

Technical Data Sheet

UPS 110 FG Fluid Grade Metal



UPS 110 FG Fluid Metal Repair is a high performance synthetic metal compound specially developed for resurfacing and reforming damaged metal machinery and equipment.

Product Features

- Designed for application by stiff brush or squeegee.
- Provides outstanding slip resistance in combination with *UPS Aggregates* on drive rollers.
- Primarily designed for resurfacing and recasting metal components.
- Exhibits excellent adhesion to correctly prepared metal surfaces.

Product Applications

UPS 110 FG can be applied to any damaged component and provides an excellent slip resistant surface in combination with *UPS Aggregates*, and is ideal for drive rollers and brake test rollers where drip is essential.

Suitable for resurfacing damaged and worn pump casings, valve bodies, worn bearing housings, damaged flanges, etc.,

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.

The whole unit must be mixed in full. Ensure as much of the Activator is dispensed into the Base unit. Mix the two components using the spatula provided until a uniform material free of any streaks is achieved while ensuring no unmixed material is left on the spatula or on the sides of the Base pot.

Application

The mixed material should be applied by stiff brush or squeegee to the prepared area as soon as possible after surface preparation, and certainly on the same day to prevent flash rusting. If flash rusting does occur, the surface should be re-prepared.

On applications using formers treated with *UPS TAC 872 Release Agent*, these formers can be removed as soon as the *UPS 110 FG* has initially set.

Fairing Compound – For filling badly pitted or scarred surfaces apply the material using a rubber float across the repair surface ensuring the product is pressed into any holes or cracks. The maximum Wet Film Thickness this material can be applied onto a vertical surface without sagging is 3mm (120mil / 1/8").

Anti-Slip System – For conveyor rollers, steps or ramps, apply the material to the surface at a Wet Film Thickness of 500 microns (20mil) and then broadcast *UPS Aggregates* onto the surface (Aluminum Oxide or equivalent). Once cured brush off any excess aggregate.

Resurfacing – If applying as a resurfacing material to repair worn or damaged surfaces the application should be carried out in two coats. The material must be applied at target Wet Film Thickness of 250 microns (10mil) per coat. From the commencement of mixing the whole of the material should be used within 20 – 30 minutes at 20°C (68°F).

As soon as possible after the application of the first layer, and after no longer than 6 hours, apply a further coat as above. If the maximum over coating time is exceeded, the first layer should be brush blasted or abraded before applying the second coat.



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Technical Data & Performance Characteristics

Coverage Rates

1KG (2.2LB) of fully mixed material will give the following coverage rates -		
Fairing Compound	0.147m at 3mm	1.6ft at 1/8"
Anti-Slip System	0.88m at 500 microns	9.5ft at 20mil
Resurfacing	1.76m at 250 microns	19ft at 10mil
<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	30 minutes
Movement Without Load or Immersion	1.5 hours
Machining & Light Loading	2 hours
Full Loading	2 days
Immersion	3 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 Fluid
Base Component Colour	Dark Grey Paste
Activator Component	Amber Fluid

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	8	1
By Volume	3	1

Density

Base	2.70
Activator	1.00
Mixed	2.50

Volume Capacity

440cc/Kg

Solids Content

100%

Slump Resistance

Nil 3mm

Pack Sizes

This product is available in the following pack sizes; 1KG (2.2LB), 3KG (6.6LB)

Useable Life

10°C (50°F)	50 – 60 minutes
20°C (68°F)	25 – 30 minutes
30°C (86°F)	15 – 20 minutes

Mechanical Properties

Tensile Shear Adhesion ASTM D1002 (Abrasive Blasted Mild Steel with 75 micron profile)	185kg/cm (2,630 psi)
Compressive Strength ASTM D695	1,075kg/cm (15,300 psi)
Corrosion Resistance ASTM B117	Minimum 5000 hours
Flexural Strength ASTM D790	703kg/cm (10,000 psi)
Hardness Rockwell R ASTM D785	100
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 70°C (158°F) and intermittent contact with pressured steam up to 120°C (248°F).

Resistant to dry heat in excess of 200°C (392°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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