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

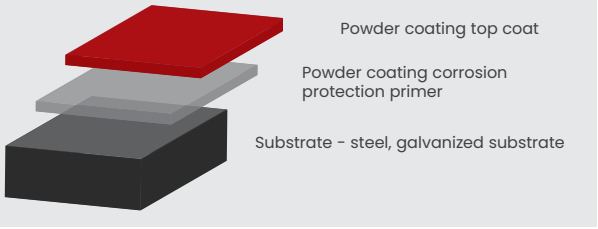
As per the German Institute for Standardization (DIN), corrosion is a "reaction between a metallic material and its environment resulting in a measurable change to the material". Depending on the type of corrosion involved, this process can degrade steel by up to 8 mils (0.2032 mm) per year.

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 |
| | **09/74425** | pure epoxy zinc-free, 2-coat system, FlexCURE technology |
| | **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 |
| | **09/74425** | pure epoxy zinc-free, 2-coat system, FlexCURE technology |
| | **09/73841** | epoxy-polyester hybrid, out-gassing forgiving, recommended pre-gelling |

# TIGER-SHIELD two-coat system

| | | |
|---|---|---|
| C5 High | **69/90500 (USA and Mexico)**<br>**69/90701 (Canada)** | pure epoxy zinc-rich, 2-coat system, pre-gelling only |
| | **09/74425** | pure epoxy zinc-free, 2-coat system, FlexCURE technology |
| | **69/70000** | pure epoxy zinc-free, 2-coat system, pre-gelling only |

## 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)<br>**69/90701** (Canada)<br>**69/70000**<br>**09/73841**<br>**09/74425** | 392 °F (200 °C) 2-3 min* | 2.5 mils (60 µm) | TIGER Drylac® Series 49<br>TIGER Drylac® Series 149<br>TIGER Drylac® Series 38<br>TIGER Drylac® Series 138 | 392 °F (200 °C) 10 min<br>392 °F (200 °C) 7 min<br>392 °F (200 °C) 15 min<br>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)<br>**69/90701** (Canada)<br>**69/70000**<br>**09/73841**<br>**09/74425** | 392 °F (200 °C) 2-3 min* | 3.5 mils (80 µm) | TIGER Drylac® Series 49<br>TIGER Drylac® Series 149<br>TIGER Drylac® Series 38<br>TIGER Drylac® Series 138 | 392 °F (200 °C) 10 min<br>392 °F (200 °C) 7 min<br>392 °F (200 °C) 15 min<br>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)<br>**69/90701** (Canada)<br>**69/70000**<br>**09/74425** | 392 °F (200 °C) 2-3 min* | 3.5 mils (80 µm) | TIGER Drylac® Series 49<br>TIGER Drylac® Series 149<br>TIGER Drylac® Series 38 | 392 °F (200 °C) 10 min<br>392 °F (200 °C) 7 min<br>392 °F (200 °C) 15 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)<br>**69/90701** (Canada)<br>**69/70000**<br>**09/74425** | 392 °F (200 °C) 2-3 min* | 4-4.5 mils (100-115 µm) | TIGER Drylac® Series 38<br>TIGER Drylac® Series 138 | 392 °F (200 °C) 15 min<br>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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