

Technical Data Sheet

UPS 115 XL Extended Life Metal



UPS 115 XL Extended Life Metal Repair Paste is a high performance multi-purpose synthetic metal repair compound which has been specially developed for repairs requiring good mechanical strength combined with easy machining properties and where additional working time is essential during the application period, making the product ideal for use in warm environments.

Product Features

- Good application characteristics with good build characteristics.
- Designed for application by trowel or spatula to thicknesses up to 12mm (472mil).
- Outstanding cold weld capabilities.
- Excellent adhesion to correctly prepared metal surfaces.

Product Applications

Suitable for emergency repairs to part of planned maintenance to equipment such as worn or damaged pump shafts, cracked pump valve casings, scored hydraulic rams, worn bearing housings, damaged flanges, leaking tank seams, worn keyways and cracked engine blocks. The long working life of the material also makes it ideal for complex shimming operations.

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

Surface Preparation

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 75 microns using angular abrasive. Once blast cleaned, the surface must be degreased and cleaned using UPS CLEANER MEK or similar type material. All surfaces must be repaired 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 hour 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 roughened by UPS MiniBlaster, Needle Gun or Grinding.

In areas where the product should not adhere, a thin layer of UPS RELEASE AGENT should be applied taking care not to contaminate other areas.

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.

Mixing of the product can be on full units or by part-mixing. If mixing the whole unit please ensure as much of the base and activator is dispensed from the plastic container onto a clean plastic mixing surface and mix using a spatula until a uniform material free of any streakiness is achieved while ensuring no unmixed material is left on the spatula or the mixing surface. From the commencement of mixing the whole of the material should be used within 60 minutes at 20°C (68°F).

For part mixing, using a spatula place 3 equal measures from the Base unit onto a clean plastic mixing surface. Clean the spatula thoroughly and then take 1 equal measure from the Activator unit and place alongside the Base measures. Mix as above.

Using a spatula or applicator tool, apply the material to the prepared surface, ensuring the product is pressed into any holes, scars or cracks and profile the repair to a smooth finish.

Where a machined finish is required, the repair area should be overfill by up to 1.5mm (60 mil) and once hardened machined using a surface cutting speed of 200ft / minute and a feed rate of 50 thou / rev and 10 thou / rev for finishing.



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Technical Data & Performance Characteristics

Coverage Rates

1KG (2.2LB) of fully mixed product will give the following coverage rates -	
0.388m at 1mm	4.3ft at 40mil
0.194m at 2mm	2.2ft at 80mil
0.129m at 3mm	1.45ft at 1/8"
<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	60 minutes
Movement Without Load or Immersion	5 hours
Machining & Light Loading	12 hours
Full Loading	4 days
Immersion	7 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>	

For Optimum Performance

After an initial curing period of at least 4 hours at 20°C (68°F), raising the cure temperature progressively to 60 – 100°C (140 – 212°F) for up to 8 hours will result in improved mechanical, thermal and chemical resistance properties.

Appearance

Mixed Material Colour	Mid Grey Paste
Base Component Colour	Dark Grey Paste
Activator Component	Light Grey Paste

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 6 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

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

Mixing Ratio

Component	Base	Activator
By Weight	1.67	1
By Volume	3	2

Density

Base	2.70
Activator	2.4
Mixed	2.58

Volume Capacity

388cc/Kg

Solids Content

100%

Slump Resistance

Nil at 2.0cm

Pack Sizes

This product is available in the following pack sizes; 4KG (8.8LB)

Useable Life

20°C (68°F)	60 minutes
30°C (86°F)	30 minutes

Mechanical Properties

Tensile Shear Adhesion ASTM D1002 (Abrasively Blasted Mild Steel with 75 micron profile)	180kg/cm (2,550 psi)
Compressive Strength ASTM D695	839kg/cm (11,900 psi)
Flexural Strength ASTM D790	585kg/cm (8,300 psi)
Hardness Shore D ASTM D2240	87
Heat Distortion ASTM D648 At 264psi Fibre Stress	20°C (68°F) Cure – 58°C (136°F) 100°C (212°F) Cure – 98°C (208°F)

Heat Resistance

Suitable for long-term water immersion at temperatures up to 60°C (140°F).

Resistant to dry heat in excess of 180°C (356°F) dependent on load.

Chemical Resistance

The product resists attack by a wide variety of inorganic acids, alkalis, salts and organic media. Refer to the Unique Polymer Systems LTD Technical Centre for advice.

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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