



constructive solutions

WATERPROOFING - LIQUID APPLIED

FOSROC POLYUREA SOLUTIONS

Rapid return to service

Fosroc's years of experience in spray-applied polyurea waterproofing has led to the development of a range of products to offer you the best solution for your project.

The Fosroc Polyurea range delivers cost-effective high quality spray applied systems which can achieve rapid return to service times while maintaining long term waterproofing performance.

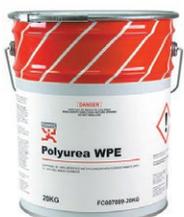
Fosroc Polyurea seamless spray-applied systems possess excellent physical properties making them ideal for many waterproofing and industrial flooring applications.



Fosroc Polyurea WHE110

100% solids, hybrid polyurea-polyurethane elastomeric waterproof membrane.

Typical applications: below grade waterproofing, waste water tanks, roof waterproofing, podium decks.



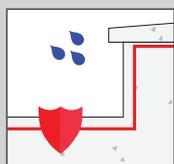
Fosroc Polyurea WPE110

100% solids, pure polyurea elastomeric waterproof membrane. Complies to AS/NZS4020.

Typical applications: below grade waterproofing, potable water tanks, waste water tanks, roof waterproofing, aquariums.

Benefits of Fosroc Polyurea technology

- Rapid return to service – back in service within 1 hour
- Very low VOC
- Spray applied, seamless systems
- High durability
- Remains flexible
- Excellent chemical resistance, thermal stability and UV resistance (some discolouration may occur)
- Excellent impact, abrasion and puncture resistance
- Low permeability values
- Significantly enhances the durability of reinforced concrete



Waterproofing

For further information on our waterproofing range visit www.fosroc.com.au or fosroc.co.nz Always refer to the product TDS before making your final selection or speak to your Fosroc representative.

Polyurea Technology

Polyureas are formed from the reaction of two components, and can be either 'pure' or 'hybrid' depending on the reacting components.

'Pure' polyurea is formed from the reaction of a multi-functional amine (polyamine) and a polyisocyanate. 'Hybrid' polyurea contains a mixture of polyol and multi-functional amine, both of which react with a polyisocyanate and result in a mixture of polyurea and polyurethane in the finished film.

The polyurea content in hybrid systems can vary considerably from 10% to 80%. As the level of polyurea decreases the reaction time slows down, resulting in longer drying times compared to pure polyureas.

Fosroc can supply both pure and hybrid polyurea depending on the project requirements.



Properties

Typical physical properties @ 21°C unless stated otherwise

Property	Polyurea WHE110	Polyurea WPE110
Solids by Volume:	100%	100%
VOC content (SCAQMD 304-91):	18g / litre	11g / litre
Viscosity A component @ 25°C:	650 - 850 cPs	500-600 cPs
Viscosity B component @ 21°C:	650 - 950 cPs	750 - 950 cPs
Density component A:	1.11 kg/L	1.12 kg/L
Density component B:	1.07 kg/L	1.04 kg/L
Tensile Strength (ASTM D412):	21 MPa	15 MPa
Tear strength (ASTM D624C):	79 N/mm	60 - 65 N/mm
Elongation @ 24°C (ASTM D412):	>400%	>350%
Shore D (ASTM D2240):	50	40
Abrasion resistance 1kg, H18 wheels (ASTM C501-84):	170 mg / 1000 cycles	95 mg / 1000 cycles
Water Vapour Transmission Rate (E96-05 (B)):	5.9 g/m ² /24h	4.30g/m ² /24h
Water Absorption (AS 3558.1)	<2%	<1.0%
Cure time, walkable:	2 minutes	2 minutes

Refer to Fosroc Polyurea WHE110 and Fosroc Polyurea WPE110 Application Guide for further details.

Product Selector

This selector is a general guide only, please contact your Fosroc representative for more information.

Typical Application	Polyurea WHE110	Polyurea WPE110
Podiums	■	■
Roof gardens	■	■
Drinking water tanks		■
Cut/Cover tunnels	■	■
Service roofs	■	■
Green roofs	■	■
Stadium stands	■	■
Jetties, piers, wharfs	■	■
Dirty water tanks	■	■
Secondary containment bunds	■	■
Chemical resistance		■
High abrasion resistance	■	■*
Fast cure foot traffic two mins		■*
Carpark decks	■	■*
Heavy duty flooring		■*

*with the use of a UV resistant topcoat.

Other considerations

Colour fade

Fosroc Polyureas are based on aromatic technology, as with all aromatic based products, 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 or longevity of the product.

To protect from colour fade, Polyureas can be overcoated with an opaque colourfast topcoat, this may also provide colour options.

Slip Resistance

Polyureas can be stippled when sprayed to provide some base level of slip resistance. If slip resistance is a priority and a specific rating needs to be achieved, Fosroc Polyureas can be overcoated with Dulux® Luxaflor® PTX with added slip resistant grains.

Polyurea Waterproofing Product Guide

	Polyurea WHE110	Polyurea WPE110
Description	A spray-applied, 100% solids, flexible, two-component, rapid curing hybrid Polyurea-polyurethane system. Designed as a waterproofing and protective coating, it offers seamless coating with very long life cycles and high durability.	A spray-applied, 100% solids, flexible, two-component, rapid curing pure Polyurea system. Designed as an anti-corrosion, waterproofing and protective coating. Suitable for use in potable water applications, complies with AS/NZS 4020-2005.
General Advantages	Rapid cure.	Rapid cure.
Technology	Hybrid Polyurea-polyurethane	Pure Polyurea
Internal / External	Internal & External	Internal & External
Application Type	Vertical / Horizontal	Vertical / Horizontal
Number of Components	Two	Two
Typical Applications	Below grade waterproofing, tank coating, waste water tank lining, marine environment, roof waterproofing, aquarium lining, landscape & water containment, waterparks and secondary containment.	Below grade waterproofing, waste water tank lining, marine environment, roof waterproofing, landscape & water containment, waterparks and secondary containment.
Pack Size	42.5kg & 425kg packs	42.5kg & 425kg packs
Typical Coverage Per Unit	Refer to product data sheet	Refer to product data sheet
Number of Coats	2 passes	2-3 passes
Cure Time (@23°C 50% RH) Unless Otherwise Stated	2 minutes – walkable 20 minutes – trafficable (light)	2 minutes – walkable 20 minutes – trafficable (light)
Elongation	>350%	>350%
Complies With Australian Standards	N/A	AS/NZS 4020-2005
Made In Australia	Yes	Yes
VOC Content; g / litre	Very low <20 g/l	Very low <20 g/l
Colour	Dark Grey	White
Primer	Nitoprime 320 or Nitomortar 903	Nitoprime 320 or Nitomortar 903

Related products

Fosroc Nitoprime 320PU



Nitoprime 320PU is a one component, moisture cure primer for use on concrete in perfect condition prior to the application of Fosroc Polyurea WPE110 and WHE110, to improve adhesion to the substrate. It has been tinted red for easy control of application thickness.

PRODUCT CODE	DESCRIPTION	SIZE
FC000612-UNIT	NITOPRIME 320PU 20KG	20KG

Fosroc Nitomortar 903



Nitomortar 903 is a two-component, low viscosity, solvent free epoxy primer suitable for use with Polyurea WHE110 and WPE110.

PRODUCT CODE	DESCRIPTION	SIZE
FC381019-4L	NITOMORTAR 903 BASE 4L	6L PACK
FC381018-2L	NITOMORTAR 903 HARDENER 2L	
FC381019-20L	NITOMORTAR 903 BASE 20L	30L PACK
FC381018-10L	NITOMORTAR 903 HARDENER 10L	

Bond Breaker Tape



For moving cracks or joints typically larger than 5mm, apply Bond Breaker Tape over the sealant before the polyurea membrane is applied.

PRODUCT CODE	DESCRIPTION	SIZE
FC071061-UNIT	BOND BREAKER TAPE 15MM X 66M ROLL	15MM X 66M ROLL
FC071062-UNIT	BOND BREAKER TAPE 20MM X 66M ROLL	20MM X 66M ROLL
FC071063-UNIT	BOND BREAKER TAPE 25MM X 66M ROLL	25MM X 66M ROLL
FC071064-UNIT	BOND BREAKER TAPE 50MM X 66M ROLL	50MM X 66M ROLL

Fosroc Proofex Detail Strip

A reinforced, double sided waterproof adhesive tape for sealing and jointing roll ends, cut edges and corner pieces. It consists of a strong synthetic fibre fabric impregnated and coated both sides with a bitumen rubber adhesive. Each side of the tape is protected by a removable siliconised paper.

PRODUCT CODE	DESCRIPTION	SIZE
FC007071-UNIT	PROOFEX DETAIL STRIP	200MM X 1.5MM X 10M ROLL

Polyurea application recommendations

Surface preparation

Polyureas can be applied to a wide range of substrates. For concrete, the surface should be clean, dry and free from grease and other contaminants. Curing compounds must be removed.

Large cracks or joints that have been sealed with joint sealant should be taped up with Bond Breaker Tape prior to the application of a polyurea membrane. Fosroc Proofex Detail Strip can also be used with the top face of the tape left in place.

Priming

Substrate must be primed with the appropriate primer to ensure optimum adhesion of the polyurea:

- For concrete in perfect condition and fully cured (28 days), prime with Fosroc Nitoprime 320PU
- Where concrete is damp, or in less than perfect condition (including small static cracks), prime with Fosroc Nitomortar 903
- For structures that need to comply to AS4020, concrete must be primed with Fosroc Nitomortar 903

In addition, broadcast of fire-dried sand is recommended to further enhance adhesion properties. Primer should be allowed to become tack free prior to application of Fosroc Polyurea WHE110 or WPE110.

Equipment

Fosroc Polyurea WPE110 and WHE110 must be applied by experienced specialist applicators using heated, plural component, high pressure airless spray equipment capable of supplying material at the spray gun at a minimum of 2000 psi spray pressure and material temperature of 55-65°C.

Fosroc Polyureas have been successfully sprayed through Graco E-10HP and Graco Reactor E-XP2 machines using Graco Fusion AP and Graco Fusion CS Guns.

Application

Fosroc Polyurea WHE110 and WPE110 must be applied using a high pressure spray proportioning machine/spray gun for plural heated polyurea components. Fosroc Polyureas must not be diluted.

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

For more application details including equipment setup and use, see Fosroc Polyurea WHE110 and WPE110 Application Guides.

Terminating the membrane – sides should be terminated up the walls to prevent water getting behind the membrane.

Do you need an Inspection Test Report (ITP)?

An ITP details the critical points at various stages within a project for scheduled inspections and verifications, to make sure the job is progressing as it should be and according to quality management standards. Work is regularly checked throughout the project with records taken to show that you have adhered to particular standards.

Fosroc does not provide an ITP, it must be provided by an independent third party. Talk to your Fosroc representative for more information.



Processing parameters

Block temperature:	60°C to 70°C
Hose Temperature:	60°C to 70°C
Volume ratio:	1:1
Pressure:	2000 - 2500 psi
Gel time:	5 to 10 seconds
Trafficable (light):	15 to 20 minutes
Post cure:	24 hours

Supply

Description	Recommended coverage	Size	Code
Polyurea WPE110	1.5 L/m ²	Part A 22.5 kg Part B 20 kg	FC007088-22.5KG Part A FC007089-20KG Part B
		Part A 225 kg Part B 200 kg	FC007088-225KG Part A FC007089-200KG Part B
Polyurea WHE110	1.5 L/m ²	Part A 22.5 kg Part B 20 kg	FC007090-22.5KG Part A FC007091-20KG Part B
		Part A 225 kg Part B 200 kg	FC007090-225KG Part A FC007091-200KG Part B



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