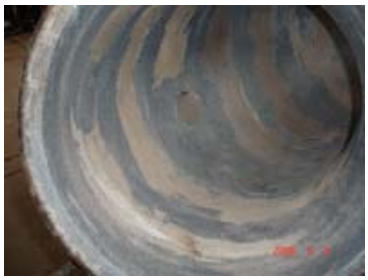
Unique Polymer Systems

ADVANCED POLYMER SURFACE ENGINEERING TECHNOLOGY

Unique Polymer Systems - Heavy Duty Ceramic Carbide Compound



Unique Polymer Systems 'Heavy Duty Ceramic Carbide Compound' is a high performance abrasion resistant metal repair compound specifically developed for use where resistance to sliding abrasion is required. It is based on a complex of epoxy resins and polyamino-amide curing system reinforced with carbide and ceramic particles to produce a coating with a high level of adhesion, abrasion and erosion resistance combined with optimum physical and mechanical strength.

In addition, it has excellent adhesion to most metallic surfaces in one easy application and offers outstanding protection to chutes, hoppers, pipe elbows, chippers, valves, pumps and equipment subject to aggressive attack from dry solids and slurries.

Please read the following information carefully to ensure that the correct application procedure is fully understood.

SURFACE PREPARATION & APPLICATION PROCEDURE

All dust and loose material should be scraped away. Oil and grease should be removed with **Unique Polymer Systems Cleaner**. Surfaces should then be abrasive blast cleaned to a minimum Sa2½ BS7079 Part A1 : 1989 or equivalent with a blast profile of 75 microns (3 mil) corresponding to 'Medium' in BS7079 Part C3/ISO 8503/1. All loose abrasive dust and debris must be blown clear or vacuum cleaned away.

Equipment that has been salt-impregnated due to service conditions should be first wet-blasted then dry-abrasive blasted and checked for presence of salts, this process should be repeated until salts are removed. Alternatively, surfaces should be warmed with a blowtorch or similar to bring salts up to the surface. The surface should once again be blast cleaned. This procedure must be repeated until no further sweating of impregnated salt is evident.

On sections of repair that are not required to bond to the **Unique Polymer Systems 'Heavy Duty Ceramic Carbide Compound'** these surfaces should be treated with **Unique Polymer Systems 'Release Agent'**.

MIXING

Transfer the entire contents of the resin and hardener containers onto a clean mixing board or other suitable surface. Alternatively measure three volumes of resin component and one volume of hardener onto a clean mixing surface. The two components should be thoroughly mixed until completely streak free.

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

APPLICATION

Application should not be carried out at temperatures below 5°C nor when relative humidity exceeds 85% or when the surface to be repaired is less than 3°C above the dew point. The mixed material should be pressed firmly onto the prepared area, care should be taken to avoid air entrapment on deeply pitted surfaces.

Application should be carried out as soon as possible after surface preparation is complete, and certainly the same day, otherwise flash blasting will be necessary before application. Where necessary, a reinforcement tape should be stippled into the mixed product and further material applied over the tape. For large areas the tape should be overlapped.

In areas where a second layer of **Unique Polymer Systems 'Heavy Duty Ceramic Carbide Compound'** 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.

TECHNICAL DATASHEET UPS240

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Machining of **Unique Polymer Systems 'Heavy Duty Ceramic Carbide Compound'** will cause excessive tool wear so care should be taken to finish the repair to the required size or dimensions.

Formers treated with **Unique Polymer Systems 'Release Agent'** can be used to minimise machining.

Once the **Unique Polymer Systems 'Heavy Duty Ceramic Carbide Compound'** has reached initial set the material can be separated from surfaces treated with **Unique Polymer Systems 'Release Agent'.**

All equipment must be cleaned IMMEDIATELY after use with **Unique Polymer Systems 'Cleaner'** or equivalent.

Volume Capacity
542cc (33 cu ins) per kilo
Coverage rate
0.09sqm (1ft2) per kilo

PHYSICAL CONSTANTS

Mixing Ratio	By volume	By Weight
Resin	3	4
Hardener	1	1

Appearance
Resin - Grey Paste
Hardener - Off-white Paste

Drying & Cure times at 20°C (68°F)

Usable Life	60 minutes
Initial Set	3 hours
Grinding Time	8 hours
Full Mechanical	5 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	200°C (392°F)	120°C (248°F)
Wet Heat	120°C (248°F)	70°C (158°F)

Food Contact Meets USDA requirements for incidental food contact.
Meets FDA requirements CFR 21.175.300 for food contact.

PHYSICAL PROPERTIES

Compressive Strength ADTM D695	1055 kg per cm² (15000psi)
Tensile Shear Adhesion ASTM D1002	140 kg per cm² (2000psi) (Abrasive Blasted Mild-Steel)
Flexural Strength ASTM D790	420 kg per cm² (6000psi)
Heat Distortion Temperature ASTM D648	60°C (140°F)
Hardness (Rockwell R) ASTM D785	100
Abrasion Resistance ASTM D4060	20 mg lossl per 1000 cycles (1 kg load/CS17 Wheel)
Corrosion Resistance ASTMB117	5000 hours

HEALTH AND SAFETY

As long as normal good practice is observed **Unique Polymer Systems 'Heavy Duty Ceramic Carbide Compound'** 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 5kg packs.

FOR FURTHER INFORMATION PLEASE CONTACT

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