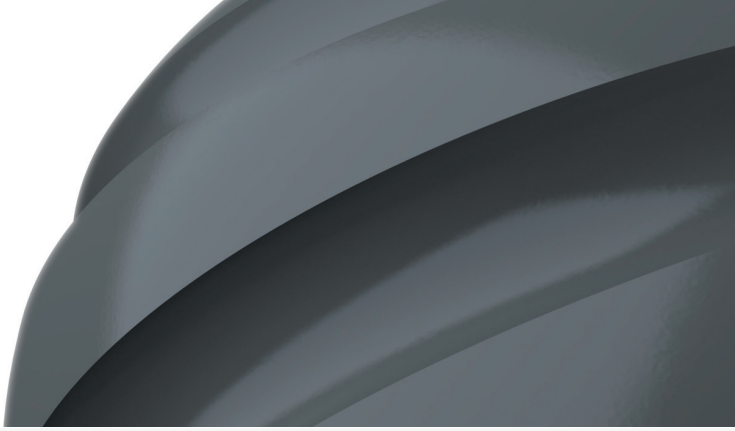
TIGER Drylac® Powder Coatings

TIGER-SHIELD

two-coat system



Corrosion protection powder coating primers

Long-lasting corrosion protection powder coatings for steel and galvanized substrates

Corrosion

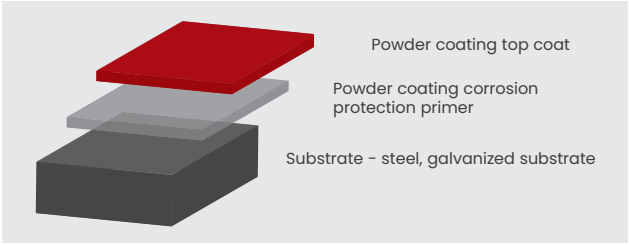
As per the German Institute for Standardization (DIN), corrosion is a "reaction between a metallic material and its environment resulting in a measurable change to the material". Depending on the type of corrosion involved, this process can degrade steel by up to 8 mils (0.2032 mm) per year.

In terms of maintenance, corrosion damage is defined as the condition of a material under consideration once the margin of wear has fallen below a specific, defined threshold value, thus resulting in an unacceptable, negative impact on the ability of the material to function properly when in use.

Special coating systems represent the primary method for ensuring that steel parts and structures are protected. Designing components in a way that inhibits corrosion has a profound effect on how corrosion progresses while components are in use. By determining the component geometry, design is predictive of later susceptibility to corrosion, while the design of upright surfaces, joints, drainage, etc., affects how a component will react to pollutants and corrosion.

Two-coat application

The design of TIGER-SHIELD two-coat application complies with ISO 12944-6, ISO 20340 and DIN 55633.



1. Base coat: TIGER Drylac® powder primer

Corrosion category/exposure *(according to ISO 12944)*	TIGER Drylac® powder primer	Description
C3 High	**69/90500 (USA and Mexico) 69/90701 (Canada)**	pure epoxy zinc-rich, 2-coat system, pre-gelling only
	69/70000	pure epoxy zinc-free, 2-coat system, pre-gelling only
	09/73841	epoxy-polyester hybrid, out-gassing forgiving, recommended pre-gelling
C4 High	**69/90500 (USA and Mexico) 69/90701 (Canada)**	pure epoxy zinc-rich, 2-coat system, pre-gelling only
	69/70000	pure epoxy zinc-free, 2-coat system, pre-gelling only
	09/73841	epoxy-polyester hybrid, out-gassing forgiving, recommended pre-gelling
C5 High	**69/90500 (USA and Mexico) 69/90701 (Canada)**	pure epoxy zinc-rich, 2-coat system, pre-gelling only
	69/70000	pure epoxy zinc-free, 2-coat system, pre-gelling only

TIGER-SHIELD two-coat system

2. Second coat: TIGER Drylac® top coat

Series	Specification
TIGER Drylac® Series 49	Polyester TGIC, partial AAMA 2603 compliant
TIGER Drylac® Series 149	Polyester TGIC-free, AAMA 2603 compliant
TIGER Drylac® Series 38	Polyester TGIC super durable, architectural grade, AAMA 2604 compliant
TIGER Drylac® Series 138	Polyester TGIC-free super durable, architectural grade, AAMA 2604 compliant

TIGER-SHIELD two-coat application

Corrosivity Category/ exposure *(according to ISO 12944)*	Typical environment	Pretreatment		TIGER Drylac® powder primer	Curing (substrate temperature)	Minimum film thickness	Top coat	Curing (substrate temperature)	Number of layers	Minimum total thickness
		Steel	Galvanized steel							
C3 (high) salt spray test	Urban and industrial atmospheres, moderate sulfur dioxide pollution	Iron phosphating or zinc phosphating	Sweeping or iron phosphating	**69/90500** (USA & Mexico) **69/90701** (Canada) **69/70000** **09/73841**	392 °F (200 °C) 2-3 min*	2.5 mils (60 µm)	TIGER Drylac® Series 49 TIGER Drylac® Series 149 TIGER Drylac® Series 38 TIGER Drylac® Series 138	392 °F (200 °C) 10 min 392 °F (200 °C) 7 min 392 °F (200 °C) 15 min 392 °F (200 °C) 7 min	2	5-7 mils** (120-180 µm)
C4 (high) salt spray test	Industrial and coastal areas with moderate salinity	Sandblasting + zinc phosphating	Sweeping or iron phosphating	**69/90500** (USA & Mexico) **69/90701** (Canada) **69/70000** **09/73841**	392 °F (200 °C) 2-3 min*	3.5 mils (80 µm)	TIGER Drylac® Series 49 TIGER Drylac® Series 149 TIGER Drylac® Series 38 TIGER Drylac® Series 138	392 °F (200 °C) 10 min 392 °F (200 °C) 7 min 392 °F (200 °C) 15 min 392 °F (200 °C) 7 min	2	7 mils** (180 µm)
C5 (high) salt spray test	Industrial areas with high humidity and aggressive atmosphere	Sandblasting + zinc phosphating	Sweeping or iron phosphating	**69/90500** (USA & Mexico) **69/90701** (Canada) **69/70000**	392 °F (200 °C) 2-3 min*	3.5 mils (80 µm)	TIGER Drylac® Series 49 TIGER Drylac® Series 149 TIGER Drylac® Series 38 TIGER Drylac® Series 138	392 °F (200 °C) 10 min 392 °F (200 °C) 7 min 392 °F (200 °C) 15 min 392 °F (200 °C) 7 min	2	8 mils** (200 µm)
C5 (high) salt spray test	Coastal areas above the waterline with high levels of salinity	Sandblasting + zinc phosphating + e-coat	Sweeping or iron phosphating	**69/90500** (USA & Mexico) **69/90701** (Canada) **69/70000**	392 °F (200 °C) 2-3 min*	4-4.5 mils (100-115 µm)	TIGER Drylac® Series 38 TIGER Drylac® Series 138	392 °F (200 °C) 15 min 392 °F (200 °C) 7 min	2 + e-coat	8-8.5 mils** (200-215 µm) + e-coat

Processing

**It is recommended to observe the most recent edition of the relevant Product Data Sheet and application guidelines.*

Pre-gelling the powder primer base coat during a two-coat application process involves achieving the required substrate temperature. This requires to intentionally keeping the first layer under-cured, guaranteeing improved adhesion between layers when the subsequent topcoat is applied and fully cured, which also saves time and money. In a single-coat application, apply full cure according to the relevant Product Data Sheet. When the pre-gelling and subsequent cure is done in a direct gas fired oven, intercoat adhesion between the primer and the topcoat may suffer due to a variation in the gas supply. It is recommended to check the suitability of the e-coat for powder coatings.

*** To achieve complete opacity, a higher film thickness of the top coat is required depending upon the product used.*

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