



UPS 407 EN Epoxy Coating is a high build solvent free epoxy novolac coating designed to provide outstanding chemical and corrosion protection of steel and concrete structures. The coating is particularly resistant to attack by strong acids including 98% sulphuric acid.

Product Features

- Excellent **adhesion** to currently prepared surfaces.
- Excellent resistance to **abrasion** and mechanical damage.
- **Chemical Resistance** – Outstanding chemical resistance to a wide variety of industrial chemicals.

Product Applications

Chemical containment and bund areas, tanks, pumps, chemical drains and channels and pipework.

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

Surface Preparation

Metallic Substrates

All oil and grease must be removed from the surface to be coated using *UPS TAC 883* or *MEK*.

The surface should be abrasive blasted to Swedish Standard Sa2½ and a minimum blast profile of 75 microns using an angular abrasive. Once blast cleaned, the surface must be degreased and cleaned using *UPS TAC 883* or *MEK* and all prepared surfaces must be coated before rusting or oxidation occur.

Note: For salt contaminated surfaces, the area must be abrasive blast cleaned as above and left for 24 hours to allow any ingrained salts to come to the surface. After this period the surface must be washed with *UPS TAC 883* prior to brush blasting to remove the surface salts. This process must be repeated until all ingrained salts have been sweated out of the surface and removed.

Concrete Surfaces

– Remove any contamination and lightly abrasive blast or scarify taking care not to expose the aggregate before application of *UPS 407 EN*. Allow new concrete to cure

for a minimum of 21 days and likewise treat to remove any surface laitance before coating. For optimum results on damp concrete, condition with *UPS 905 DS*. Where the concrete is dry but highly porous, it is recommended to condition with *UPS 909 SPEP*.

Mixing & Application

Warm the Base 15-25°C before mixing and do not apply when the ambient or substrate temperature is less than 10°C or when the relative humidity is greater than 90%.

Pour approximately half the contents of the Activator unit into the base container and mix carefully using a spatula. Once the two materials have been blended, add the remainder of the Activator ensuring that as much material is drained from the Activator container as possible. Mix the two components together until they are streak free. The material, once fully mixed, has an application time of 30 – 40 minutes at 20°C. this time will be extended at lower temperatures and shorted at higher ones.

Apply the mixed material onto the prepared surface by brush or roller. this should be in two coats at a target thickness of 250 microns per coat using a practical coverage rate of 3.5m² per litre per coat. On rough concrete surfaces the coverage rate of the first layer in particular will be significantly reduced.

Apply the second coat as soon as possible after the first coat is dry and not in excess of 6 hours. Where the maximum over coating interval is exceeded, the first coat should be sweep blasted and leaned prior to over coating.

Where small volume mixes are required, the mixing ratio is 4:1 by weight or 3:1 by volume.

For Optimum Performance

After an initial cure period of at least 12 hours at 20°C, raising the cure temperature progressively to 60 – 80°C for up to 8 hours will result in improved mechanical, thermal and chemical resistance properties.

Physical Constraints

Mixing Ratio	Base	Activator
By Volume	3	1
By Weight	4	1

Colour	Light Grey & Dark Grey
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Drying & Cure Times at 20°C (68°F)	
Useable Life	30 – 40 minutes
Movement Without Load or Immersion	6 hours
Light Loading	12 hours
Full Loading / Water Immersion	4 day
Chemical Contact	7 days

Volume Solids	100%
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Film Thickness	Wet/Dry 500 microns per coat
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Note: Normally applied as a two coat system to achieve a minimum dry film thickness of 500 microns. Detailed method statements are available on request.

Theoretical Coverage Rate	3.5m ² /litre @ 250 microns per coat – Brush (Normally two coats)
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Maximum Operating Temperatures	
Dry Heat	Up to 200°C (392°F) Load Dependent
Wet Heat	Up to 60°C (140°F) Load Dependent

UPS 407 EN offers excellent resistance to the following chemicals when tested at 20°C

Inorganic Acids		Ethanol		100%
Chromic	10%	Butanol		100%
Hydrobromic	40%	Ethanol		100%
Hydrochloric	36%	Ethylene Glycol		100%
Nitric	10%	Hexanol		100%
Nitrous	10%	Propylene Glycol		100%
Phosphoric	40%	Amines		
Sulphuric	98%	Aniline		100%
Organic Acids		Diethanolamine		100%
Acetic	10%	Hydrazine		100%
Carbonic	30%	Methylamine		40%
Citric	30%	Aliphatic Hydrocarbons		
Folic	20%	Cyclohexane		100%
Formic	10%	Hexane		100%
Lactic	10%	Octane		100%
Alkalies		Aromatic Hydrocarbons		
Ammonium Hydroxide	30%	Benzene		100%
Potassium Hydroxide	20%	Naphtha		100%
Sodium Hydroxide	40%	Toluene		100%
Alcohols		Eylene		100%
Butanol	100%			

Physical Properties

Tensile Shear Adhesion (Mild Steel) ASTM D 1002	208kg/cm ² (2950 psi)
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Hardness Shore D ASTM D 2240	85
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Corrosion Resistance ASTM B 117	5000 hours
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Compressive Strength ASTM D 695	984kg/cm ² (13950 psi)
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Flexural Strength ASTM D 790	871kg/cm ² (12300 psi)
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Heat Distortion ASTM 648 at 264 fibre stress	20°C Cure – 52°C 100°C Cure – 75°C
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Shelf Life	
Use within 5 years of manufacture date. Store in original sealed containers at temperatures between 5°C (40°F) and 30°C (86°F).	

Packaging

UPS 407 EN is supplied in the following;

4lt
16lt

Health And Safety

As long as normal good practice is observed UPS 407 EN 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.

The information provided in this Technical 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 Unique Polymer Systems LTD. Users should determine the suitability of the product for their own particular purposes by their own tests.

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