Unique Polymer Systems

ADVANCED POLYMER SURFACE ENGINEERING TECHNOLOGY

Unique Polymer Systems – Flexibilised Fluid Ceramic Carbide Compound




Unique Polymer Systems 'Flexibilised Fluid Ceramic Carbide Compound' offers a resilient high performance system with outstanding protection against impingement, entrainment, cavitation and erosion corrosion and is ideal for resurfacing, propellers, kort nozzles, guide vanes and tube sheets etc.

Unique Polymer Systems 'Flexibilised Fluid Ceramic Carbide Compound' is a high performance solvent free flexible polyceramic repair coating designed for the resurfacing of equipment operating in fluid flow environments.

Unique Polymer Systems 'Flexibilised Fluid Ceramic Carbide Compound' is based on a complex blend of high molecular weight and urethane polymers blended with inert pigments and silicas reacted with an amine accelerated isocyanate resin which produces a system with the optimum physical and mechanical strength.

Before proceeding, please read the following information carefully to ensure that the correct application procedure is fully understood.

SURFACE PREPARATION

All dirt, and contamination should be removed, then surfaces should be degreased using **Unique Polymer Systems 'Cleaner'.** Surfaces should now be abrasive blasted to Sa21/2 BS7079: PART A1 1989, or equivalent with a medium to coarse profile.

Equipment that has been salt impregnated should be heated to sweat out salt contamination then the surface reblasted. This process should be repeated until all salt contamination is eliminated.

All residual abrasive dust should be blown clear of the prepared surface. Surfaces which are not required to bond to the **Unique Polymer Systems 'Flexibilised Ceramic Carbide Compound'** should be treated with **Unique Polymer Systems 'Release Agent'.**

MIXING

Unique Polymer Systems 'Flexibilised Fluid Ceramic Carbide Compound' is a two component solvent-free material comprising resin and hardener components which must be mixed together prior to use.

Add all the contents of the hardener container into the resin container and mix thoroughly, alternatively measure three volumes of resin and one volume of hardener into a clean container and mix thoroughly. The two components initially are fluid, but on mixing form a paste material. To ensure thorough mixing, the paste should be transferred to a mixing board and further mixing carried out to produce a streak free material.

The mixed material should be used within 20 minutes of mixing at 20°C (68°F). This time will be reduced at higher temperatures and extended at lower temperatures.

APPLICATION

Application should be carried out as soon as possible after the surface preparation is complete, and certainly within 4 hours otherwise flash blasting will be necessary before application.

The mixed material should be applied by brush to provide an even smooth coating to the prepared / filled surface.

Where **Unique Polymer Systems 'Flexibilised Fluid Ceramic Carbide Compound'** is being applied over **Unique Polymer Systems 'Flexibilised Ceramic Carbide Compound'** a maximum of 4 hours should be allowed between applications, however, when two coats of **Unique Polymer Systems 'Flexibilised Fluid Ceramic Carbide Com-pound'** are being applied the maximum overcoating time is 24 hours.

All equipment must be cleaned IMMEDIATELY after use with **Unique Polymer Systems 'Cleaner'.**

Theoretical Coverage Rate
0.8 m² / kilo at 1 mm (18ft² / kilo at 20 mil)

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PHYSICAL CONSTANTS

Mixing Ratio	Resin	Hardener	
	3	1	By volume
	3	1	By weight
Appearance	Resin	**Light Grey Thixotropic Liquid**	
	Hardener	**Brown Liquid**	

Drying & Cure times **at 20°C (68°F)**

Usable Life	**20 minutes**
Touch Dry	**2 hours**
Hard Dry	**4 hours**
Full Cure	**7 days**

Volume Solids **100%**
V.O.C. Nil

Shelf Life **Use within 5 years of purchase. Store in original sealed containers at temperatures between 5°C (40°F) and 30°C (86°F).**

Operating Temperature

	Maximum	**Continuous**
Dry Heat	150°C (300°F)	80°C (175°F)
Wet Heat	80°C (175°F)	50° (122°F)

PHYSICAL PROPERTIES

Tensile Strength ASTM D412	200 kg/cm² (2825 psi)
Abrasion Resistance ASTM D4060	0.08 ml loss per 1000 cycles 1 kg load CS 17 Wheel
Corrosion Resistance ASTM B117	Unaffected after 5000 hours exposure
Impact Resistance ASTM D256	20 Joules (175 ins lbs)
Flexibility	30% ASTM D522-4

HEALTH AND SAFETY

As long as normal good practice is observed **Unique Polymer Systems 'Super Low Friction Efficiency Coating'** can be safely used.

Protective gloves should be worn during use.

A fully detailed **Material Safety Data Sheet** is either included with the material or is available on request.

PACKAGING

Supplied in 1kg packs.

FOR FURTHER INFORMATION PLEASE CONTACT

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