



## PE50 / PX50 OUTDOOR DURABLE TGIC-FREE POLYESTER POWDER COATING

TECHNICAL DATA SHEET

### INTRODUCTION

OXYPLAST PE50/PX50 is a TGIC-free thermosetting powder coating based on saturated polyester resins specially selected for exterior use.

Its very good flowout and excellent resistance to atmospheric ageing and ultra-violet light make it highly decorative and durable in outdoor environments. This high performance has been proven through many years of service in various applications.

### GLOSS AND COLOUR RANGE

Gloss levels range from satin to high gloss: 50-95% at 60°C. A full colour range is available.

### APPLICATIONS

Include architectural hardware, outdoor furniture, air conditioners, signboards, bicycle frames, garage doors, etc.

### APPLICATION SCHEDULE

May be applied by electrostatic spraying using classic devices which can provide a negative tension of 60 - 80kV. The powder is cured in a suitable convection or infra-red oven.

#### Curing:

Medium cure 10 mins at 180°C

Optimal film thickness: 60 - 80µm.

### SUBSTRATES AND PRE-TREATMENT

May be applied to the following substrates after the appropriate cleaning and conversion coating:

<b>Ferrous Metals</b> (cold-rolled steel, cast iron, etc.)	Iron or zinc phosphatation
<b>Zinc Surfaces</b> (galvanised steel, zinc alloy)	Chromatation or zinc phosphatation
<b>Aluminium Alloys</b>	Chromatation

### STORAGE

At temperatures not exceeding 25°C and under dry conditions, PE50/PX50 powders may be stored for up to 6 months without affecting their free-flowing properties. The coating thus obtained will still have optimal characteristics.

### PROPERTIES OF THE POWDER

<b>Melting Range (Kofler)</b>	90 – 114°C
<b>Specific Gravity (DIN 55990/3)</b>	1.25 – 1.75 (depending on colour)
<b>Particle Size Distribution</b> % above 100 µm	0%
<b>% above 32 µm</b>	50 – 60%

*In accordance with OXYPLAST policy of product development, this specification is subject to change without notice.*



## PROPERTIES OF THE COATING

### a. Physical and Mechanical

The following are properties typical of PE50 / PX50 determined on 0.8mm gauge degreased galvanised steel:

<b>Film Thickness</b>	60 - 80µm
<b>Gloss (ASTM D523,60°)</b>	50 - 95%
<b>Flow-out</b>	Very good
<b>Adhesion (DIN 53151 – 2mm spacing)</b>	GT = 0
<b>Pencil hardness (ASTM D3363 – Staedtler Lumograph)</b>	H - 2H
<b>Buchholz hardness (DIN 53153)</b>	91 - 111
<b>Sclerometre Hardness</b>	350 - 450gms
<b>Conical mandrel (ASTM D522)</b>	< 4mm
<b>Direct impact (ASTM D2794 – Ø0.625 in. ball)</b>	> 120kg.cm
<b>Reverse impact (ASTM D2794 – Ø0.625in. ball)</b>	> 120kg.cm
<b>Erichsen cupping (DIN 53156)</b>	> 6mm
<b>Heat resistance, 30 mins at 200°C</b>	Slight yellowing on whites and very light colours

### b. Resistance to Common Synthetic Detergents

<b>72 hours immersion in 3% solution</b>	No blistering or loss of adhesion No significant change in appearance
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### c. Salt-Spray Resistance

According to ASTM B117-73 on,

<b>Chromated Aluminium, 2000 hours</b>	No blistering or loss of adhesion
<b>Zinc Phosphated Steel, 1000 hours</b>	3-6mm undercutting
<b>Iron Phosphated Steel, 500 hours</b>	8-10mm undercutting

### d. Humidity Resistance

According to ASTM D2247 on,

<b>Chromated Aluminium, 1000 hours</b>	No blistering or loss of adhesion
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### e. Chemical Resistance

PE50 / PX50 has been checked for resistance to various chemicals (48 hours contact with the coating at ambient temperature).

<b>Nitric acid 20%, Sulphuric acid 50%, Sodium hydroxide 20%, Ammonium hydroxide 35%, Chromic acid 20%, Acetic acid 10%, Citric acid 5%, Hydrogen peroxide 40 vol., Hydrogen sulphide saturated, Ethanol, n-Butanol</b>	Film undamaged
<b>Petroleum ether</b>	Film slightly softened
<b>Methyl Ethyl Ketone</b>	Film damaged

### f. Accelerated Weathering

According to DIN 53231

<b>1000 hours Suntest (150 kilolux, 40°C, UV limit 320 nm, Water immersion every 20')</b>	Total colour change (washed), Delta E = 0.8 – 3.0 depending on colour Excellent gloss retention, Negligible chalking
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### f. Accelerated Weathering – Florida Exposure

<b>24 months exposure</b>	Excellent gloss retention, negl. chalking
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