



PR12 OUTDOOR DURABLE TGIC POLYESTER POWDER COATING

5 Year Warranty* Powder Coating

*Conditions apply

TECHNICAL DATA SHEET

INTRODUCTION

OXYPLAST PR12 is a thermosetting powder coating based on saturated polyester resins specially selected for exterior use.

Its very good flow-out 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°. 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 200°C
Optimal film thickness: 60 - 80µm.

SUBSTRATES AND PRE-TREATMENT

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

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

STORAGE

At temperatures not exceeding 30°C and under dry conditions, PR12 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

Melting Range (Kofler)	90 - 114°C
Specific Gravity (DIN 55990/3)	1.25 – 1.75 (depending on colour)
Particle Size Distribution % above 100 µm	0%
% above 32 µm	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 PR12 determined on 0.8mm gauge degreased galvanised steel:

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

b. Resistance to Common Synthetic Detergents

72 hours immersion in 3% solution	No blistering loss of adhesion No significant change in appearance
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c. Salt-Spray Resistance

According to ASTM B117-73 on,

Chromated aluminium, 2000 hours	No blistering or loss of adhesion
Zinc phosphated steel, 1000 hours	3-6mm undercutting
Iron phosphate steel, 1000 hours	8-10mm undercutting

d. Humidity Resistance

According to ASTM D2247 on,

Chromated aluminium, 1000 hours	No blistering or loss of adhesion
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e. Chemical Resistance

PR12 has been checked for resistance to various chemicals (48 hours contact with the coating at ambient temperature).

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	Film undamaged
Petroleum ether	Film slightly softened
Methyl Ethyl Ketone	Film damaged

e. Accelerated Weathering

According to DIN 53231

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

24 months exposure	Excellent gloss retention, negl. chalking
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