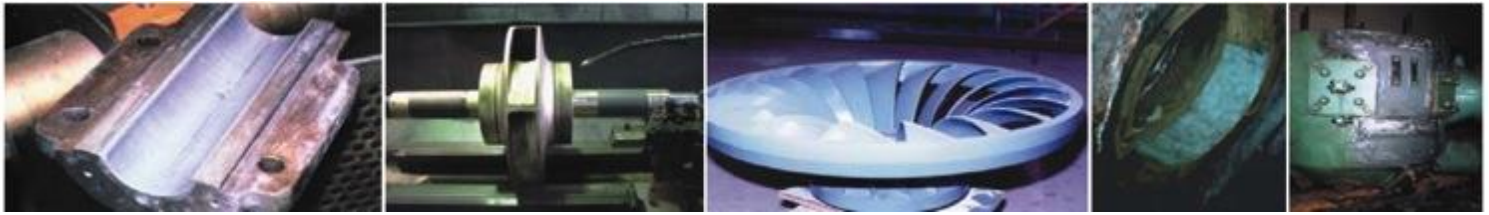


Technical Data Sheet

UPS 236 TUC Toughened Polyurethane Ceramic



Technical Data & Performance

UPS 236 TUC Toughened Polyurethane Ceramic is a high build solvent free urethane extreme impact and abrasion resistant coating designed for the protection of pumps, valves, pipes, chutes, hoppers, vessels, tanks and associated equipment.

Product Applications

Pipelines, Agitators, Effluent Systems, Pumps & Valves, Vessels, Tanks, Equipment suffering from Cavitation issues.

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

Surface Preparation

Metallic Substrates

All oil and grease must be removed from the surface of the repair using UPS CLEANER MEK.

For optimum performance, the surface should be abrasive blasted to ISO 8501/4 Standard Sa2.5 (SSPC SP10 / NACE 2) and a minimum blast profile of 7 microns using an angular abrasive. Once blast cleaned, the surface must be degreased and cleaned using UPS CLEANER MEK. All surfaces must be coated before gingering or oxidation occurs.

PLEASE NOTE – For salt contaminated surfaces the area must be abrasive blast cleaned as mentioned above and left for 24 hours to allow any ingrained salts to come to the surface. After this 24 hours period the surface must be washed with UPS CLEANER MEK prior to brush blasting to remove the surface salts. This process must be repeated until all ingrained contaminants have been sweated out of the surface.

Where abrasive blast cleaning is not possible (excluding salt contaminated surfaces) the surface should be roughen by UPS MiniBlaster, needle gun or grinding. Under these conditions adhesion levels will not be optimal although still satisfactory for most applications.

Concrete Substrates

Remove any contamination and lightly abrasive blast or scarify taking care not to expose the aggregate before application of UPS 236 PU. Allow new concrete to cure for a minimum of 21 days and likewise treat to remove any surface laitance before coating. For optimum results on damp concrete, condition with UPS 905 DS Thin Film Epoxy Primer. Where the concrete is dry but highly porous, it is recommended to condition with UPS 909 SPEP Epoxy Primer.

Mixing & Application

Warm the Base component to 15 – 25°C (60 – 77°F) before mixing and do not apply when the ambient or substrate temperature is below 5°C (40°F) or less than 3°C (37°F) above the dew point.

Manual Application (Brush or Roller)

Transfer the contents of the Activator container into the Base unit mixing thoroughly to ensure that the material is homogenous and free of any streaks. From the commencement of mixing all of the material should be used within 15-20 minutes at 20°C (68°F). Where more time is required, the material should be cooled before mixing and during or smaller volume mixes used. Typically the material is applied at a target wet film thickness of 750-1000 microns (Minimum 3 coat system to give nominal 2250 microns DFT)

Characteristics

Coverage Rates

1LT (0.25 US Gallon) of fully mixed product will give the following coverage rates -	
2m at 500 microns	21.5ft at 20 mil
<i>Please note that the coverage rates quoted are theoretical and do not take into consideration the profile or condition of the surface being repaired.</i>	

4LT (1 US Gallon) of fully mixed product will give the following coverage rates -	
13.32m at 300 microns	143ft at 12 mil
<i>Please note that the coverage rates quoted are theoretical and do not take into consideration the profile or condition of the surface being repaired.</i>	

Drying & Cure Times at 20°C (68°F)

Useable Life	15 – 20 minutes
Movement Without Load or Immersion	2 hours
Light Loading	4 hours
Full Loading / Water Immersion	3 days
Chemical Contact	14 days
<i>Once hardener, the material should be left for the following periods of time at 20°C (68°F) before being subjected to the conditions indicated. These times will be doubled at 10°C (50°F) and halved at 30°C (86°F)</i>	

Appearance

Mixed Material Colour	Various Coloured Thixotropic Liquid
Base Component Colour	Various Coloured Thixotropic Liquid
Activator Component	Amber Liquid

Over Coating Times

Minimum	The applied material can be over coated as soon as it is touch dry
Maximum	The over coating time should not exceed 24 hours
<i>Where the maximum over coating time is exceeded, the material should be allowed to harden before being abraded or flash blasted to remove surface contamination.</i>	

Shelf Life

2 years if unopened and store in normal dry conditions (15-30°C / 60-86°F)

Mixing Ratio

Component	Base	Activator
By Weight	3.25	1
By Volume	3	1



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Density

Base	1.31
Activator	1.22
Mixed	1.29

Solids Content

100%

Slump Resistance

Nil at 750 microns – Brush Grade
Mean Test Data 1370 – 1960 microns

Pack Sizes

This product is available in the following pack sizes;
1LT (0.26 US Gallon)

Useable Life

10°C (50°F)	25 – 30 minutes
20°C (68°F)	15 – 20 minutes
30°C (86°F)	8 – 10 minutes

Chemical Resistance – The product resists attack by a wide variety of inorganic acids, alkalis, salts and organic media.

Immersion Conditions at 20°C	
Acetic Acid	10%
Benzoic Acid	15%
Ethyl Alcohol	50%
Formic Acid	10%
Hydrochloric Acid	20%
Lactic Acid	20%
Nitric Acid	10%
Potassium Hydroxide	10%
Sodium Carbonate	10%
Sodium Hydroxide	10%
Sulphuric Acid	50%
White Spirit	50%

Mechanical Properties

Tensile Shear Adhesion ASTM D1002 (Abrasive Blasted Mild Steel with 75 micron profile)	169kg/cm (2,400 psi)
Cathodic Disbondment British Gas CW6 and FW0028 Draft)	Pass
Corrosion Resistance ASTM B117	Minimum 5000 hours
Flexibility (British Gas FW0028 Draft Method) ASTM D522	3% Strain at 20°C (68°F) – Pass 3% Strain at 5°C (41°F) – Pass 3% Strain at 0°C (32°F) - Pass
Hardness Shore D ASTM D2240	80
Water Resistance (British Gas CW6 and FW0028 Draft Methods)	Pass at 50°C (122°F)
Impact Resistance	(British Gas CW6) 15 Joules (BS EN 10290) 23°C (73°F) 8.6 Joules 5°C (41°F) 6.1 Joules
Adhesion – Resistance to Removal (BS EN 10290)	23°C (73°F) Rating 1 60°C (140°F) Rating 2
Adhesion – Pull Off Test BS EN 10290	23°C (73°F) 175 kg/cm 60°C (140°F) 73 kg/cm
Adhesion – Pull Off Test ASTM D4541	214kg/cm
Adhesion – Immersion inn Tap Water BS EN 10290	Rating 3
Electrical Insulation Resistance BS EN 10290	8.4 x 10
Indentation Resistance BS EN 10290	23°C (73°F) 0.1mm 60°C (140°F) Approx. 15%
Flexibility BS EN 10290	Pass
Enlongation BS EN 10290	14.5%
Abrasion Resistance ASTM D4060	90mgm weight loss per 1000 cycles – 1KG load – CS17 wheel

Heat Resistance

Suitable for use in immersed conditions at temperature up to 70°C (158°F).

Resistant to dry heat down to -20°C (-4°F) and up to 120°C (248°F)
dependent on load.

Quality: All Unique Polymer Systems LTD Products are supplied under the scopes of the company's fully documented quality system.

Warranty: Unique Polymer Systems LTD warrants that the performance of the product supplied will confirm to the typical descriptions quoted within this Technical Data Sheet provided the material is stored correctly and used according to the procedures detailed in the Technical Data Sheet for the material.

Health & Safety: Please ensure good practice is observed at all times during the mixing and application of this product. Protective gloves must be worn during the mixing and application of this product. Before mixing and applying the material please ensure you have read the fully detailed Material Safety Data Sheet.

Legal Notice: The data contained within this Technical Data Sheet is furnished for information only and is believed to be reliable at the time of issue. We cannot assume responsibility for results obtained by others over whose methods we have no control. It is the responsibility of the customer to determine the products suitability for use. Unique Polymer Systems LTD accepts no liability arising out of the use of this information or the product described herein.



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