Fosroc® Polyurea WH100

constructive solutions

Fast setting, hand-applied hybrid polyurea elastomeric waterproof coating

Description

Fosroc Polyurea WH100 is a hand-applied, flexible, two component, rapid curing hybrid Polyurea system, designed as 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 is 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 euipment
- 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 hbrid Polyurea coating sstem providing high corrosion resistance, abrasion and waterproofing resistance.

Properties

Typical Physical Properties @ 25°C	
Viscosity at 25°C	A ISO 5000-10000mPas (25 deg C) B AMINE 5mPas
Density at 25°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%
Shore A hardness ASTM D2240	71
Puncture resistance ASTM E154	550N
MVTR ASTM E96	5.8g/m²/day
Crack bridging 2mm ASTM C836	Pass
Pot life	1 hour at 23°C
Service temperature	-20°C to +80°C
Chemical resistance	Spilages of mineral and hydrauic 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.

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Certification

Root Resistant to CEN / TS14416.

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

Solar Reflectrance 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. The surface 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 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

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 m^2; For steel substrates, a suggested rate of 0.15kg per m^2.

The primer shall be allowed to become touch-dry prior to plication 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 sing 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. se 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 250C, 50 minutes.

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.

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Nitoproof UVR Topcoat should be applied to the clean, dry polyurea WH 100 surface typically 30 - 60 minutes after application of the Polyurea WH200, but within 48 hours. If >48 hours has elapsed since Polyurea WH200 application, Polyurea WH200 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.

Estimating

Supply:

Fosroc Polyurea WH100 Part A ISO component

Metal container : 25 kg

Fosroc Polyurea WH 100 Part B AMINE component

Metal container : 1.5 kg

Fosroc Polyrea WH100 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 pack

Fosroc Nitoproof UVR Topcoat

Plastic containers : 5 kg, 10 kg packs

Coverage:

Fosroc Primer 195 and Fosroc Nitoprime 31

- Concrete	0.25kg per m^2 Porous concrete will have reduced primer coverage
- Steel	0.15kg per m^2

Fosroc Polyurea WH 100 : 13-14m^2 per 26.5 kg pack f or 1.5mm dft

Fosroc Nitoproof UVR Topcoat	: 16 m^2 / 5kg pack : 32 m^2 / 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 <3ºC above the dew point.

For a bonded Polyurea WH100 coating application, concrete substrate must have achieved at least 75% of its design strength. Concrete relative humidity must be ≤75%. Do not proceed with application if the substrate temperature or the ambient temperature is, or is anticipated to be, <+5ºC during the application. 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 /polyurethane; 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 +5ºC and +30ºC 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 Point

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

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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 WH 100, Fosroc Nitoprime 31, Fosroc Primer 195 and Fosroc Nitoproof UVR Topcoat may cause sensitisation. 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 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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