

PHC-A

Thermoplastic Thermal Spray Powder

GENERAL DESCRIPTION

PHC-A has been specifically designed to provide a tough long lasting, flame sprayed coating on outdoor structures made of mild steel, galvanised steel and aluminum, wood, concrete etc. 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.

PHC-A 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 a good degree of electrical insulation, abrasion and impact resistance.

TYPICAL USES

Corrosion protection. Application on-site on large structures either fixed or hard to disassemble which are submitted to adverse weather conditions, salt spray and typical airborne pollutants, chemical corrosion.

GUIDE TO TYPICAL COATING CONDITIONS

Recommended Pretreatment:

Shotblasting to Swedish standard SA 2½-3.

For galvanised steel the surface should be grit blasted with a fine non-ferrous medium like GMA-GARNET at a low pressure.

Operating procedure:

Preheat the substrate to 110-150°C, depending on the substrate material and thickness.

Flame spray of the polymer using the IBIX Srl – Tecno Supply Thermoplastic Flame Spray System GLADIATOR Omnicooter.

The coating can be left to cool in air.

For typical properties of the coating see overleaf.

TYPICAL PROPERTIES OF THE POWDER

Coverage (100% efficiency)	3m ² /Kg at 350 microns
Particle Size	95% less than 250 microns
Bulk Density (at rest)*	0.37 g/cm ³
Fluidising Characteristics	Excellent
Packaging	20 kg cardboard boxes

TYPICAL PROPERTIES OF THE MATERIAL

Specific Gravity*	0.95-0.97 g/cm ³	
Tensile Strength	ISO 527	12 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
Toxicity Index	NES 7	1.8
Flammability	UL94 3.2 mm moulding	Unrated (see also Properties of Coating)
Dielectric Strength	IEC 243 VDE 0303	47.8 KV/mm at 370 microns
Volume Resistivity	IEC 93	3 x 10 ¹⁷ Ohm.cm
Surface Resistivity	IEC 93	8 x 10 ¹⁷ Ohm at 350 microns

**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

PHC-A is supplied as a finely divided powder. Whilst there are no known health hazards associated **PHC-A**, 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.

Should the coating be required for contact with food or potable water, further details should be obtained from Tecno Supply S.r.l.

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TYPICAL PROPERTIES OF THE COATING

The following data applies to a 350 micron coating applied under standard conditions onto 3mm thick steel or aluminium. The pretreatment consisted of grit blasting unless otherwise stated.

Recommended Coating Thickness		300-900 microns
Appearance		Smooth/Glossy
Gloss	ISO 2813	70
Impact Strength	Gardner (drop weight) ISO 6272 Direct 23°C Indirect 0°C	2.7 Joules 18.0 Joules
Abrasion	Taber ASTM D4060/84 H18, 500g load, 1000 cycles	60 mg weight loss
Salt Spray	ISO 7253 Steel - Scribed - Unscribed Aluminium - Scribed - Unscribed	Results after 1000 hours Loss of adhesion less than 10mm from scribe. Under film corrosion 2-3mm No loss of adhesion No loss of adhesion No loss of adhesion
Chemical Resistance*	- Dilute Acids 60°C - Dilute Alkali 60°C - Salts (except peroxides) 60°C - Solvents 23°C	Good Good Good Poor
Adhesion	PSL, TM 19	A-1
Weathering	QUV ASTM G53-77 Florida 45° facing South	2000 hrs - No significant change in colour or loss of gloss. 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
Flammability	BS476: Pt6: 1989 500 micron coating UL94	I = 0.2 V ₀ (see also Properties of Material)
Safe Working Temperature	(Continuous in air)	60°C max

*Further technical advice may be obtained from TECNO SUPPLY S.r.l. concerning the effects of particular chemicals or mixtures.

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.



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