



constructive solutions

Fosroc Polyurea WH 200

Fast setting, hybrid polyurea/polyurethane elastomeric waterproof coating

Description

Fosroc Polyurea WH 200 is a spray-applied, 100% solids, 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 200 consists of two main components. Fosroc Polyurea WH 200 Part A ISO; Fosroc Polyurea WH 200 Part B AMINE.

The system offers excellent surface properties and overall physical properties.

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

For Green roof applications Fosroc Polyurea WH 200GR must be used.

Uses

Waterproof and protective coating for concrete and steel in a wide range of environmental conditions.

Typical applications include:

- Podium decks
- Stadium stands
- Service roofs
- Cut and cover tunnels
- Green roofs (Fosroc Polyurea WH 200GR)

Advantages

- Environment friendly – zero VOC
- 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
- Low permeability values
- Colour stable when coated with Nitoproof UVR/ Dekguard PU 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 / Dekguard PU Topcoat Data Sheet

Specification

Where mentioned in the contract drawings, the protective and waterproofing coating shall be Fosroc Polyurea WH 200 or Fosroc Polyurea WH 200GR, 100% solids, flexible, two-component, rapid curing hybrid Polyurea coating system providing high corrosion resistance, abrasion and waterproofing resistance.

Properties

Typical Physical properties at 23°C

Solids by Volume	: 100%	
Viscosity	: A ISO	400-800mPas
	: B AMINE	400-800mPas
Density at 25°C, sprayed film	: 1.02g/ml	
Tensile strength ASTM D412	: 13MPa	
Tear Resistance ASTM D624C	: 50N/mm	
Elongation ASTM D412	: >450%	
Shore A ASTM D2240	: 80	
Abrasion (1kg,CS10 wheels)	: 1.4mg /1000 cycles	
ASTM D4060		
Abrasion (1kg,CS17 wheels)	: 19mg /1000 cycles	
DIN EN ISO 5470		
Abrasion (1kg,H22 wheels)	: 117mg /1000 cycles	
ASTM D4060		
Service temperature	: -20°C to +80°C	
Resistance to Fire EN13501-1	: Class E, d0	
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 200 / WH 200GR spray-applied in accordance with the Fosroc Polyurea Method Statement with Probler P2 gun 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 the type and condition of equipment utilised, static and dynamic working pressures, application temperatures and weather conditions, film thickness, test and curing conditions and age of samples tested. A water sinking test must be carried out and a "pass" achieved (sample sinks in water) prior to spraying.

Fosroc Polyurea WH 200

Certification

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

Solar Reflectance Index value of 105 to ASTM E1980 when coated with Fosroc Dekguard PU Topcoat.

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

Processing parameters

Block Temperature	: +65°C to +75°C
Hose Temperature	: +65°C to +75°C
Volume ratio	: 1:1
Pressure	: 120-150bar
Tack free Time	: 15 seconds
Walkable	: 10 minutes
Trafficable (light duty)	: 24 hours
Fully Serviceable	: 2-3 days

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

Project Log

A Project Log should be maintained for each polyurea site application. For details of Project Log requirements refer to the Fosroc Polyurea Method Statement.

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 and at ambient/substrate temperatures of >10°C, prime using Fosroc Nitoprime 31. If this condition, or concrete substrate condition is not met (see limitations), then Fosroc Primer 195 must be used. For steel surfaces use 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. 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 WH 200 / WH 200GR.

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 WIWA or Graco should be used for this product. A list of appropriate equipment is provided in the Fosroc Polyurea Method Statement.



Fosroc Polyurea WH 200

Colour Stable Fire Rated Topcoat

If colour stability and 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.

If colour stability is required a minimum 0.1mm film of Fosroc Dekguard PU Topcoat of appropriate colour should be applied. See product data sheet.

Nitoproof UVR / Dekguard PU Topcoat should be applied to the clean, dry Polyurea WH 200 / WH 200GR surface typically 30 - 60 minutes 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 / Dekguard PU Topcoat.

Refer to Fosroc Nitoproof UVR Topcoat product data sheet and Fosroc Polyurea Method Statement for further detail.

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 WH 200 / WH 200GR, Fosroc Nitoprime 31 or Fosroc Primer 195 under any circumstances.

Normal recommended minimum applied thickness of Fosroc Polyurea WH 200 / WH 200GR is 1.5mm, using cross-hatch spray pattern. Applied product can be walked on carefully after approximately 10 minutes; is light duty trafficable (e.g. light foot traffic) after approximately 24 hours, and fully serviceable after 2-3 days.

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

When lapping new sprayed coat of Polyurea WH 200 / WH 200GR to existing polyurea surface >12 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 appropriate non-solvent chemical for the flushing of equipment.

Refer to Fosroc Polyurea Method Statement for further detail.

Note: if Polyurea WH200 is applied externally it is recommended that either to be protected by suitable means such as screed or coated by SRI requirement compliant “Dekguard PU” which confirms with Green Building requirements in terms of SRI and LRV.

Estimating

Supply:

Fosroc Polyurea WH 200 / WH 200GR Part A ISO component

Pail, Drum	: 46 litres, 194 litres
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Fosroc Polyurea WH 200 / WH 200GR Part B AMINE component

Pail, Drum	: 46 litres, 194 litres
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Fosroc Primer 195

Metal containers	: 20kg packs
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Fosroc Nitoprime 31

Metal containers	: check local pack sizes
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Fosroc Nitoprime 150

Metal container	: 1 litre packs
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Fosroc Nitoproof UVR Topcoat

Plastic containers	: 5 kg, 10 kg packs
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Fosroc Dekguard PU Topcoat

Metal container	: 20 litre packs
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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

Polyurea WH 200 / WH 200GR

: 1.5 litres per m² / 1.5mm thick*

Fosroc Nitoproof UVR Topcoat	: 16 m ² per 5kg pack for 0.2mm film **
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: 32m² per 10kg pack for 0.2mm film **

Fosroc Dekguard PU	: 7 to 10 m ² / 1 ltr
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* Normal recommended coverage is 1.5 litres per m². 3.0 litres/m² rate is the maximum coverage rate for a single coat application.

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



Fosroc Polyurea WH 200

Limitations

Do not proceed with application if atmospheric relative humidity is $>85\%$ or if the surface temperature is $<3^{\circ}\text{C}$ 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 $\leq 75\%$. Do not proceed with application if the substrate temperature or the ambient temperature is, or is anticipated to be, $<+5^{\circ}\text{C}$ 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 200 / WH 200GR 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.

Storage

Fosroc Polyurea WH 200 / WH 200GR has a shelf life of 12 months if kept in a dry, air conditioned store between $+5^{\circ}\text{C}$ and $+30^{\circ}\text{C}$ 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 Point

Fosroc Polyurea WH 200 / WH 200GR and Primer 195 are non-flammable.

Flash Point 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 and aerosol. Use supplied air hood.

Fosroc Polyurea WH 200 / WH 200GR, Fosroc Nitoprime 31, Fosroc Primer 195 and Fosroc Nitoproof UVR / Dekguard PU 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 200 / WH 200GR, cured Fosroc Nitoprime 31, cured Fosroc Primer 195 and cured Nitoproof UVR / Dekguard PU 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 200 / WH 200GR, Fosroc Nitoprime 31, Fosroc Primer 195, Fosroc Nitoprime 150 and Fosroc Nitoproof UVR / Dekguard PU Topcoat.

Fosroc is a registered trademark of Fosroc International Limited.



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 Service. **All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the**

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