

Technical Resources Area

[Search Page](#) | [Service Conditions](#) | [Main Site](#) | [Data Sheets](#)



Tel: +44 (0) 1252 733777



[Close window](#)

[English \(GB\)](#) [English \(US\)](#) [Español](#)

PLASCOAT PPA 571 ES electrostatic spray

Performance Polymer Alloy Coating

GENERAL DESCRIPTION

Plascoat PPA 571 ES is a thermoplastic coating powder which has been specifically designed to provide a long lasting, tough coating for exterior applications to mild steel, galvanised steel and aluminium. It is based on an alloy of acid modified polyolefins. Therefore it is halogen free and the combustion fumes are low in smoke and have a low toxicity index.

Plascoat PPA 571 ES is resistant to stress cracking, adverse weather conditions, detergents, salt spray and typical airborne pollutants. The coating maintains excellent adhesion to the metal substrate without the need for a separate primer. The material also provides good abrasion and impact resistance.

f PPA 571 over-sprayed powder is to be recycled then blend a maximum of 25% of this over-sprayed powder with 75% of virgin powder.

For dip-coating, flock spraying or flame spraying please see the [Plascoat PPA 571 data sheet](#).

TYPICAL USES

[Fence posts](#), fencing panels, sign posts, [street furniture](#), balustrading, [stadium seating](#), pipes including [potable water](#), [cable tray](#) and ducting. Garden furniture, gutter brackets, [battery boxes](#), fan guards and wirework.

SUMMARY OF ESSENTIAL COATING REQUIREMENTS

1. The metalwork must be either grit-blasted or chemically pre-treated prior to coating.*
2. For Corona guns set the voltage at 30-50kV, or use overspray setting, or set amps to 10-20 microamps.
3. Heating schedule typically as polyester (see below). Ensure metal temperature exceeds 150°C.*
4. Thickness must be a minimum of 170 microns. (See note 2 re voltage above. This may also require a longer spraying time or increased powder supply. This thickness should be checked periodically.
5. Galvanised substrates may need degassing.
6. Do NOT use any cured resin based pre-treatment system (e.g. acrylics)
7. Adhesion checks should be carries out at regular intervals.*

TYPICAL PROPERTIES OF THE POWDER

Coverage (100% efficiency)	5.2m ² /Kg at 200 μ
Particle Size	95% less than 150μ
Bulk Density (at rest)*	0.40 g/cm ³
Packaging	20 kg cardboard boxes

TYPICAL PROPERTIES OF THE MATERIAL

Specific Gravity*		0.96 g/cm ³
Tensile Strength	ISO 527	14 MPa
Elongation at Break	ISO 527	800%
Brittleness Temperature	ASTM D-746	-78°C
Hardness	Shore A	95
	Shore D	44
Vicat Softening Point	ISO 306	70°C
Melting Point		105 °C
Tear Strength	ASTM D1938	22 N.mm
Environmental Stress Cracking	ASTM D1693	Greater than 1000 hrs

*See "PPA 571 Processing Guide".

GUIDE TO TYPICAL COATING CONDITIONS

Recommended *Pre-treatment*:

The metal must be degreased and all mill scale and corrosion products removed.

Mild steel should be solvent degreased then either grit blasted to Swedish Standard SA 2½ to 3 or phosphated. Galvanised steel should be solvent degreased if necessary. Then either grit blasted at 0.3MPa (40 psi) using a fine grit (0.2 to 0.5mm) or treated with a phosphate system. To achieve the maximum long-term adhesion, Plascoat recommend the use of zinc phosphate systems on both steel and galvanised steel. If chemical pre-treatment is used it is essential to remove any previously applied resin based pre-treatment systems. Discuss this with your pre-treatment supplier.

Aluminium should be degreased to remove lubricants and processing soaps. For most purposes no further treatment is necessary. However for maximum long term corrosion resistance chromate treatment is recommended.

Coating Conditions:

When the powder is applied using a Corona Discharge gun a negative polarity is required. A voltage of 30-50 KV or 10-20 microamps is recommended. Plascoat PPA 571 ES can also be applied by Tribocharge guns. The heating schedule should be 160°C to 220°C for 5 - 40 mins depending on metal thickness. To ensure optimum adhesion, the metal temperature during processing must exceed 150°C. Since Plascoat PPA 571 ES is a thermoplastic there is no cross-linking to take place. Therefore when the powder has melted to form a smooth coating no further heating is required.

Overheating can cause craters to form in the coating or the coating to reduce gloss. It may also cause the coating to discolour in storage or in service. Thicknesses outside the recommended range may be detrimental to the properties of the coating.

Do not cure thermosetting powder paints with PPA 571 ES. The fumes from such systems can affect the surface of the PPA 571 ES coatings.

Note: If PPA 571 ES over-sprayed powder is to be recycled, then blend a maximum of 25% of this over-sprayed powder with 75% unused powder.

For typical properties of the coating see below.

Toxicity Index	NES 7	1.8
Flammability	UL94 3.2mm moulding	Unrated (see also Properties of Coating)
Dielectric Strength	IEC 243 VDE 0303	47.8 KV/mm at 370 µ
Volume Resistivity	IEC 93	3 x 10 ¹⁷ Ohm.cm
Surface Resistivity	IEC 93	8 x 10 ¹⁵ Ohm at 200 µ

* These values may vary from colour to colour

STORAGE

Stored in a clean dry area at 10-25°C and out of sunlight, the material should not deteriorate. However, in the interest of good housekeeping, old stocks should be used first.

HEALTH AND SAFETY

Plascoat PPA 571 ES is supplied as a finely divided powder. Whilst there are no known health hazards associated with PPA 571 ES, normal handling precautions for dealing with fine organic powders should be taken - i.e. excessive dust generation and inhaling of the powder should be avoided. Facilities may be required for removing excess dust from the working area during the coating of certain difficult items.

As with all polymeric powders, the material can ignite if brought into contact with a high temperature source or ignition - particularly in the fluidised condition.

Reference should be made to Plascoat Health and Safety Data Sheet [HS504](#), available on request.

Should the coating be required for contact with [food or potable water](#), further details should be obtained from [Plascoat](#).

TYPICAL PROPERTIES OF THE COATING

The following data applies to a 200 micron coating applied under standard conditions onto 3mm thick steel or aluminium. The pretreatment consisted of degreasing and gritblasting unless otherwise stated.

Recommended Coating Thickness		170-300 microns
Appearance		Smooth/Glossy
Gloss	ISO 2813	70
Impact Strength	Gardner (drop weight) ISO 6272 Direct 23°C (3mm plate) Indirect 0°C (3mm plate)	2.7 Joules 18.0 Joules
	Gardner (drop weight) ISO 6272 Direct 23°C (0.7mm plate) Indirect 0°C (0.7mm plate)	> 27 Joules > 27 Joules
Abrasion	Taber ASTM D4060/84 H18, 500g load, 1000 cycles	60 mg weight loss
Salt Spray	ISO 7253 Steel - Scribed	Results after 1000 hours Loss of adhesion less than 10mm from scribe.
	- Unscribed Aluminium - Scribed - Unscribed	Under film corrosion 2-3mm No loss of adhesion No loss of adhesion No loss of adhesion
Chemical Resistance*	- Dilute Acids 60°C	Good
	- Dilute Alkali 60°C	Good
	- Salts (except peroxides) 60°C	Good
	- Solvents 23°C	Poor
Adhesion	PSL, TM 19	A-1
Weathering	QUV ASTM G53-77	2000 hrs - No significant change in colour or loss of gloss.
	Florida 45° facing South	3 years - No significant change in colour or loss of gloss.
Burning Characteristics		
Ignitability	BS476: Pt5: 1979 500 micron coating	P - not easily ignitable
Surface spread of flame	BS476: Pt7: 1979 500 micron coating	Class 1
Fire Propagation	BS476: Pt6: 1989 500 micron coating	I = 0.2
Flammability	UL94	V _o (see also Properties of Material)
Safe Working Temperature	(Continuous in air)	60°C max

*Further technical advice may be obtained from Plascoat concerning the effects of particular chemicals or mixtures.

QUALITY

Plascoat is committed to the manufacture and supply of a wide range of [thermoplastic coating powders](#). This service is backed by the unrivalled experience of

Plascoat can also offer, through its factories in Europe, specialist plastic coating equipment, an extensive [custom coating service](#) and a [size reduction service](#) for plastics and other materials.

over 50 years of powder coating application.

With a policy of continuous improvement to its range of products, Plascoat reserves the right to alter or amend any item. Stringent quality control procedures are carried out at every relevant stage of manufacture and Plascoat operates a quality management system approved by BSI in accordance with ISO 9001:2000.

Plascoat is a subsidiary member of the IPT Group of companies.

Plascoat is a UK registered trade name.

It should be appreciated that the information given here is, to the best of our knowledge, true and accurate. However, since conditions under which our materials and equipment may be used are beyond our control, recommendations are made without warranty or guarantee.

See also

[PPA 571](#) [PPA 571H](#) [PPA 571HES](#)

[Independent report for insurance-based guarantee for PPA 571ES coated items](#)

Plascoat Systems Limited

Trading Estate,
Farnham, Surrey,
GU9 9NY
United Kingdom
Tel: +44 (0) 1252 733777
Fax: +44 (0) 1252 721250
email: sales@plascoat.com

Plascoat Europe BV

Meeuwenoordlaan 19,
Postbus 9
3214VT Zuidland
The Netherlands
Tel: +31 (0) 181 458 888
Fax: +31 (0) 181 458 877
salespce@plascoat.nl

Plascoat Corp

Crown Centre
Suite 600
5005 Rockside Rd
Cleveland
OH44131 U.S.A.
Tel: 800 489 7236
Fax: +1 216 520 1273
plascoat@nls.net

Plascoat Corp (Sales & Dist)

[Punda Mercantile Inc](#)
4115 Sherbrooke Str West,
Suite 610, Montreal,
Quebec H3Z 1K9
Call: 800 489 7236
Tel: +1 514 931 7278
Fax: +1 514 931 7200
sales@punda.com

PPA571ES/03/09/07 /Web