Fosroc®
Polyurea WHE110

constructive solutions

Fast setting, hybrid polyurea-polyurethane elastomeric waterproof membrane

Uses

Anti-corrosion, waterproof and protective membrane for concrete and steel in a wide range of environmental conditions.

Typical applications include:

- Below grade waterproofing
- Waste water tank lining
- Marine environment
- Roof waterproofing
- Landscape & water containment
- Waterparks
- Line striping
- Secondary containment

Advantages

- Very low VOC
- Excellent chemical resistance, thermal stability and UV resistance (some discolouration will occur)
- Very fast turn-around time. The coated substrate can be put into service within an hour
- Excellent impact, abrasion and puncture resistance
- Seamless and monolithic, including field joints
- Significantly enhances the durability of reinforced concrete
- Low permeability values
- Class III membrane - AS4654.1:2012
- Root resistant - PD CEN/TS 14416:2014

Description

Fosroc Polyurea WHE110 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 very long life cycles and high durability.

The system offers excellent surface properties and overall physical properties.

Standards Compliance

Fosroc Polyurea WHE110 has been tested by CSIRO to the requirements of AS/NZ 4654.1:2012 Waterproofing membranes for external above-ground use Part 1: Materials: CSIRO test report SW8555.

Copies of the test report are available from the Fosroc website.

Properties

Typical physical properties @ 21°C unless stated otherwise; 1.5mm nominal thickness

Property	Result
Colour (mixed):	Dark Grey
Solids by Volume:	100%
VOC content:	18.18g / litre (SCAQMD304-91)
Viscosity A component:	650 - 850 cPs @ 25°C
Viscosity B component:	650 - 950 cPs @ 21°C
Density component A:	1.11 kg/L
Density component B:	1.07 kg/L
Volume ratio:	1:1
Bond strength to concrete:	161.47 N (ASTM C794)
Tensile Strength:	14.7 MPa (AS4654.1-2012 Appendix B)
Tear strength:	79 N/mm (ASTM D624C)
Elongation:	>300% @ 24°C (AS4654.1-2012 Appendix B)
Hardness:	50 Shore D (ASTM D2240)
Abrasion resistance:	170 mg / 1000 cycles; 1kg, H18 wheels (ASTM C501-84)
Water Vapour Transmission Rate:	10.25 g/m²/24h (ASTM E96)
Permeance:	70.39 ng/Pa.s.m²
Water Absorption:	<2% (AS 3558.1)
Root resistance:	No root penetration observed (PD CEN/TS 14416:2014)
Gel time:	5 to 10 seconds
Cure time, walkable:	2 minutes
Trafficable (light):	15 to 20 minutes
Full cure:	24 hours

Application Instructions

Surface preparation

All surfaces should be clean, dry and free from contamination. The surface should 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 (Nitomortar AP) prior to application of Primer.

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Polyurea WHE110

Bare Steel

All surfaces should be grit blasted to meet the requirements of AS1627.4 Class 2½. The lining work should be programmed so that newly cleaned steel is coated before the reformation of rust or scale.

Priming

After preparation, the substrate shall be primed with the appropriate primer

For concrete, apply Nitomortar 903, at an application rate of 250 - 300ml per m^2 or Nitoprime 320PU, at an application rate of 150g per m^2. Nitoprime 320PU is tinted red for ease of control of application thickness.

Broadcast of fire-dried sand is recommended for optimum adhesion properties.

Nitoproof 510 applied at 5m^2/litre is an alternative primer for concrete when the concrete is highly porous.

For steel substrates, apply Nitomortar 903 at a rate of 150ml per m^2.

The primer shall be allowed to become tack free prior to application of Fosroc Polyurea WHE110.

Refer to the Fosroc Polyurea WHE110 Application Guide for further details.

Wall/floor junctions

All wall to wall and floor to wall junctions, internal and external corners, are to be sealed with a polyurethane sealant fillet to accommodate any movement at these junctions.

A coving detail can be formed by the application of a bead of Nitoseal PU250 or Nitoseal PU400 which has been allowed to skin and subsequently covered with 12mm polyethene bond breaker tape before general application of the membrane.

Spray Equipment

A high pressure spray proportioning machine/ spray gun for plural heated polyurea components.

A list of appropriate equipment is listed in the Fosroc Polyurea WHE110 Application Guide.

Application

Product must be applied by specialist applicators experienced in the application of polyurea products.

Do not dilute Fosroc Polyurea WHE110 or associated primers under any circumstances.

Normal recommended minimum applied thickness of Fosroc Polyurea WHE110 is 1.5mm.

Use Fosroc Solvent 10 for the flushing of equipment. If material has been stored for a period of time prior to use, thoroughly mix the Polyurea WHE110 Part B component with a drum mixer until a homogenous mixture and colour is obtained.

Refer to Fosroc Polyurea WHE110 Application Guide for further details.

Application Temperatures

	Minimum	Maximum
Ambient temperature	10°C	45°C
Substrate temperature	10°C	45°C
Relative Humidity	n/a	85%

Spraying Polyurea WHE110 outside of these guidelines may lead to cracking within 24-36 hours of spraying.

Cure Time and Recoat Time

The applied material will become tack-free within 30 to 60 seconds of spraying. Development of a full cure may take up to 24 hours. Material may be recoated when tack-free. Older coatings should be lightly abraded to remove any oxidised material and cleaned thoroughly prior to recoat.

Cleaning

Fosroc Polyurea WHE110 should be removed from tools and equipment with Fosroc Solvent 10 immediately after use. Cured material can only be removed mechanically.

Limitations

It should be noted that Fosroc Polyurea WHE110 is an aromatic polyurea; therefore, as with all aromatics, over a period of time colour change will occur if exposed to UV rays. This will not have any negative effect on the physical properties of the product.

Where an exposed finish is required, a minimum 0.2mm film of Nitoflor PA of the appropriate colour should be applied. This application can be done without any surface preparation if within 6 hours of the Fosroc Polyurea WHE110 application. Between 6 hours and 24 hours, the surface will need to be lightly abraded. Refer to the Nitoflor PA product data sheet.

Disposal Considerations

Cured Fosroc Polyurea WHE110 and cured Nitomortar 903 can be disposed of without restriction. The uncured A and 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 material safety data sheets for all relevant information on Fosroc Polyurea WHE110 Part A and Fosroc Polyurea WHE110 Part B.

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Supply

Polyurea WHE110 Part A 22.5 kg:	FC007090-22.5KG
Polyurea WHE110 Part A 225 kg:	FC007090-225KG
Polyurea WHE110 Part B 20 kg:	FC007091-20KG
Polyurea WHE110 Part B 200kg:	FC007091-200KG
Nitoprime 320PU 20kg:	FC007092-20KG
Nitomortar 903 Part A Base 20 litre:	FC381019-20L
Nitomortar 903 Part B Hardener 10 litre:	FC381018-10L
Nitoproof 510 Part A 10 litre:	FC000625-10L
Nitoproof 510 Part B 10 litre:	FC000626-10L
Fosroc Solvent 10 4 litre: 20 litre:	FC600800-4L FC600800-20L

Yield

Polyurea WHE110 Part A 22.5 kg:	20.2 litres
Polyurea WHE110 Part B 20kg kg:	18.7 litre
Polyurea WHE110 Part A 225 kg:	202 litres
Polyurea WHE110 Part B 200kg:	187 litres

Coverage

Nitomortar 903 as primer:	approx. 4m^2 / litre on concrete
Nitoprime 320PU:	approx. 6.5m^2 / kg on concrete
Nitoproof 510 as primer:	approx. 5m^2 / litre on concrete
Fosroc Polyurea WHE110:	1.0 to 2.0 litres / m^2 depending on specification*

* Note: 1.0 litre/m^2 coverage rate is the minimum and requires a highly experienced operator for even and effective coverage, with a cross-hatch spray pattern.

Normal recommended coverage is 1.5 litres/m^2.

2.0 litres/m^2 rate is the maximum coverage rate for a single coat application.

Storage

Fosroc Polyurea WHE110 has a shelf life of 24 months from date of manufacture if kept in a dry store in the original, unopened drums.

Storage conditions

Store in dry conditions in the original, unopened containers. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

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 a “supplied air” hood.

Fosroc Polyurea WHE110 Part A and Nitomortar 903 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. Please refer to material safety data sheets for detailed information.

FOSROC *construction solutions*

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