

TECHNICAL DATA SHEET

UPS 403 UCU ULTIMATE EPOXY NOVOLAC 75



UNIQUE POLYMER SYSTEMS

INNOVATE | REBUILD | ENHANCE

UPS 403 UCU Ultimate Epoxy Novolac 75 is a high build solvent free epoxy novolac coating designed to provide outstanding chemical and corrosion protection of steel and concrete structures in continuous immersion conditions at elevated temperatures.

Product Information

Product Features

- The coating has been designed to be applied using heated plural feed spray equipment.
- Once cured will resist high concentration chemicals such as 98% sulphuric acid at immersion temperatures up to 75°C (167°F) 75% Sulphuric acid at 90°C (194°F).
- Excellent adhesion to currently prepared surfaces.
- Resistance to abrasion and mechanical damage.
- Excellent erosion resistance, suitable for use in aqueous slurries.
- Applied in a single coat using heated plural feed spray equipment.
- Solvent free epoxy novolac.

Product Applications

UPS 403 UCU 75 is suitable for;

The protection of chemical containment and bund areas, tanks, pumps, chemical drains, sumps, chemical channels, and pipework.



Apply by heated plural feed spray



Surface Preparation
Manual -
Mechanical -
Abrasive
Blast



Cost
Effective
Solution



Immersed
conditions
temperatures
up to 110°C
(230°F).

Surface Preparation Metallic surfaces

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 above, as well as left for 24 hours to allow any ingrained salts to come to the surface. After the 24-hour period the surface must be washed with UPS 9918 MEK Cleaner prior to brush blasting to remove the surface salts. Repeat this process until all ingrained contaminants have been sweated out of the surface.

Where abrasive blast cleaning is not possible (excluding salt contaminated surfaces) the surface should be roughened by UPS Mini-Blaster, needle gun or grinding. Under these conditions' adhesion levels will not be optimal although still satisfactory for most applications.

Concrete

Existing Concrete

1. If the concrete surface is contaminated, pressure wash using clean water.
2. Once the concrete is dry, lightly abrasive blast or scarify taking care not to expose the aggregate.
3. Clean all dust and debris from the surface and prime with UPS 909 PP Porous Primer.
4. Apply UPS 909 PP at 150 microns (6mil) WFT, leave to cure for 3 hours (20°C / 68°F) before overcoating.

New Concrete

1. Allow new concrete to cure for a minimum of 21 days and treat to remove any surface laitance.
2. Check the moisture content of the concrete prior to coating (8% moisture content or below).
3. Lightly scarify the surface taking care not to expose the aggregate.
4. Clean all dust and debris from the surface and prime with UPS 909 PP Porous Primer.
5. Apply UPS 909 PP at 150 microns (6mil) WFT, leave to cure for 3 hours (20°C / 68°F) before overcoating.

PLEASE NOTE: Allow new concrete to cure for a minimum of 21 days, likewise, treat to remove any surface laitance and check the moisture content of the concrete is 8% or below before coating. For optimum results on damp concrete, condition with UPS 905 DP. Where the concrete is dry but highly porous, it is recommended to condition with UPS 909 PP.

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.

Spray Set up & Application

1. Spray application should be carried out by heated plural feed spray rig.
2. The temperature of the base component should be kept around 35°C (95°F).
3. Spray pressure of 3600psi and a tip size of 19-23 thou should be used.
4. Using a 50mm (2") wide synthetic brush, stripe coat all edges, joints, corners and equipment with the mixed material. The stripe coat must be approximately 100mm (4") wide, at 400. Microns (16 mil) wet film.
5. Once the stripe coat has cured sufficiently and is capable of being overcoated, apply UPS 403 UCU to all surfaces at 1000 microns (40mil) wet film thickness.

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Technical Data & Performance

Coverage Rates

1LTR (1.25 US Gallon) of fully mixed product will give the following coverage rates -

2.5m² at 400 microns 26ft² at 16 mil

16LTR (4.2 US Gallon) of fully mixed product will give the following coverage rates -

16m² at 1000 microns 171ft² at 40mil

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 extended at lower temperatures and reduced at higher temperatures.

Useable Life	15 minutes
Minimum overcoating time	4 hours
Maximum overcoating times	12 hours
Water/sea water immersion	4 days
Chemical immersion	7 days

For Optimum Performance

After an initial curing period of at least 12 hours at 20°C (68°F), raising the cure temperature progressively to 60-80°C (140-175°F) for up to 8 hours will result in improved mechanical, thermal and chemical resistance properties.

Appearance

Mixed Material Colour	Red/ Grey Fluid thixotropic liquid
Base Component Colour	Dark Grey or Red thixotropic liquid
Activator Component	Amber Fluid

Available Colours

Grey I Red

Over Coating Times

Minimum	The applied material can be over coated as soon as it is touch dry (approx. 4 hrs.at 20°C - 68°F)
Maximum	The over coating time should not exceed 12 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	5.34	1
By Volume	4	1

Density

Base	1.40
Activator	1.05
Mixed	1.34

Solids Content

100%

Slump Resistance

Nil at 1000 microns

Useable Life

10°C (50°F)	30 minutes
20°C (68°F)	15 minutes
30°C (86°F)	7 minutes

40°C (104°F)

3.5 minutes

Pack Sizes

1LTR (0.25 US Gallon)	4LTR (1.1 US Gallon)	16LTR (4.2 US Gallon)
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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)	188kg/cm ² (2,650 psi)
Compressive Strength ASTM D695	592kg/cm ² (8,400 psi)
Corrosion Resistance ASTM B117	Minimum 5000 hours
Flexural Strength ASTM D790	480kg/cm ² (6,800 psi)
Hardness Shore D ASTM D2240	20°C (68°F) – 86 100°C (212°F) – 84 150°C (302°F) - 72
Heat Distortion ASTM D648 At 264psi Fibre Stress	20°C (68°F) Cure – 62°C (143.6°F) 100°C (212°F) Cure – 98°C (208°F) 150°C (302°F) Cure – 112°C (234°F)

Heat Resistance

Suitable for use in immersed conditions at temperatures up to 110°C (230°F).

Resistant to dry heat up to 170°C (338°F) dependent on load.

Chemical Resistance

The product demonstrates resistance to a wide variety of inorganic acids, alkalis, salts and organic media.

Chemical	Concentration	Temperature
Sulphuric Acid	98%	75°C
Acetic Acid	10%	50°C
Chromic Acid	10%	75°C
Hydrobromic Acid	40%	50°C
Hydrochloric Acid	36%	50°C
Benzene	100%	60°C
Phosphoric Acid	75%	90°C
Butanol	100%	50°C
Nitric Acid	10%	50°C
Ammonia Hydroxide	30%	80°C
Ethanol	100%	60°C
Toluene	100%	60°C
Xylene	100%	60°C

Global Availability

UPS 403 UCU Ultimate Epoxy Novolac 75 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