

Fosroc Polyurea WPE

Spray applied, rapid cure 100% solids, pure polyurea elastomer waterproofing membrane & protective coating

General Information

Fosroc Polyurea WPE is a two component 100% solids, flexible, self smoothing, rapid cure Polyurea membrane. The product is formulated from tried and tested polyurea technology components which, when combined and spray applied, offer excellent physical properties and extremely high rates of application.

The pure polyurea formulation used in Fosroc Polyurea WPE permits the product to be used as a seamless, durable high performance waterproofing membrane and protective coating.

Uses

As a seamless, water excluding or containment membrane for application to concrete in wide range of environments. The product can also be used as a highly effective waterproof and protective membrane for concrete steel and other materials in contact with water.

Typical applications include:

- Green Roofs, Garden Roofs, Flat roofs waterproofing
- Podium deck waterproofing
- Internal structure wet area waterproofing
- Below grade structural waterproofing
- Cut & Cover tunnel waterproofing
- Culvert waterproofing
- Manhole waterproofing
- Bridge deck waterproofing
- Planter waterproofing
- Rapid refurbishment roof waterproofing
- Emergency waterproofing situations
- Above or sub ground concrete water tank containment lining or exclusion membrane
- Steel water tank internal lining or external protective coating
- Concrete or GRP water tank internal refurbishment
- Landscape and water containment
- Ornamental, swimming and wave pool chlorinated water containment
- Tank farm bund secondary containment

Advantages

- Environment friendly - zero VOC
- Excellent chemical resistance, thermal stability and UV resistance
- Resistance to root penetration
- Very high rates of application
- Fast cure, no waiting to return to service
- Extremely resistant to impact, abrasion and puncture
- Seamless application even over joints
- Concrete durability enhancement
- Application range between -30 °C To 70 °C
- Service temperature range -30 °C to 135 °C

Specification

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, as manufactured by Fosroc International. The system shall meet the values as published in the manufacturers product data sheet under the heading Properties. The product shall only be used in the manner as described in the manufacturers product data sheet and/or job specific method statement as maybe written by the manufacturer and approved for suitability by the specifier

Properties

Solids by Volume	: 100%
VOC	: 0g/l
Tensile Strength ASTM D412	: >17 MPa(Avg.)
Tear Resistance ASTM D624C	: 90+4MPa(Avg.)
Elongation ASTM D412	: >300% (Avg.)
Modulus 100%/200%/300% ASTM D412	: >9/13/16MPa
Viscosity	: A ISO =1000 mPas : B AMINE <1200 mPas
Density at 25°C	: 1.01g/ml
Shore D ASTM D2240	: 46(Avg.)
Cure time before foot traffic	: 3 min
Abrasion (1kg, H22 wheels) ASTM D4060	: 36 mg /1000 cycles
Abrasion (1kg, CS17 wheels) DIN EN ISO 5470	: 0.02 mg /1000 cycles
Root Resistance (DD CEN/TS14416)	: No penetration

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Processing parameters

Block Temperature	: +70°C to +80°C
Hose Temperature	: +70°C to +80°C
Volume ratio	: 1:1
Pressure	: 120 - 150 bar

Refer to Application section below and Fosroc Polyurea Method Statement for further detail.

Instructions For Use

Surface Preparation

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

Concrete

Dry abrasive blasting, wet abrasive blasting, vacuumassisted 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.

Bare 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. must 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 must be minimum 2 mm. The steel must be of first class quality and must 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 2^{1/2} . (ISO 8501-1:2007). Roughness: using abrasives suitable to achieve a coarse surface of Grade Medium G (50-85 m, Ry5) (ISO 8503-2).

Priming

Following correct preparation, the substrate must be primed.

For sound, dry concrete and at ambient/substrate temperatures of $\geq 25^{\circ}\text{C}$, prime using Fosroc Nitoprime 31. For concrete, suggested application rate is 250ml per m²; For steel substrates, a suggested rate of 150ml per m². A broadcast of fire-dried sand is recommended for optimum adhesion properties.

The primer shall be allowed to become touch-dry prior to application of Fosroc Polyurea WPE.

Refer to Fosroc Polyurea Method Statement for full details.

Spray Equipment

A high pressure spray proportioning machine/ spray gun for plural heated polyurea components such as those manufactured by GlasCraft or Graco should be used for this product.

A list of appropriate equipment is provided in the Fosroc Polyurea Method Statement.

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 supplied air hood.

Fosroc Polyurea WPE Part A ISO, Fosroc Nitoprime 31 (Parts A and B) may cause sensitisation by inhalation and skin contact. In case of eye contact, first aid must be administered immediately. The eyes should be 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.

Refer to safety data sheets for detailed information.



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Application

The client/ main contractor must be satisfied that the applicator has suitable equipment and expertise, and will follow the procedures detailed in this datasheet and in the Fosroc Polyurea Method Statement.

Do not dilute Fosroc Polyurea WPE, Fosroc Nitoprime 31 or Fosroc Primer 195 under any circumstances.

Normal recommended minimum applied thickness of Fosroc Polyurea WPE is 1.5mm, using cross-hatch spray pattern. Applied product can be walked on carefully after approximately 2 mins; is light duty trafficable (e.g. light foot traffic) after approximately 15-20 minutes, and fully serviceable after 24 hours.

For temperatures below +5.C, longer cure times must be anticipated – contact Fosroc for further advice.

Use appropriate non-solvent chemical for the flushing of equipment.

In the case of prolonged storage prior to use, thoroughly mix the amine component with a drum mixer until a homogenous mixture and colour is obtained.

Refer to Fosroc Polyurea Method Statement for further detail.

Colour Stable Topcoat

If color stability is required, a minimum 0.2mm film of Fosroc Nitoproof UVR Topcoat of the appropriate colour should be applied. See product data sheet.

Nitoproof UVR Topcoat should be applied to clean, dry Polyurea WPE surface within 48 hours of polyurea application. If >48 hours has elapsed since polyurea application, polyurea surface should be reactivated using MEK Solvent wipe and allowed to dry prior to application of Nitoproof UVR Topcoat.

Estimating

Primer : 300-400 ml per m²

(Coverage typical & type dependent, see appropriate Fosroc Method Statement)

Fosroc Polyurea WPE : 1.0 - 3.0 ltrs per m² *
depending on specification

Fosroc Nitoproof UVR Topcoat :
16 m² per 5kg pack for 0.2mm film
32 m² per 10kg pack for 0.2mm film

* Note:Normal recommended coverage is 1.5 litres/m². 1.0 litre/m² coverage rate is the absolute minimum and requires a highly experienced operator for even and effective coverage, using a cross-hatch spray pattern. 3.0 litres/m² rate is the maximum coverage rate for a single coat application. But job specific, see appropriate Fosroc Method Statement)

Nitoproof UVR Topcoat should be applied as a minimum 0.2mm film to achieve 100% opacity.

No allowance has been made for wastage in the above coverage calculations nor have the specific requirements of any particular job site been taken into consideration.

Supply & Packaging

Primer (Nitoprime 31) : 5lts or 20 lts packs

Fosroc Polyurea WPE Part A ISO component

Drums : 200 ltrs

Fosroc Polyurea WPE Part B AMINE component

Drums : 200 ltrs

Fosroc Nitoproof UVR

Topcoat : 5kg , 10 kg packs

Storage

Fosroc Polyurea WPE has a shelf life of 12 months from date of manufacture if kept in a dry store at between 5 °C to 30°C in original unopened containers.

The Part B component of the product shall always be thoroughly stirred using a drum mixer prior to use. Slight colour changes to unpigmented components may occur towards the end of a prolonged storage period; these changes have no adverse effects on either the reactivity or the physical properties of the product.

Limitations

Fosroc Polyurea WPE is formulated from the highest quality aromatic resins. In conditions of UV ray exposure all aromatic materials will tend to exhibit a degree of colour fade. Any such colour fade will have no negative effect on the physical properties of the product or its performance.

Where aesthetic are of major importance the aromatic polyurea may be overcoated with Fosroc colour stable product.

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Disposal

Before disposing of any product users are urged to check on local regulations with regard to the disposal of chemical products. However, fully cured Fosroc Polyurea WPE can be disposed of without restriction in most jurisdictions. Uncured Part A (the isocyanate component) and Part B (the amine component) will require to be disposed of in accordance with local environmental and waste disposal regulations. Material safety datasheets with all relevant information in respect of Fosroc Polyurea WPE, its individual components and appropriate Primers are available on request from your nearest Fosroc office.

If any uncertainty exists as to the appropriate method of disposal please contact your nearest Fosroc office.

Service & Technical Support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. Fosroc also offers on site service support and dedicated specification assistance in many locations throughout the world.

Additional Information

Fosroc manufactures a wide range of complementary products which include :

- waterproofing membranes & waterstops
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialised flooring materials

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc's "Systematic Approach" to concrete repair features the following :

- hand-placed repair mortars
- spray grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/anti-chloride protective coatings
- chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc office - as below.

* Denotes the trademark of Fosroc International Limited

† See separate data sheet

* Formerly known and sold as Fosroc NuKote HT, Now marketed as Fosroc Polyurea WPE



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We also have offices in the following locations :

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