



Fosroc Polyurea WPE

Formerly known as Fosroc Nukote ST

Two component fast set, rapid curing, self levelling 100% solids, flexible, two component pure polyurea elastomer water proofing and protective spray coating.

General Information

Fosroc Polyurea WPE is a self levelling 100% solids flexible two component, rapid curing Polyurea coating.

It consist of the two components Fosroc Polyurea ISO WPE and Fosroc Polyurea AMINE WPE. It offers excellent surfaces and good overall physical properties.

The WPE series is a pure Polyurea formulation designed as a water proofing and protective coating. It offers short reaction time of 8 sec. It combines advantages of seamless films with very long life cycles and high durability.

Uses

Anti-corrosion, waterproof and protective coating for concrete and steel in a wide range of environmental conditions.

Typical applications include:

- Below grade waterproofing
- Pipe/ Pipeline coating
- Bridge/ Bridge deck waterproofing
- Tank coating
- Waste water tank lining
- Marine environment
- Roof waterproofing
- Truck bed lining
- Theme parks & decorative designs
- Aquarium lining
- Landscape & water containment
- Waterparks & playgrounds
- Rail cars
- Line striping
- Secondary containment
- Airports
- Refineries

Advantages

- Environment friendly – zero VOC
- Excellent chemical resistance, thermal stability and UV resistance
- Very low turn-around time. The coated substrate can be put in to full service within the hour
- Strong impact, abrasion and puncture resistance
- Seamless and monolithic, including field joints
- Significantly enhances the durability of reinforcement concrete
- Low permeability values
- Can be applied at ambient temperatures between – 30°C to 70°C
- Designed for service temperatures from -30°C to 135°C

Specification

Where mentioned in the contract drawings, the protective and waterproofing coating shall be Fosroc Polyurea WPE, a 100% solids, flexible, two component, rapid curing pure Polyurea coating system providing high corrosion, abrasion and thermal shock resistance. It shall meet the values under the section “ Properties”.

Properties

Physical properties at 24°C

Solids by Volume	: 100%
Volatile organic compound	: 0g/l
Viscosity	: Comp A =1000 mPa.s : Comp B <1200 mPa.s
Density at 25°C	: g/cm ³ : 1.01
Tensile strength	: 19 N/mm ²
ASTM D412	
Tear strength	: 90 N/mm ² + or -4
ASTM D624C	
Elongation ASTM D412	: Min. 360%

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Shore – A ASTM D2240	: 94
Shore – D ASTM D2240	: 50
Abrasion (taber H18) ASTM D4060	: 235 mg per 1000 cycles
Service temperatura	: -30°C to +135°C
Cure time, walkable	: 3min
Post cure	: 24 hours

Processing parameters

Gel Time	: 5 – 10 sec
Tack free	: 35 – 45 sec
Post cure	: 24 hours
Volume ratio	: 1:1
Block Temperature	: 70°C to 80°C
Hose Temperature	: 70°C to 80°C
Pressure	: 120 bar

Instructions for Use

Surface preparation

All surfaces should be clean, dry and free from contamination. The surface should be assessed and treated in accordance with ISO 8504.

Concrete

Dry abrasive blasting, wet abrasive blasting, vacuum-assisted abrasive blasting, and centrifugal shot blasting, as described in ASTM D4259, may be used to remove contaminants, laitance, and weak concrete, to expose blow holes, and to produce a sound concrete surface with adequate profile and surface porosity. All blow holes and minor surface imperfections shall be filled with recommended filler prior to application of primer.

Bar Steel

All welding seams must have a surface finish which ensures that the quality of the paint system will be maintained in all respects. Holes in welding seams, undercuts, cracks, etc. should be avoided. If found, they must be remedied by welding and/or grinding. All weld spatters must be removed. All sharp edges must be removed or rounded off in such a way that the specified film thickness can be build-up on all surfaces. The radius of the rounding should be minimum 2 mm.

The steel must be of first class quality and should not have been allowed to rust more than corresponding to grade B of ISO 8501-1:2007. Any laminations must be removed.

Blast cleaning to Sa 2½. (ISO 8501-1:2007). Roughness : using abrasives suitable to achieve a coarse surface of Grade Medium G (50-85µm, Ry5) (ISO 8503-2).

Priming

The substrate shall be primed as below. For concrete and steel substrates after preparation shall be primed with Fosroc Nitoprime 31. The primer shall be allowed to become tack free prior to application of Fosroc Polyurea WPE.

Processing parameters

The re-coat window ranges from 20 seconds to a few hours depending on the application. The post cure takes 24 hours at 25°C. The temperature of the sprayed object can be theoretically between 0 to 50°C with reaction times significantly longer at low temperatures in the range of 0-15°C ensure surface temperature is 30°C above dew point.

Spraying machine

A high pressure spray proportioning machine for plural heated components such as those manufactures by GlasCraft or Graco should be used for this material.

Decomposition

Cured Fosroc Polyurea ISO WPE can be disposed without restriction the uncured isocyanate and resin portions should be disposed according to local environmental laws and ordinances. Material safety datasheets with all relevant information of Fosroc Polyurea ISO WPE and Fosroc Polyurea AMINE WPE are available on request.

Fosroc Polyurea WPE Coloured : 400 ltrs

Part A : 200 ltrs	Part B : 195 ltrs + colour pack
Nitoprime 31	: 5 kg pack

Coverage

Fosroc Polyurea WPE	: 1m ² /litre @ 1000 microns wft per coat
Nitoprime 31	: 5m ² /kg/coat

Note : The coverage figure is theoretical – due to wastage factors and the variety and nature of substrates, practical coverage figures may be reduced.



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Coating

Should be applied by specialist applicators approved by Fosroc, Do not dilute Fosroc Polyurea WPE under any circumstances. Use appropriate chemical for flushing of equipment. If material is stored for a period of time thoroughly mix the amine component with drum mixer until a homogenous mixture and colour is obtained.

Packaging

Part A

Amine component clear

Drums	:	200 ltrs
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Amine component colour

Drums	:	195 ltrs + colour pack
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Part B

Iso component

Drums	:	200 ltrs
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Storage

Shelf life

Fosroc Polyurea WPE has a shelf life of 12 months is kept in a dry, air conditioned store between 5°C and 30°C in the original unopened containers. Changes in colour have no negative effect on reactivity and physical properties of the elastomer.

Colour

It should be noted that Fosroc Polyurea WPE is an aromatic polyurea; therefore, as with all aromatics over a period of time colour change will occur if exposed to UV rays. This will not have any negative effect on the physical properties of the product. Aliphatic polyurethane, Aliphatic Polyurea or Aliphatic Polyasphatic can be used as top coat where long-term aesthetics regarding colours are of critical importance.

Technical support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Safety handling

Avoid contact with eyes and skin wear suitable protective clothing, gloves and eye/face protection at all times. Ensure adequate ventilation and avoid inhalation of vapour and aerosol. Use respirator. Fosroc Polyurea ISO WPE may cause sensitisation by inhalation and skin contact. In case of eye contact, first aid must be administered immediately. The eyes should held open while flushing with a continuous low pressure stream of water for at least 15 minutes. Seek medical advice immediately. If swallowed, seek medical attention immediately – do not induce vomiting. The use of barrier creams provides additional skin protection and disposed in a normal manner. "Drip free" containers should be disposed according to local environmental laws and ordinances.

Please refer to MSDS for detailed information on safety handling.



Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation of information given by it.

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