

TECHNICAL DATA SHEET

UPS 241 HDX HEAVY DUTY CERAMIC X



UNIQUE POLYMER SYSTEMS

INNOVATE | REBUILD | ENHANCE

UPS 241 HDX Heavy Duty Ceramic X is specifically developed for resurfacing equipment subject to sever abrasion.

The material is exceptionally suitable to small particle erosion environments, dry, wet or fully immersed. Containing ceramic beads for extreme wear environments.

Product Information

Product Features

- Provides outstanding resistance to sliding abrasion.
- Designed for application by trowel or spatula at thicknesses up to 6mm (240 mil).
- Excellent adhesion to correctly prepared metal surfaces.

Product Applications

For use on equipment such as;

Chutes, hoppers, pipe bends, pump casings, Slurry pumps, Transport screws, Fan blades & housing, Internal pipe surfaces, etc., which are subject to high abrasive wear.



Useable Life
30 minutes



Cost effective



Immersed conditions at temperature
60°C (140°F)



Surface Preparation
Mechanical – Abrasive Blast

Surface Preparation

Metallic Substrates – Abrasive blast cleaning:

1. All oil and grease must be removed from the surface using an appropriate cleaner such as UPS 9918 MEK Cleaner.
2. All surfaces must be abrasive blasted to **ISO 8501/4 Standard SA2.5 (SSPC SP10 / NACE 2)** minimum blast profile of 75 microns (3mil) using an angular abrasive.
3. Once blast cleaned, the surface must be degreased and cleaned using UPS 9918 MEK or similar type material.
4. All surfaces must be coated before flash rusting 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 9918 MEK Cleaner* 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.

Mixing

Prior to mixing please ensure the following:

1. The base component is at a temperature between 15-25°C (60-77°F).
2. The ambient & surface temperature is above 10°C (50°F).
3. The ambient & surface temperatures are not less than 3°C (37.4°F) above the dew point.

Once check then proceed with mixing the product:

1. Mix all Base and Activator together on a clean plastic mixing surface
2. Using a spatula, mix the 2 components until a uniform material free of any streaks is achieved.
3. From the commencement of mixing the whole of the material should be used within 30 minutes at 20°C (68°F).

PLEASE NOTE: This product can also be part mixed. For part mixing, using a spatula place 2 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.

Application

Spatula or applicator tool applications -

1. Apply the material to the prepared surface, ensure the product is pressed into any holes, scars or cracks and profile the repair to a smooth finish.

Technical Data & Performance

Coverage Rates

1.5KG (3.3LB) of fully mixed product will give the following coverage rates -

0.219m² at 3mm	2.245ft ² at 120mil
0.111m² at 6mm	1.193ft ² at ¼"

Please note that the coverage rates quoted are theoretical and do not take into consideration the profile or condition of the surface being repaired.

5KG (11LB) of fully mixed product will give the following coverage rates -

0.73m² at 3mm	7.848ft ² at 120 mil
0.220m² at 10mm	3.978ft ² at ¼"

Please note that the coverage rates quoted are theoretical and do not take into consideration the profile or condition of the surface being repaired.

Drying & Cure Times

At 20°C (68°F) allow the applied materials to harden for the times shown below before subjecting them to the conditions indicated.

These times will be doubled at 10°C (50°F) and halved at 30°C (86°F)

Useable Life	30 minutes
Movement Without Load or Immersion	4 hours
Light Loading	8 hours
Full Loading	4 days

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.

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Appearance

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

Available Colours

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 8 hours at 20°C (68°F),

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	2	1
By Volume	2	1

Density

Base	2.28
Activator	2.26
Mixed	2.27

Volume Capacity

440cc/Kg

Solids Content

100%

Slump Resistance

Nil at 10mm

Useable Life

10°C (50°F)	60 minutes
20°C (68°F)	30 minutes
30°C (86°F)	15 minutes
40°C (104°F)	7.5 minutes

Pack Sizes

1.5KG (3.3LB) 5KG (11LB)

Shelf Life

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

Mechanical Properties

Tensile Shear Adhesion ASTM D1002 (Abrasive Blasted Mild Steel with 75-micron profile)	272kg/cm ² (3840 psi)
Abrasion Resistance Taber H10 Wheels/ 1kg load	42mm ³ loss/ 1000 cycles
Pull off adhesion ASTM D4541 on abrasive blasted mild steel with 75-micron profile	272 kg/cm ² (3840psi)
Compressive Strength ASTM D695	1,046kg/cm ² (14880 psi)
Corrosion Resistance ASTM B117	Minimum 1000 hours
Flexural Strength ASTM D790	475kg/cm ² (6,710 psi)
Hardness Shore D to ASTM D2240	89
Impact Resistance Tested to ASTM D256	22J/m

Heat Resistance

Full immersion resistance; Tested water / hydrocarbon immersion to 60°C (140°F) Pass (no blisters)

Dry Heat resistance; tested to ASTM D2485 Pass 150°C (302°F)

Chemical Resistance

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

Global Availability

UPS 241 HDX Heavy Duty Ceramic X is available from a network of Global Distributors for prompt delivery. For further details and the location of your local distributor, please contact Unique Polymer Systems on:

+44(0) 1531 636300 | sales@uniquepolymersystems.com

Technical Service

Complete technical assistance is available. Please contact Unique Polymer Systems with your requirements:

+44(0) 1531 636300 | sales@uniquepolymersystems.com

The products that we supply are for professional use only, it is your responsibility to read the technical data sheets before you place an order and prior to application of the product

Quality: All Unique Polymer Systems Products are supplied under the scopes of the company's fully documented quality system.

Warranty: Unique Polymer Systems 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 accepts no liability arising out of the use of this information or the product described herein.



**USED ALL OVER
THE WORLD**