



PR12 OUTDOOR DURABLE POLYESTER POWDER COATING

TECHNICAL DATA SHEET

INTRODUCTION

OXYPLAST PR12 is a thermosetting powder coating based on saturated polyester resins specially selected for exterior use. It's 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 : Iron or zinc phosphatation
(cold-rolled steel, cast iron, etc.)

Zinc surfaces : Chromatisation or zinc phosphatation
(galvanised steel, zinc alloy)

Aluminium alloys : Chromatisation

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 100µm : 0%

% above 32 µm : 50 – 60%

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PROPERTIES OF THE COATING

Physical and Mechanical	<p>The following are properties typical of PR12 determined on 0.8mm gauge degreased galvanised steel:</p> <p>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 – 0.625 in. Diameter ball) : > 120kg.cm Reverse impact (ASTM D2794 – 0.625 in. Diameter ball) : > 120kg.cm Erichsen cupping (DIN 53156) : > 6mm Heat resistance, 30 mins at 200°C : Good</p>
Resistance to Common Synthetic Detergents	<p>72 hours immersion in 3% solution : No blistering or loss of adhesion : No significant change in appearance</p>
Salt-Spray Resistance	<p>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 phosphated steel, 1000 hours : 8-10mm undercutting</p>
Humidity Resistance	<p>According to ASTM D2247 on chromated aluminium, 1000 hours : No blistering or loss of adhesion</p>
Chemical Resistance	<p>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 : Film undamaged 10%, Citric acid 5%, Hydrogen peroxide 40 vol., Hydrogen sulphide saturated, Ethanol, n-Butanol Petroleum ether : Film slightly softened Methyl Ethyl Ketone : Film damaged</p>
Accelerated Weathering	<p>According to DIN 53231 1000 hours Suntest : Total colour change (washed) (150 kilolux, 40°C, Delta E = 0.8 – 3.0 depending on colour UV limit 320 nm, Excellent gloss retention Water immersion every 20') Negligible chalking</p>
Natural Weathering – Florida Exposure	<p>24 months exposure : Excellent gloss retention Negligible chalking</p>

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

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