



PR18 OUTDOOR DURABLE SATIN-MATT POLYESTER POWDER COATING

TECHNICAL DATA SHEET

INTRODUCTION

OXYPLAST PR18 is a satin-matt 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 matt to satin: 15 - 40% at 60°. A full colour range is available; with the whites and very light shades showing slight overbake yellowing.

APPLICATIONS

Include architectural hardware, ceiling panels, outdoor furniture, lamp posts, signboards, 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 25°C and under dry conditions, PR18 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)	:	75 - 115°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	The following are properties typical of PR18 determined on 0.8mm gauge degreased galvanised steel:	
	Film Thickness	: 60 - 80µm
	Gloss (ASTM D523,60°)	: 15 – 405%
	Flow-out	: Very good
	Adhesion (din 53151 – 2mm spacing)	: GT = 0
	Pencil hardness (ASTM D3363-Staedtler Lumograph)	: H – 2H
	Conical mandrel (ASTM D522)	: < 8mm
	Direct impact (ASTM D2794 – 0.625 in. Diameter ball)	: > 20kg.cm
	Reverse impact (ASTM D2794 – 0.625 in. Diameter ball)	: > 50kg.cm
	Erichsen cupping (DIN 53156)	: > 2mm
	Heat resistance, 30 mins at 200°C	: Slight yellowing
	Resistance to Common Synthetic Detergents	72 hours immersion in 3% solution
Salt-Spray Resistance	According to ASTM B117-73 on, Chromated aluminium, 2000 hours	: No blistering or loss of adhesion
	Zinc phosphated steel, 250 hours	: 1mm undercutting
	Iron phosphated steel, 250 hours	: 10mm undercutting
Humidity Resistance	According to ASTM D2247 on chromated aluminium, 1000 hours	: No blistering or loss of adhesion
Chemical Resistance	PR18 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
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
Natural Weathering – Florida Exposure	24 months exposure	: Excellent gloss retention Negligible chalking

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

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