

Plascoat® PPA 691

Coating Powder

11/2018

General description

Plascoat PPA 691 is a self-adhesive powder based on a blend of polyolefins and is supplied for the fluidised bed coating of battery boxes. It provides good resistance to acids and can be over-sprayed with epoxy paints if required. This coating meets the hardness, electrical and chemical resistance requirements of ATEX.

Typical uses

Battery boxes

Guide to typical coating conditions

Recommended Pre-treatment: Ensure metal is clean by thorough degreasing and removal of rust and mill scale. This is usually achieved by grit blasting.

Batch Operation:

Metal pre-heat temperature: 240°C - 280°C depending on metal thickness.

Preheat time is usually 15-30 minutes. The battery boxes are dipped and rotated in the fluidising tank to fill and empty them in the minimum time possible. This should achieve an outside coating of 500-800 microns and an internal lining of 800 to 1200 micron.

The process temperature used should be the minimum to achieve an acceptable surface finish. Overheating may cause the coating to discolour later in storage or in service.

Thicknesses outside the recommended range may be detrimental to the properties of the coating.

For typical properties of the coating see overleaf.

Typical properties of the powder

Coverage (100% efficiency)	3.1 m ² /kg at 350 microns
	1.1 m ² /kg at 1000 microns
Particle Size	below 350 microns
Bulk Density - at rest	0.35 g/cm ³
Fluidising Characteristics	Excellent
Packaging	20 kg sacks

Typical properties of the material

Specific Gravity*		0.94 g/cm ³
Tensile Strength	ISO 527	12 MPa
Elongation at Break	ISO 527	100%
Brittleness Temperature	ASTM D-746	-70°C
Hardness	Shore A	98
	Shore D	56
Vicat Softening Point	ISO 306	90°C
Melting Point		105-125 °C
Environmental		
Stress Cracking	ASTM D1693	Greater than 1000 hrs
Toxicity Index**	NES 7	1.8
Flammability**	UL94 3 mm moulding	Unrated
	(see also Properties of Coating)	
Dielectric Strength**	IEC 60243	46 kV/mm at
	380 microns	
Autoignition Temperature**		greater than 340°C
Breakdown Voltage**	IEC 60243	17.8 kV
		at 380 microns
Comparative tracking		
index	IEC 60112	> 650 Volts
Surface Resistivity**	IEC 60093	2.23 x 10 ¹⁰ Mega Ohm
Water Absorption**	ASTM D570-81	<0.03%

* These values may vary from colour to colour

** These figures are based on test results obtained with similar materials

Storage

Stored in a clean, dry area at ambient temperature the material will not deteriorate. However, in the interest of good housekeeping, stocks should be rotated.

Health and Safety

Plascoat PPA 691 is supplied as a finely divided powder. Whilst there are no known health hazards associated with PPA 691, 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 the respective Plascoat Health and Safety Data Sheet, available on request.

Typical properties of coating

The following data applies to a 600 microns coating applied under standard conditions, onto 3 mm thick steel. The pre-treatment consisted of degreasing and shot blasting.



Recommended Coating Thickness		600 -1200 microns
Appearance		Smooth, low gloss
Gloss	ISO 2813	50
Impact Strength	Gardner (drop weight) ISO 6272 Direct 23°C	2.5 Joules
Abrasion	Taber ASTM D4060/84 H18, 500g load, 1000 cycles CS17, 500g load, 1000 cycles	80 mg weight loss 35 mg weight loss
Weathering	QUV, 2000 hrs Salt spray ASTM B117 1000 hrs	No cracking or crazing No blistering or corrosion
Chemical Resistance (at 23°C)	- Dilute Acids 60°C - Dilute Alkali 60°C - Salts (except peroxides) - Solvents 23°C	Good Fair Fair Not recommended
Burning Characteristics Ignitability*	BS476: Pt5: 1979 500 microns coating	P - not easily ignitable
Surface spread of flame*	BS476: Pt7: 1979 500 microns coating	Class 2
Fire Propagation*	BS476: Pt6: 1989 500 microns coating	I = 0.2
Flammability*	UL94	V ₀ (see also Properties of Material)
Safe Working Temperature		70°C max. continuous

** These figures are based on test results obtained with similar materials

Disclaimer

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