PROTECH OXYPLAST

OXYPLAST APR SUPER-DURABLE ARCHITECTURAL POWDER COATING

OXYPLAST APR is a thermosetting powder coating based on super-durable polyester resins systems. The use of these resin systems, together with the selection of highly durable pigments, allows the formulation of a coating with significantly improved resistance to weathering.

Compared to standard polyester powders, **OXYPLAST APR** offers much longer outdoor durability in terms of gloss retention, colour stability and chalking resistance while maintaining the excellent protective function expected of polyester powders.

OXYPLAST APR is formulated to meet the most stringent requirements in the AAMA2604-98 and Qualicoat 13th Edition (Class 2) architectural specifications. It is recommended for the coating of architectural hardware for projects requiring long-lasting durability in demanding climatic conditions such as the tropics.

GLOSS AND COLOUR RANGE

Gloss levels range from matt to high gloss:25-95% at 60°C. A wide colour range is available, with certain colours subject to technical approval.

APPLICATIONS

Only on architectural aluminium extrusions and panels.

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	:	12 mins at 200°C.
Optimal film thickness	:	60- 80um

PRE-TREATMENT

May be applied to aluminium substrates pre-treated according to DIN 50939.

STORAGE

Under dry conditions, APR powders may be stored for up to 6 months at 25°C maximum, or 3 months at 30°C maximum, 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 100um	:	0%
% above 32um	:	50 - 60%

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PROPERTIES OF THE COATING

a. Physical and Mechanical

The following are properties typical of **APR** determined on 0.8mm chromated aluminium:

Film Thickness (ISO2360)	:	60 - 80um
Gloss (ASTM D523, 60°)	:	25 - 95%
Finish (Visual)	:	Defect-free, very good flow-out
Colour uniformity (Visual and instrumental)	:	Uniform
Adhesion (ASTM D3359 - 2mm)	:	No detachment
Wet adhesion (1/16 in. cross-hatch,100°F distilled water 24hrs)	:	No detachment or blistering
Boiling water adhesion (1/16 in. cross-hatch, boiling distilled water,20')	:	No detachment or blistering
Pencil hardness (ASTM D3363)		H-2H
Cupping (ISO 1520, min 5mm, tape pull)	:	No detachment
Direct impact (ASTM D2794 - 0.625 in. dia. ball)	:	Min. 0.20 in. deformation
Bending (ISO 1519, max. 5mm dia., tape pull)	:	No detachment
Falling sand abrasion (ASTM D968, abrasion coefficient)	:	Min. 20l/mil
Heat resistance, 30 mins at 200°C	:	Good

b. Corrosion Resistance

Determined on chromated aluminium.

Humidity resistance (ASTM D2247, 3000 hours) No. 8	:	Blistering not exceeding "few"
Salt spray resistance (ASTM B117, 3000hours, tape pull)	:	Max.1.6mm failure from scribe, 2% blistering
Acetic acid salt spray resistance (ISO 9227, 1000hrs)	:	No undercutting at scratch

c. Chemical Resistance

Muriatic acid (10% solution of 37% HCl, 15' Spot Test)	:	No blistering or visual change
Nitiric acid (70% HNO_3, 30') (Hunter)	:	Colour change ≤ 5ΔEunits
Detergent (3% solution, 38°C, 72 hours, tape pull)	:	No loss of adhesion, blistering or significant visual change
Mortar (ASTM C207, 38°C, 100%RH, 24hr Pat Test)	:	Mortar is removable, no loss of adhesion or visual change
Sulphur dioxide (Kesternich, ISO 3231, 0.2l, 24cycles):		No loss of adhesion, blistering, softening or colour change

d. Florida Exposure

5 years, 45°, facing South.

Colour retention (ASTM D2244)	: ΔE(Hunter) ≤5
Gloss retention (ASTM D523,60°)	: ≥30%
Chalk resistance (ASTM D659)	: Rating ≤ No.8
Erosion resistance (ASTM B244)	: <10% film loss

e. Accelerated Weathering

i. Suntest (Qualicoat 11th Edition, 1000hours, Class 2)

Gloss retention (ISO 2813)	: >90%
Colour change, ΔE (DIN 6174)	: RAL 3005 < 2.5 RAL 5010 < 2.5 RAL 9010 < 1.0