

# POLYFUSION

## Fusion Bonded Polymer

### GENERAL DESCRIPTION

**Polyfusion** has been specifically designed to provide a tough long lasting, fusion bonded coating on concrete and other porous surfaces. 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.

**Polyfusion** is resistant to stress cracking, adverse weather conditions, detergents, chemicals, salt, and typical airborne pollutants. The material also provides excellent abrasion and impact resistance.

### TYPICAL USES

For protection of concrete surfaces (bunds, floors, industrial) where chemical protection, durability and speed of application are paramount.

### GUIDE TO TYPICAL COATING CONDITIONS

#### *Recommended Pretreatment:*

Surfaces should be prepared and primed in accordance with the recommendations on the Polyres 505 technical data sheet.

#### *Operating procedure:*

Only apply the **Polyfusion** when the surface of the Polyres 503 is sticky but not wet. (With light contact the surface should feel tacky but should not wet the contact point).

Flame spray of the polymer using the **IBIX Srl - Tecno Supply** Thermoplastic Flame Spray System **HERCULES**.

Once the coating system has cooled it is ready for service.

*For typical properties of the coating see overleaf.*

### TYPICAL PROPERTIES OF THE POWDER

Coverage (100% efficiency)	2m <sup>2</sup> /Kg at 500 microns
Particle Size	95% less than 250 microns
Bulk Density (at rest)*	0.37 g/cm <sup>3</sup>
Packaging	20 kg cardboard boxes

### TYPICAL PROPERTIES OF THE MATERIAL

Specific Gravity*	0.95-0.97 g/cm <sup>3</sup>
Tensile Strength	ISO 527 >12 MPa
Elongation at Break	ISO 527 <800%
Brittleness	ASTM D-746 -78°C
Temperature	
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 3.2mm molding Unrated (see also Properties of Coating)
Dielectric Strength	IEC 243 VDE 47.8 KV/mm at 370 microns
Volume Resistivity	IEC 93 3 x 10 <sup>17</sup> Ohm.cm
Surface Resistivity	IEC 93 8 x 10 <sup>17</sup> Ohm at 350 microns

*\*These values may vary from color to color*

### 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

**Polyfusion** is supplied as a finely divided powder. Whilst there are no known health hazards associated **Polyfusion**, 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 500 micron coating applied under standard conditions. Onto 3mm thick steel or aluminum (for test purposes).

The pretreatment consisted of gritblasting 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 Aluminum - 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 color or loss of gloss. 3 years - No significant change in color 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 <sub>0</sub> (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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