PLASCOAT PPA571 AQUA
Performance Polymer Alloy Coating

GENERAL DESCRIPTION
PPA571 AQUA is part of the PPA571 range of thermoplastic coating powders; specifically engineered to produce strong, UV resistant, flexible, long-lasting protective coatings for applications onto metal substrates without the need for a primer or curing. As part of the PPA571 family, PPA571 AQUA is also halogen free, produces low levels of smoke when coated, and has a low toxicity index.

Plascoat PPA571 AQUA is a BPA free, potable water contact approved material, designed for coating by fluidised bed dipping or flock spraying. PPA571 AQUA is a tough, high melt viscosity, resilient material specifically engineered for protecting water & sewerage pipes and fittings.

TYPICAL USES
Pipes and Fittings at ambient temperatures for the water and aqueous chemical industries. Suitable for over ground and underground applications.

APPROVALS
SAI Global (AS/NZS 4158:2003)
WRAS approved (23°C & 60°C)
AS/NZS 4020:2005

KTW	**ACS (Pending)**
DVGW	**AWWA (Pending)**
NSF	**DWI (Pending)**

GUIDE TO TYPICAL COATING CONDITIONS
Recommended Pre-treatment:

To achieve the full benefits of the material, the substrate should be blast
cleaned to Swedish standard SA 2½-3.

For galvanised steel the surface should be grit blasted with a fine non-ferrous medium at a low pressure. For maximum long term adhesion, a suitable phosphate or chromate system should be used.

For all types of metal surface, ensure any previously 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.

Batch Operation:
Metal preheat temperature 240°C - 300°C, depending on metal thickness (This assumes this is greater than 5mm). Dip for 5-10 seconds or as required to achieve the desired coating thickness. A post-heat cycle at 200°C may be required to produce the desired surface finish.

The process temperatures used should be the minimum required to achieve an acceptable surface finish. However, to ensure optimum adhesion the metal temperature must exceed 150°C. Overheating may cause the coating to discolour later in storage or in service.

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

For typical properties of the coating see overleaf.

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 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 9001:2008.

STORAGE
Stored in a clean dry area at 10-30°C 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 POWDER

Coverage (100% efficiency)	2.1 m^2/Kg at 500 microns
Particle Size	≥95% less than 212 microns
Bulk Density (at rest)*	≥0.36 g/cm^3
Fluidising Characteristics	Good
Packaging	20 kg cardboard boxes

TYPICAL PROPERTIES OF THE MATERIAL

Specific Gravity*		0.96 – 1.1 g/cm^3
Tensile Strength	ISO 527 at 500mm/min	16 MPa
Elongation at Break	ISO 527 at 500mm/min	≥ 350%
Brittleness Temperature	ASTM D-746	-76°C
Hardness	Shore A	98
	Shore D	≥48
Crystallisation Onset	Derived by DSC	88°C
Melting Point	Derived by DSC	100°C
Melt Flow Index		9-13g/10min
Stress Cracking	ASTM D1693	>1000 hours
Toxicity Index	NES 713	1.8
Flammability	UL94 3.2mm moulding	Unrated
Volume Resistivity	ASTM D257	2.82×10^{14} Ω.m
Dielectric Strength	ASTM D-149	40.8 kV/mm

**These values may vary from colour to colour*

HEALTH AND SAFETY
Plascoat PPA571 AQUA is supplied as a fine powder. Whilst there are no known health hazards associated with PPA571 AQUA, normal handling precautions for dealing with fine 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 more 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 relevant Plascoat Health and Safety Data Sheet, available on request.

DISCLAIMER
The information given here is, to the best of our knowledge, true and accurate.
Product and item design, pre-treatment, coating conditions, quality assurance and conditions of product end use are among the factors that affect performance of the coated products and are outside Plascoat's control.
Conditions under which our materials may be used are beyond our control. The suitability for application and performance of finished goods coated with Plascoat material is the sole responsibility of the customer and end user.
Plascoat expressly denies specific or implied warrantees including warrantees for fitness for a particular use or purpose.

TECHNICAL DATA

TYPICAL PROPERTIES OF THE COATING

The following data applies to a 500µm coating (except where specified) applied under recommended conditions onto ≥3mm thick steel. The pre-treatment consisted of degreasing and grit-blasting.

PPA571 AQUA

Recommended Coating Thickness		**500-1000 microns (µm)**
Appearance		**Smooth semi-matte finish**
Gloss	**ISO 2813**	**58**
Abrasion	Taber ASTM D4060-10 *CS17, 1000g load, 1000 cycles*	≤20 mg weight loss
Adhesion	PSL, TM 19 DIN 30678 *Coating Peel Test*	A-1 ≥16MPa
Cathodic disbondment	AS/NZS 4352:2005 *23±2°C for 28 days 6mm Ø start* BS EN 14901:2006 *23±2°C for 30 days 6mm Ø start*	≤10mm (500-550µm)
Chemical Resistance**	- Dilute Acids 60°C - Dilute Alkali 60°C - Salts (except peroxides) 60°C - Solvents 23°C	Good Good Good Poor
Flexibility	AS/NZS 3862 AS/NZS 4158:2003	1% strain at 0°C - No cracks or disbonding
Impact Strength	ASTM G14-04 AS/NZS 4158:2003 *1.31kg drop weight 15.9mm Ø Tup*	≥2.5 joules @ 500µm
	EN 14901:2006 *0.5kg drop weight 25mm Ø Tup* *1.5Kv spark test*	≥5 joules @ 450µm
	Reverse impact resistance *Gardner drop weight, 15.9mm Ø Tup,* *1mm steel substrate, 4Kv spark test*	≥27 joules @ 300µm
Penetration	AS/NZS 4158: 2003 ASTM G17-07 *10MPa for 24 hours*	≤5% Penetration
Salt Spray	ISO 9227:2012 ASTM B117-11 Steel - Scribed Aluminium - Unscribed - Scribed - Inscribed	Results after 1000 hours Loss of adhesion 5-14 mm from scribe* Under film corrosion 1.0 mm No loss of adhesion No loss of adhesion No loss of adhesion
Thermal Stability	AS/NZS 4158: 2003 *100 days at 100°C* ASTM D3895-94 *Oxidative-Induction Time by DSC*	≤2% change in properties ≥20.0 mins at 200°C
Ultraviolet Radiation	AS/NZS 4158:2003 ISO 527-3:1996 ASTM D2565-99(2008)	≤30% change in properties
Weathering	QUV ASTM G53-77 Florida 45° facing South	2000 hours - No significant change in colour or loss of gloss. 3 years - No significant change in colour or loss of gloss***
Water Absorption	AS/NZS 4158:2003 AS 3862 Appendix O *100 days at 25°C*	≤1% Absorption
Hot Water Resistance	AS/NZS 4158:2003 *50°C 14 days immersion* *Method B-AS 1580.408.2* PSL, TM 19	Rating 0 – No loss of adhesion A-1 – No loss of adhesion

* Dependant on surface pre-treatment quality.
** The results given are for full immersion in the chemicals for a prolonged period of time. The coating is resistant to splashes and short term contact of most chemicals. Further technical advice may be obtained from Plascoat concerning the effects of particular chemicals or mixtures.
*** Results based on chemically comparable coating material.

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.
Plascoat is a subsidiary member of the IPT Group of companies.
Plascoat is an EU registered trade name.

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