

Fast setting, hand-applied hybrid polyurea elastomeric waterproof coating

Description

Fosroc Polyurea WH 100 is a hand-applied, flexible, two-component, rapid curing hybrid Polyurea system, designed as a waterproofing and protective coating. It combines the advantages of seamless coating with long life cycles and high durability.

Fosroc Polyurea WH 100 consists of two main components. Fosroc Polyurea WH 100 Part A ISO; Fosroc Polyurea WH 100 Part B AMINE.

The system offers excellent surface properties and overall physical properties.

See Fosroc Polyurea Method Statement for application protocol and further details.

Uses

Fast curing waterproof and protective coating for concrete and steel in a wide range of environmental conditions. Does not require plural proportioning equipment meaning it's especially beneficial for smaller roof areas or where access for equipment is difficult.

Typical applications include:

- Podium decks
- Stadium stands
- Green roofs and planter boxes
- Service roofs

Advantages

- Good thermal stability and UV resistance *
- Fast turn-around time.
- Excellent impact, abrasion and puncture resistance
- Seamless and monolithic, including field joints
- Enhances the durability of reinforced concrete
- Does not require plural proportioning equipment
- Colour stable when coated with Nitoproof UVR Topcoat **
- Fire rated when coated with Nitoproof UVR Topcoat **
- Designed for service temperatures from -20°C to +80°C

* see Colour section

** see Nitoproof UVR Topcoat Data Sheet

Specification

Where mentioned in the contract drawings, the protective and waterproofing coating shall be Fosroc Polyurea WH 100, flexible, two-component, hand-applied rapid curing hybrid Polyurea coating system providing high corrosion resistance, abrasion and waterproofing resistance.

Properties

Typical Physical properties at 25°C

Viscosity at 20°C	: A ISO	5,000-10,000mPas (25 deg C)
	: B AMINE	5mPas
Density at 20°C	: A ISO	1.3g/ml
	: B AMINE	0.9g/ml
Tensile strength ASTM D412	: 6MPa	
Tear Resistance ASTM D624C	: 28N/mm	
Elongation ASTM D412	: >400%	
Hardness, Shore A ASTM D2240	: 71	
Puncture resistance ASTM E154	: 550N	
MVTR ASTM E96	: 5.8g/m ² /day	
Crack bridging 2mm ASTM C836	: Pass	
Pot life	: 1 hour at 23°C	
Service temperature	: -20°C to +80°C	
Chemical resistance	: Spillages of mineral and hydraulic oils, and fuels	
	: Sea water	
	: Dilute acids and alkalis in soils	

Clarification of property values

The typical physical properties given above are derived from independent verified testing of Fosroc Polyurea WH 100 hand-applied in accordance with the Fosroc Polyurea Method Statement in controlled laboratory environment and tested after a minimum of 14 days cure.

Results derived from testing field-applied samples may vary dependent on circumstances beyond our control such as application temperatures and weather conditions, film thickness, test and curing conditions and age of samples tested.

Fosroc® Polyurea WH 100

Certification

Root resistance to CEN / TS 14416

Fire Rated as roof waterproofing to BS476-3: EXT F.AA when coated with Fosroc Nitoproof UVR Topcoat.

Solar Reflectance Index value of 102 to ASTM E1980 when coated with Fosroc Nitoproof UVR Topcoat white.

Instructions for use

Surface preparation

All surfaces must be clean, dry and free from contamination. Steel surfaces must 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.

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

Priming

Following correct preparation, the substrate must be primed. For sound, dry concrete prime using Nitoprime 31. For damp concrete use Fosroc Primer 195. Always make sure surface temperature is at least 5°C and 3°C above dew point. For steel surfaces use Fosroc Nitoprime 31 or Fosroc Primer 195, for other surfaces consult Fosroc for advice.

For concrete, suggested application rate is 0.25kg per m²; For steel substrates, a suggested rate of 0.15kg per m².

The primer shall be allowed to become touch-dry prior to application of Fosroc Polyurea WH 100.

Application

Do not dilute Fosroc Polyurea WH 100, Fosroc Nitoprime 31 or Fosroc Primer 195 under any circumstances.

Normal recommended dft of Fosroc Polyurea WH 100 is 1.5mm. Applied product can be walked on carefully after 2 hours minimum depending on temperature; is light duty trafficable (e.g. light foot traffic) after approximately 24 hours, and fully serviceable after 2-3 days.

Stir both components separately. Pour full container Part B Amine into full container Part A ISO and mix for 3-5 minutes using a slow speed drill and paddle. Mixing ratio is A100 / B6 by weight or A100 / B8 by volume.

Apply to substrate using roller, brush, trowel or squeegee. Use a spiked roller afterwards to remove entrapped air and prevent surface bubbling.

Applications onto vertical surfaces add 1 pack of Fosroc Polyurea WH 100 Thickener (400g) to each pack of Fosroc Polyurea WH 100 Part A ISO (25kg) and mix for 3-5 minutes using a slow speed drill and paddle, then pour Part B Amine into Part A container and mix for further 3-5 minutes using a slow speed drill and paddle. Maximum thickness per coat vertically is 600-650 microns wft, equivalent to 0.5mm dft. Overcoat time is ~2 hours at 25°C, 50 minutes at 40°C.

When lapping new coats of Polyurea WH 100 to existing polyurea surface >24 hours after the existing polyurea surface was applied, a Fosroc Nitoprime 150 wipe is required, and allowed to become touch-dry prior to fresh polyurea application.

Use Fosroc Equipment Cleaner or other Fosroc proprietary cleaning solvent for cleaning tools.

For full surface preparation and application instructions refer to the Fosroc Polyurea Method Statement.

Colour Stable Fire Rated Topcoat

If colour stability and/or high fire rating 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 the clean, dry Polyurea WH 100 surface typically 2 - 7 hours after application of the polyurea, but within 48 hours. If >48 hours has elapsed since polyurea application, polyurea surface should be reactivated using a Fosroc Nitoprime 150 wipe and allowed to dry prior to application of Nitoproof UVR Topcoat.

Refer to Fosroc Nitoproof UVR Topcoat product data sheet.



Fosroc® Polyurea WH 100

Estimating Supply:

Fosroc Polyurea WH 100 Part A ISO component

Metal container : 25kg

Fosroc Polyurea WH 100 Part B AMINE component

Metal container : 1.5kg

Fosroc Polyurea WH 100 Thickener

Metal container : 400g packs

Fosroc Primer 195

Metal containers : 20kg packs

Fosroc Nitoprime 31

Metal containers : check local pack sizes

Fosroc Nitoprime 150

Metal container : 1 litre packs

Fosroc Nitoproof UVR Topcoat

Plastic containers : 5 kg, 10 kg packs

Coverage:

Fosroc Primer 195 and Fosroc Nitoprime 31

- Concrete : 0.25kg / m²
Porous concrete will have reduced primer coverage

- Steel : 0.15kg / m²

Polyurea WH 100 : 13-14m² per 26.5kg pack for 1.5mm dft

Fosroc Nitoproof UVR Topcoat : 16 m² / 5kg pack
: 32m² / 10kg pack

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

Limitations

Do not proceed with application if atmospheric relative humidity is >85% or if the surface temperature is <3°C above the dew point.

For a bonded polyurea coating application, concrete substrate must have achieved at least 75% of its design strength. Concrete relative humidity must be ≤75%. Do not proceed with priming or application if the substrate temperature or the ambient temperature is, or is anticipated to be, <+5°C during the application or within the drying period.

For work in exposed areas, do not proceed with application if precipitation is imminent. If in doubt, contact Fosroc for advice.

It should be noted that Fosroc Polyurea WH 100 is an aromatic polyurea; therefore, as with all aromatics, over a period of time significant colour change will occur if exposed to UV rays. This will not cause any negative effect on the physical properties of the product.

For green roof / planter box applications, product must be fully cured prior to adding soil.

Storage

Fosroc Polyurea WH 100 has a shelf life of 12 months if kept in a dry, air conditioned store between +5°C and +30°C in the original unopened containers. Any changes in colour have no negative effect on reactivity and physical properties of the coating.

Precautions

For full information refer to appropriate Product Safety Data Sheet.

Flash Points

Fosroc Polyurea WH 100 Part A ISO	: 45°C
Fosroc Polyurea WH 100 Part B Amine	: 26°C
Fosroc Equipment Cleaner	: 44°C

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.

Fosroc Polyurea WH 100 Part A, Part B and mixed material and Fosroc Equipment Cleaner are flammable materials. Keep away from sources of ignition. Fosroc Nitoprime 31, Fosroc Primer 195 and Fosroc Nitoproof UVR Topcoat may cause sensitisation.

In case of eye contact, first aid must be administered



Fosroc® Polyurea WH 100

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 product safety data sheets for detailed information.

Disposal considerations

Cured Fosroc Polyurea WH 100, cured Fosroc Nitoprime 31, cured Fosroc Primer 195 and cured Nitoproof UVR Topcoat can be disposed of without restriction. The uncured Part A and Part B components should be disposed of according to local environmental laws and ordinances.

“Drip free” containers should be disposed of according to local environmental laws and ordinances.

Refer to safety data sheets for all relevant information on Fosroc Polyurea WH 100, Fosroc Nitoprime 31, Fosroc Primer 195, Fosroc Nitoprime 150 and Fosroc Nitoproof UVR Topcoat.

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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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