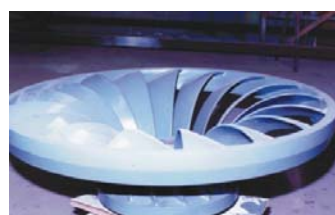




Unique Polymer Systems

ADVANCED POLYMER SURFACE ENGINEERING TECHNOLOGY

Unique Polymer Systems – Plastic Steel



UPS 'Plastic Steel' is a high performance multi purpose metal repair compound specifically developed for onsite repairs of damaged or faulty castings, corroded pumps, valves, pump or shafts

UPS 'Plastic Steel' is formulated on a complex range of epoxy resins combined with a polyamino curing system which is reinforced with inert pigments and fillers to produce a pourable paste which has excellent resistance to corrosive liquids and gasses.

UPS 'Plastic Steel' is ideally suited for use in tool rooms providing an economical solution to the problem of producing short run or prototype dies, jigs and fixtures.

UPS 'Plastic Steel' is simple and easy to use, can be drilled, tapped or filed etc. just like the parent metal.

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 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 cross-scored to improve adhesion. Care must be taken, when angle grinding, to avoid polishing rather than roughening metal surfaces.

Where possible, abrasive blasting is the preferred surface preparation, especially in fluid flow repairs.

Surfaces should finally be carefully degreased using UPS Cleaner.

Cloths should be frequently changed to avoid spreading contamination. On deeply pitted surfaces or porous castings, UPS Cleaner should be worked into the

surface by brush and washed off using excess cleaner.

MIXING

UPS 'Plastic Bronze' is a two component solvent free material comprising resin and hardener components which must be mixed together prior to use.

The mixed material should be used within 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 'Plastic Steel' 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 'Plastic Steel' begins to cure.

When a reinforcing Tape is being used to strengthen the repairs the tape should either be impregnated with UPS 'Plastic Steel', or the tape should be laid over the UPS 'Plastic Steel' surface and stippled into the material before it cures, then additional UPS 'Plastic Steel' applied over the surface.

Once UPS 'Plastic Steel' has cured for a minimum of 4 hours at 20°C (68°F), sanding, grinding and machining etc. can be carried out using standard engineering practice.

PHYSICAL CONSTANTS

Mixing Ratio	Resin	Hardener	
	3	1	By Volume
	5	1	By Weight

Appearance	Resin	Dark Grey
	Paste Hardener	
	Grey Paste	

Drying & Cure times at 20°C(68°F)

Usable Life	30 minutes
Gel Time	60 minutes
Machining	2 hours
Full Mechanical	3 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	250°C (480°F)	120°C (248°F)
Wet Heat	120°C (248°F)	70°C (158°F)

FOR FURTHER INFORMATION PLEASE CONTACT



PHYSICAL PROPERTIES

Compressive Strength 1090kg/cm² (15500 psi)
ASTM D 695

Corrosion Resistance 5000 hours
ASTM B117

Flexural Strength 700kg/cm² (10000 psi)
ASTM D 790

Hardness (Rockwell R) 100
ASTM D785

Heat Distortion 90°C (195°F)
ASTM D648 (Post Cured 24 hrs at 100°C/212°F)

Nuclear Decontamination Excellent
BS4247 Part 1

Tensile Shear Adhesion 175kg/cm² (2500 psi)
ASTM D1002 (Grit Blasted Steel)

HEALTH AND SAFETY

As long as normal good practice is observed **UPS 'Plastic Steel'** 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 0.500kg packs

The information provided in this Product Data Sheet is intended as a general guide only and should not be used for specification purposes. The information is given in good faith but we assume no responsibility for the use made of the product or this information because this is outside the control of the company. Users should determine the suitability of the product for their own particular purposes by their own tests.



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