Fosroc Polyurea WH 200

constructive solutions

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/ polyurethane 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 WH 200 Method Statement for application protocol and further details

Uses

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

Typical applications include:

- **Podium decks**
- **Roof gardens**
- **Green roofs**
- **Stadium stands**
- **Service roofs**
- **Cut and cover tunnels**

Advantages

- UV stable *
- Environment friendly – zero VOC
- 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 Topcoat **
- Fire rated when coated with Nitoproof UVR Topcoat **
- Designed for service temperatures from -20°C to +80°C

* Under prolonged UV exposure only colour may fade but no effect on the performance parameter of the product.

Specification

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

Properties

Typical Physical properties @ 23°C	
Solids by Volume	: 100%
Viscosity	: A ISO 400-800 MPas : B AMINE 400-800 MPas
Density at 25°C, sprayed film	: 1.02 g/ml
Tensile Strength ASTM D412	: 15 MPa ±10%
Tear Resistance ASTM D624C	: 50 Kn/m
Elongation ASTM D412	: >450%
Shore A hardens	: 80
Abrasion (1kg, CS10 wheels) ASTM D4060	: 1.3 mg/1000 cycles
Abrasion (1kg, CS17 wheels) DIN EN ISO 5470	: 19mg /1000 cycles
Abrasion (1kg, H22 wheels) ASTM D4060	: 117mg /1 000 cycles
Service temperature range	: -20°C to +80°C *
Resistance to Fire EN13501-1	: Class E, d0
Chemical resistance	: Spillages of mineral and hydraulic oils & fuels : Sea water : Dilute acids & alkalis in soils

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Clarification of property values

The typical physical properties given above are derived from independent verified testing of Fosroc Polyurea WH 200 spray-applied in accordance with the Fosroc Polyurea WH 200 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.

Certification

Root Resistant to CEN TS14416.

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

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 WH 200 Method Statement for further detail.

Project Log

A Project Log should be maintained for each Polyurea WH 200 site application. For details of Project Log requirements refer to the Fosroc Polyurea WH 200 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.

Refer to Fosroc Polyurea WH 200 Method Statement for full details.

Spray Equipment

A high pressure spray proportioning machine/ spray gun for plural heated Polyurea WH200 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 WH200 Method Statement.

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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 200 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 and Fosroc Polyurea WH 200 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 WH 200 Method Statement.

Do not dilute Fosroc Polyurea WH 200, Fosroc Nitoprime 31 or Fosroc Primer 195 under any circumstances

Normal recommended minimum applied thickness of Fosroc Polyurea WH 200 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 +5OC, longer cure times must be anticipated – contact Fosroc for further advice.

When lapping new sprayed coat of Polyurea WH 200 to existing Polyurea WH200 surface >12 hours after the existing Polyurea WH200 surface was applied, a Fosroc Nitoprime 150 wipe is required, and allowed to become touch-dry prior to fresh Polyurea WH200 application.

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

Refer to Fosroc Polyurea WH 200 Method Statement for further detail.

Estimating

Supply:

Fosroc Polyurea WH200 Part A ISO component

Pail, Drum : 46 litres, 194 litres

Fosroc Polyurea WH 200 Part B AMINE component

Pail, Drum : 46 litres, 194 litres

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 200 : 1.5 litres per m^2 / 1.5mm thick*

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

* Normal recommended coverage is 1.5 litres per m^2. 3.0 litres/m^2 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.

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 WH200 coating application, concrete substrate must have achieved at least 75% of its design strength. Concrete relative humidity must be ≤75%. Do not proceed with

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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 200 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.

Storage

Fosroc Polyurea WH 200 has a shelf life of 12 months if kept in a dry, air conditioned store between +5OC and +30^{O}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 and Primer 195 are non-flammable. Flash Point Fosroc Equipment Cleaner: 44^{o}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, 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 200, 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 200, Fosroc Nitoprime 31, Fosroc Primer 195, Fosroc Nitoprime 150 and Fosroc Nitoproof UVR Topcoat.

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