Strongcoat EPU100

High performance flexible epoxy polyurethane resin protective coating

DESCRIPTION

Strongcoat EPU100 is high performance floor and wall coating based on hybrid combination of epoxy polyurethane resins. It is supplied as a two pack material in pre-weighed quantities ready for on-site mixing and use.

Strongcoat EPU100 is easily sprayed, brushed or rolled to concrete and steel substrates in a two coat application, typically applied at a wet film thickness of 200 - 250 microns per coat without sagging.

Strongcoat EPU100 is available in a standard grey colour, other colours are available subject to minimum order quantities.

APPLICATIONS

Provides chemical and abrasion resistance to prevent corrosion of concrete and steel surfaces for applications such as:

- Wall and floor protective coating.
- Protection system for car park decks.
- Manhole and pipe lining.
- Secondary containments.
- Lining for sewage and effluent plants.
- Lining of aeration and sludge tanks.
- Sea water tanks, channels and intakes.
- Foundation waterproofing.
- Reservoirs, water treatment plants

ADVANTAGES

- Flexible coating.
- Environment friendly – totally free of carcinogenic materials like coal tar, pitch and aromatic hydrocarbons.
- Cost saving – primerless system, easy brush, roller or spray application.
- Impermeable waterproof coating.
- Protects sub-structures as well as superstructures against weathering and environmental attacks.
- Excellent chemical resistance, as well as resisting algae and bacterial growth.
- UV resistant. Colour change may occur under direct sunlight without affecting the performance.
- Hydrocarbon resistant.

STANDARDS

Strongcoat EPU100 complies with the requirements of EN1504-2 Surface Protection Systems for Coatings (C) Principles 2.2 and 5.1.

TECHNICAL PROPERTIES @ 25°C ± 2:	
Colour:	Grey
Mixed density: ASTM D1475	1.45 ± 0.05 g/cm³
Pot life: ASTM D2471	100 - 140 min
Bond strength: ASTM D4541	> 2 MPa
Tack free time: ASTM D1640	4 - 5 hr
Overcoating time: ASTM D1640	6 - 8 hr
Full cure: ASTM D1640	7 days
Taber abrasion resistance: (1000 g, 1000 cycle) ASTM D4060, weight loss CS17 wheel	80 milligram
Water absorption: ASTM D570	< 0.3%
VOC: ASTM D2369	≤ 100 g/ltr (comply with LEED)

METHOD OF USE

SURFACE PREPARATION

All surfaces must be clean and free from dust or loose material.

Concrete surfaces
Substrates to be prepared by mechanical means such as grit blasting, or other suitable removal methods. Following the preparation of a concrete surface, care should be taken to ensure that any surface irregularities are filled with a twin pack epoxy putty such as Quickmast 341.

Metal surfaces
Any metal surfaces should be grit blasted to a near white finish, meeting the requirements of Swedish standards SA2½ or equivalent.

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PRIMING

Concrete surfaces
Priming is not required on properly prepared concrete surfaces – see preparation section.

Metal surfaces
All metal surfaces should be coated immediately after preparation.

If this is not possible and to eliminate formation of rust, prime the metal surfaces using a 100% solids epoxy primer.

MIXING

The contents of the resin pack should be thoroughly stirred to disperse any possible settlement. The entire contents of both the hardener and resin cans should be poured into a suitable sized mixing vessel.

It is recommended that the two components are mixed together mechanically using a slow speed (400 - 600 rpm) electric drill fitted with a mixing paddle. Mixing should be carried out continuously for 3 - 5 minutes, until a uniform consistency is achieved.

APPLICATION

A minimum 2 coat application is generally recommended to ensure a full, unbroken coating is achieved.

BRUSH/ROLLER APPLICATION

Once mixed, the material should be immediately applied, ensuring that a continuous coating is obtained.

The first coat is applied to achieve a uniform coating with a wet film thickness not less than 200 microns, and should be allowed to dry for at least 2 hours at 35°C before the application of the second coat.

The second coat should be applied after 4 hours (at 35°C) from the application of the first coat. The second coat should be applied as above again achieving a wet film thickness not less than 200 microns.

SPRAY APPLICATION

Where large areas are to be coated, it is advisable to consider spray application.

Performance characteristics	EN 1504-2 requirement	Measured value
Capillary absorption: EN 1062-3	< 0.1 kg/m^2.h$^{0.5}$	Pass
Adhesion strength: EN 1542	≥ 1.5 MPa	≥ 2.0 MPa (flexible system with trafficking)
Abrasion resistance: EN ISO 5470-1	< 3000 mg H22, 1 kg, 1000 cycle	Pass < 1000 mg
Impact resistance: EN ISO 6272-1	Class I: ≥ 4 Nm Class II: ≥ 10 Nm Class III: ≥ 20 Nm	Class III
Crack bridging: EN 1062-7	A1: > 0.10 mm A2: > 0.25 mm A3: > 0.50 mm A4: > 1.25 mm A5: > 2.50 mm	Class A3
Artificial weathering: EN 1062-11:2002	After 2000 hr No blistering, cracking, or flaking	Pass

OCCASSIONAL SPILLAGE

Chemical Resistance after full cure (7 days @ 25°C), ASTM D1308 (Spot - test @ 1 hr)

Organic Acids	
Lactic Acid 10%	R
Oleic Acid sat.	R
Citric Acid 25%	R
Vinegar 10%	R
Inorganic Bases	
Sodium Hydroxide 50%	R
Ammonia Solution 10%	R
Potassium Hydroxide 50%	R
Aquous Solutions	
Sodium Chloride sat	R
Tap Water	R
Chlorinated Water	R
Dead Sea Water	R

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REPAIRING AND OVER COATING

Any applications of Strongcoat EPU100 which have become damaged can be readily be over coated.

The existing surface should be well abraded, using a stiff wire brush, or similar, to ensure that a good mechanical bond will be achieved between the two layers.

Any loose material should be removed.

Over coating works can then proceed as for new work, always ensuring that the prepared substrate is free from any moisture.

LIMITATIONS

- Strongcoat EPU100 is formulated for application to clean sound substrates of steel or concrete, and where it can be protected from contact with water for the first 24 hours after application as discoloration could occur.
- For cold weather working (down to 5°C), it is recommended that materials are stored in a heated building and only removed immediately before use. Accelerated heating methods are not to be utilized under any circumstances. Application to commence while temperature is 5°C and rising.
- In hot weather working conditions (35°C) and above, it is recommended to keep material in a cool shaded area to ensure ease of application.

CLEANING

Tools and equipment should be cleaned with solvent immediately after use.

PACKAGING

Strongcoat EPU100 is available in 14 kg packs (10 litre).

COVERAGE

The coverage rate is 0.29 kg/m² @ 200 microns.

STORAGE

Strongcoat EPU100 has a shelf life of 12 months from date of manufacture if stored in warehouse conditions below 35oC.

If these conditions are exceeded, DCP Technical Department should be contacted for advice.

OCCASSIONAL SPILLAGE

Chemical Resistance after full cure (7 days @ 25°C), ASTM D1308 (Spot - test @ 1 hr)

Solvents	
White Spirit	R
Xylene	R
Toluene	R
Acetone	R
Oils & Fuels	
Benzyl Alcohol	R
Brake Fluid	R
Engine Oil	R
Diesel	R
Kerosene	R
Detergents & Soaps	R
Inorganic Acids	
Sulphuric Acid 25%	R
Phosphoric Acid 20%	R
Hydrochloric Acid 10%	R
Nitric Acid 10%	R

CHEMICAL RESISTANCE

Based on test method ASTM D1308, after 7 days immersion in the below chemicals.

Hydrochloric Acid 10%	R
Phosphoric Acid 20%	SS
Sulphuric Acid 25%	R
Nitric Acid 10%	RS
Diesel	R
Ammonia Solution 10%	R
Detergent Solutions	R
Engine Oil	R
Tap Water	R
Sea Water	R
Chlorinated Water	R

R: Resistant
RS: Resistant with slight discoloration
SS: Slight softening

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CAUTIONS

HEALTH AND SAFETY

Strongcoat EPU100 should not come in contact with skin or eyes, nor should it be swallowed. Avoid inhalation of vapours and ensure adequate ventilation.

Wear suitable protective clothing, gloves and eye/face protection.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advise.
If swallowed seek medical attention immediately – do not induce vomiting.

For further information refer to the Safety Data Sheet.

FIRE

Strongcoat EPU100 is nonflammable.

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- Concrete admixtures.
- Surface treatments
- Grouts and anchors.
- Concrete repair.
- Flooring systems.
- Protective coatings.
- Sealants.
- Waterproofing.
- Adhesives.
- Tile adhesives and grouts.
- Building products.
- Structural strengthening.