

Technical Resources Area



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PLASCOAT PPA 571 ES

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, galvanized steel and aluminum. 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.

If 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.

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. Galvanized 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.

For both types of metal surface, ensure any previously

TYPICAL PROPERTIES OF THE POWDER

Coverage (100% efficiency)	25.4ft ² /lb at 8 mils
Particle Size	95% less than 6 mils
Bulk Density (at rest)*	25 lb/ft ³
Packaging	44lb cardboard boxes

TYPICAL PROPERTIES OF THE MATERIAL

Specific Gravity*		0.96 g/cm ³
Tensile Strength	ISO 527	2030 lb/in ²
Elongation at Break	ISO 527	800%
Brittleness Temperature	ASTM D-746	-108°F
Hardness	Shore A	95
	Shore D	44

applied resin-based pre-treatment is removed before applying your own in-house pre-treatment. Advice on this can be obtained from your pre-treatment supplier.

Aluminum 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 is recommended. Plascoat PPA 571 ES can also be applied by Tribocharge guns. The heating schedule should be 320°F to 428°F for 5-40 mins depending on metal thickness. To ensure optimum adhesion a metal temperature must exceed 302°F. 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 discolor 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.

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 fluidized 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](#).

Vicat Softening Point	ISO 306	158°F
Melting Point		221°F
Tear Strength	ASTM D1938	0.13 lbf./mil
Environmental Stress Cracking	ASTM D1693	Greater than 1000 hrs
Toxicity Index	NES 7	1.8
Flammability	UL94 3.2mm moulding	Unrated (see also Properties of Coating)
Dielectric Strength	IEC 243 VDE 0303	1.21 kV/mil at 15 mils
Volume Resistivity	IEC 93	4.5 x 10 ¹⁷ Ohm.cm
Surface Resistivity	IEC 93	5.1 x 10 ¹⁵ Ohm at 8 mil

**These values may vary from color to color*

STORAGE

Stored in a clean dry area at 50-77°F and out of sunlight, the material should not deteriorate. However, in the interest of good housekeeping, old stocks should be used first.

TYPICAL PROPERTIES OF THE COATING

The following data applies to a 8 mils coating applied under standard conditions onto 0.125 inch thick steel or aluminum. The pre-treatment consisted of degreasing and gritblasting unless otherwise stated.

Recommended Coating Thickness		6-10 microns
Appearance		Smooth/Glossy
Gloss	ISO 2813	70
Impact Strength	Gardner (drop weight) ISO 6272 Direct 73°F (0.125 inch plate) Indirect 32°F (0.125 inch plate)	24 in.lbs 150 in.lbs
	Direct 73°F (0.03 inch plate) Indirect 32°F (0.03 inch plate)	> 240 in.lbs > 240 in.lbs
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 Aluminum - Scribed	Under film corrosion 2-3mm No loss of adhesion
	- Unscribed	No loss of adhesion
Chemical Resistance*	- Dilute Acids 140°F	Good
	- Dilute Alkali 140°F	Good
	- Salts (except peroxides) 140°F	Good
	- Solvents 73°F	Poor
Adhesion	PSL, TM 19	A-1
Weathering	QUV ASTM G53-77	2000 hrs - No significant change in color or loss of gloss.
	Florida 45° facing South	3 years - No significant change in color or loss of gloss.
<u>Burning Characteristics</u>		
Ignitability	BS476: Pt5: 1979 500 micron coating	P - not easily ignitable
Surface spread of flame	BS476: Pt7: 1979 500 micron coating	Class 2
Fire Propagation	BS476: Pt6: 1989 500 micron coating	I = 0.2
Flammability	UL94	V ₀ (see also Properties of Material)
Safe Working Temperature	(Continuous in air)	140°F max

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

QUALITY

Plascoat can also offer, through its many factories in

[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 over 40 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.

Europe, specialist plastic coating equipment, an extensive [custom coating service](#) and a [size reduction service](#) for plastics and other materials.

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](#)

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