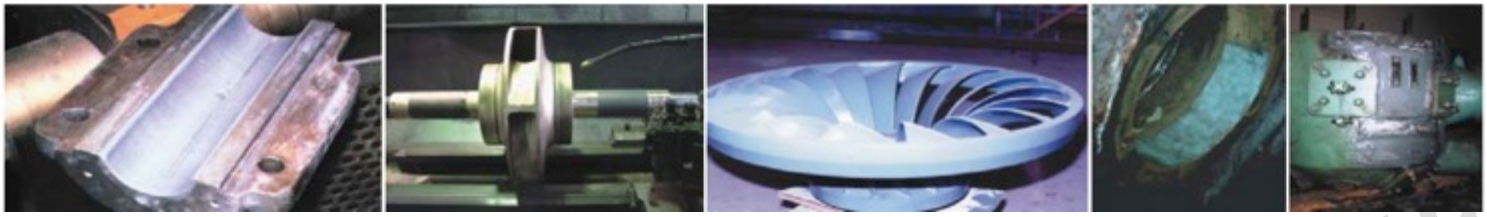

UniquePolymerSystems.com
The Engineer's Choice
... for Solutions

UPS 105 EG Metal Repair Paste is a high performance multi-purpose synthetic metal repair compound specially developed for metal repairs requiring excellent mechanical strength combined with easy machining properties.

Product Features

- Designed for application by trowel or spatula at thicknesses up to 12mm (470mil).
- Provides outstanding cold weld capabilities.
- Excellent adhesion to correctly prepared metal surfaces.

Product Applications

UPS 105 EG can be applied to any damaged component in one easy application and is ideal for repairing worn or damaged pump shafts, cracked pump or valve casings. Scored hydraulic rams, worn bearing housings, damaged flanges, leaking tank seams, worn keyways, cracked engine blocks, etc.,

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

Surface Preparation

Heavy contamination due to oil or grease must first be removed using *UPS TAC 883 Universal Cleaner*. All loose material, rust and surface contaminants, including existing coatings, must be removed and the surface roughened by using an angle grinder, needle gun or abrasive blasting.

Where grinding or needle gunning is used, the surface should be crossed-scored to improve adhesion. Care must be taken, when angle grinding, to avoid polishing rather than roughening metal surface.

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 an angular abrasive.

Surfaces should finally be carefully degreased with *UPS TAC 883*. Cloths should be frequently changed to avoid spreading contamination. On deeply pitted surfaces or porous castings, the cleaner should be worked into the surface by brush and washed off using excess cleaner.

Parts (for example, threads or bearing surfaces), which must remain in position during application but must not adhere to *UPS 105 EG* must be coated with *UPS TAC 872 Release Agent* prior to application of the *UPS 105 EG*.

When treating existing equipment, which may have become salt impregnated due to service conditions, surfaces should first be wet blasted then dry blasted and tested for presence of salts. This process should be repeated until all salts are removed.

Mixing

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.

UPS 105 EG is a two component solvent free material comprising Base and Activator, which must be mixed together prior to use.

Measure 3 volumes of Base and 1 volume Activator onto a clean mixing board or other suitable surface. The two components should then be thoroughly mixed until completely streak free.

The mixed material should be used within 25 - 30 minutes of mixing at 20°C (68°F). This time will be reduced at higher temperatures and extended at lower temperatures.

Application

The mixed material should be pressed firmly onto the prepared area, working the material into any cracks and surface defects.

When *UPS 105 EG* is being used to bond two surfaces together, both surfaces should be coated with the material. The two pieces should then be pressed firmly together and clamped in position until the product has set, any excess material squeezed out should be scraped away before the *UPS 105 EG* begins to cure.

When a reinforcing tape (*UPS TBRT 4*) is being used to strengthen the repairs the tape should either be impregnated with *UPS 105 EG*, or the tape should be laid over the *UPS 105 EG* surfaces and stippled into the material before it cures, then additional *UPS 105 EG* applied over the surface.

In areas where a second layer of *UPS 105 EG* is required, this application must be carried out within the initial set time for the first layer, if this is not possible surfaces will require thorough abrasion or abrasive blasting prior to any subsequent material being applied.

Once the *UPS 105 EG* has reached '*initial set'* the material can be separated from the surfaces treated with *UPS TAC 872*.

Once *UPS 105 EG* has cured for a minimum of 2 hours at 20°C (68°F), sanding, grinding and machining etc. can be carried out using standard engineering practice.

When machining *UPS 105 EG* a typical Lathe set up would be;

Surface Cutting Speed	200 ft/minute	
Feed Rate	(Roughing)	50 thou/rev
	(Finishing)	10 thou/rev

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.

Coverage Rates

1kg (2.2lb) of fully mixed product will give the following coverage rates -	
0.406m^2 at 1mm	4.3ft^2 at 40mil
0.203m^2 at 2mm	2.2ft^2 at 80mil
0.135m^2 at 3mm	1.45ft^2 at 1/8"
Please note that the coverage rates quoted are theoretical and do not take into consideration the profile or condition of the surface being repaired.	

Colour

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

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 3 hours
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.	

Mixing Ratio

Component	Base	Activator
By Weight	5	1
By Volume	3	1

Volume Solids	100%

Film Thickness	Up to 12mm (472mil)

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
At 20°C (68°F) the applied materials should be allowed to harden for the times indicated below before being subjected to the conditions indicated. These times will be extended at lower temperatures and reduced at higher temperatures.	

Shelf Life
5 years in unopened and store in normal dry conditions (15 – 30°C / 60 – 86°F).

Technical Data & Performance

Volume Capacity	406cc/Kg

Compressive Strength ASTM D695	1075kg/cm^2 (15,300 psi)

Tensile Shear Adhesion ASTM D1002 (Abrasive Blasted Mild Steel with 75 micron profile)	185kg/cm^2 (2,630 psi)

Flexural Strength ASTM D790	703kg/cm^2 (10,000 psi)

Hardness Rockwell R ASTM D785	100

Corrosion Resistance ASTM B117	Minimum 5000 hours

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)

Characteristics

Density

Base	2.70
Activator	1.70
Mixed	2.46

Slump Resistance

Nil at 2.0cm

Useable Life

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

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.

Packaging
UPS 105 EG is supplied in the following;
500gms (1lb)
1kg (2.2lb)
2kg (4.4lb)
3kg (6.6lb)
5kg (11lb)
30kg (66lb)

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.

Unique Polymer Systems LTD
Unit 1 Bankside Industrial Estate
Little Marcle Road
Ledbury
Herefordshire
HR8 2DR
United Kingdom