Draft Fosroc® Lokfix E75

constructive solutions

Awaiting DoP refs

Description

Pure epoxy 3:1 resin cartridge system, for anchoring reinforcement and fixings into a variety of substrates.

Uses

For concrete (solid, porous and light) and solid masonry.

- Accredited for use in dry, damp and flooded concrete substrates.
- Can be used with cracked concrete
- Fixing of post installed reinforcement
- Anchoring of threaded rod fixings
- Anchoring of internal threaded rod sleeves
- Internal, external and submerged conditions
- Can be applied to almost any size of fixing
- For horizontal, vertical and overhead application
- Bonding and surface crack sealing applications

Advantages

- High Bond strengths
- No additional mixing equipment required
- C1 and C2 seismic resistance*
- Does not apply expansive force to the substrate
- Fixings can be spaced closer together than mechanical anchors
- Enables fixings closer to edges than mechanical anchors
- Resistant to a variety of chemicals
- Low VOC
- Tested with diamond drilled bore holes
- Fire rated up to 2 hours*
- Waterproof, protecting the fixing from corrosion
- Re-usable
- Slow gel times allow for more complex procedures
- 24 month shelf life

*consult test data for specific conditions

Description

Lokfix E75 is a two-component Epoxy anchoring material, supplied in 3:1 ratio side-by-side cartridges , with a static mixer nozzle. When applied it sets and cures rapidly to firmly secure a variety of steel fixings into concrete and solid masonry substrates.

Other grades of Lokfix are also available

Properties

Typical Physical properties @ 23°C	
Solids by Volume	: 100%
Density at 25°C, sprayed film	: 1.0 g/ml
Tensile Strength ASTM D-412	: >9 MPa
Tear Resistance ASTM D624C	: > 30 N/mm
Elongation ASTM D412	: > 600%
Shore -D ASTM D2240	: 40
Impact resistance ASTM D2794	: > 17 N.m
Moisture vapour transmission rate ASTM E96	: < 20 g/m²/day
Abrasion (1kg,CS17 wheels) ASTM D4060	: < 30 mg /1000 cycles
Chemical Resistance ASTM D3912	:Resistance to motor oil, brake fluid, dilute citric and hydro chloric acids, dilute sodium hydroxide. Discolouration may occur, wash down immediately to avoid effects. Contact Fosroc for further advice.

Clarification of property values

The typical physical properties given above are derived from controlled laboratory testing of Fosroc Polyurea WCS, spray or gun-applied in accordance with the Fosroc Polyurea Method Statement.

Results derived from testing field-applied samples may vary dependent on several factors, including the type and condition of equipment utilised, working pressures, application temperatures and weather conditions, film thickness, age of sample tested

Processing parameters for Polyurea WCS application

Fosroc® Polyurea WCS

Recommended product Temperature: + 25°C to +40°C	
Volume ratio	: 1:1
Air Pressure for spray	: 8 - 10 bar
Gel Time	: 1 - 2 mnts
Walkable	: 15 - 20 minutes
Trafficable (light duty)	: 1 - 2 hours
Fully Serviceable	: 24 hours

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

Processing parameters for Polyurea WCS Gun Grade application

Recommended product Temperature :	+5°C to +40°C
Gel time :	1 to 2 minutes
Serviceable:	10 - 20 minutes

Refer to Application section below.

Instructions for Use

Surface preparation

All surfaces must be clean, dry and free from contamination. Metal 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).

Repair work on Fosroc Polyurea

Remove the old coating immediately around the failed area using a sharp tool. All cracks shall be chased to a 5mm x 5mm groove and filled using Fosroc Nitomortar FC/ FCB. The failed area, if due to excessive substrate movement/cracking, should normally be debonded with a continuous strip of Proofex Total Tape prior to Fosroc Polyurea WCS application.

The old polyurea surface should be surface wiped with Fosroc Nitoprime 150 and allowed to completely dry prior to Polyurea WCS application. Polyurea WCS should then be applied to the repair area, with a minimum 100 mm overlap to the old coating.

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 Primer 195, for other surfaces consult Fosroc for advice.

For concrete, suggested application rate is 250ml per m^2; For steel substrates, a suggested rate of 150ml per m^2. 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 WCS. Polyurea WCS Gun Grade application as a seam seal for Proofex Engage does not require a primer as adhesion is obtained by physical interaction with the mesh.

Refer to Fosroc Polyurea Method Statement for full priming details.

Application Equipment

Spray Application – standard grade product.
Fosroc Polyurea WCS pneumatic gun with spray static mixer.

Pour Application – standard grade product.
Fosroc Polyurea WCS manual gun or Fosroc Polyurea pneumatic gun with pour static mixer.

Gun Application – gun grade product.
Fosroc Polyurea WCS manual gun or Fosroc Polyurea WCS pneumatic gun with large diameter pour static mixer.

Note: 1500ml pack sizes must be applied via pneumatic gun

and are not suitable for spraying.

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 WCS, Fosroc Nitoprime 31 or Fosroc Primer 195 under any circumstances.

Prior to using Polyurea WCS grades, thoroughly mix the product by shaking the twin cartridge vigorously until a homogenous mixture and colour is obtained.

Spray Application

For efficient spray application of Polyurea WCS, product should be applied at a temperature in the range 25-40ºC. Warming may be necessary to achieve spray application if the product has been stored at <25ºC.

Place the 600ml cartridge in the pneumatic gun and attach pressure pipes from the air compressor. Recommended pressure for spray application is 8 – 10 bar.

Normal recommended minimum applied thickness of Fosroc Polyurea WCS is 1.0 mm, using cross-hatch spray pattern.

Applied Polyurea WCS can be walked on carefully after approximately 20 mins; is light duty trafficable (e.g. light foot traffic) after approximately 1 - 2 hours, and fully serviceable after 24 hours.

For temperatures below +5^{0}C, longer cure times must be anticipated – contact Fosroc for further advice.

For field/day joints and for applications >12 hours after the previous polyurea coating application, a Nitoprime 150 wipe is required, and allowed to dry prior to fresh polyurea application.

For work on vertical surfaces, recommended maximum applied thickness per coat is 1.0mm to avoid sagging. If a thicker film is required on vertical, allow to cure for 2 hours then apply a further coat as required.

Applied Polyurea WCS can be walked on carefully after approximately 20 mins; is light duty trafficable (e.g. light foot traffic) after approximately 1 - 2 hours, and fully serviceable after 24 hours.

Pour Application

Fosroc Polyurea WCS standard grade can be pour applied using 600ml or 1500ml cartridges with the appropriate size of pneumatic gun or with a manual gun for 600ml cartridges only, fitted with pour static mixer, then tooled quickly as appropriate with a flat-bladed scraper.

Gun Grade Application

Fosroc Polyurea WCS Gun Grade is applied using 600ml or 1500ml cartridges with the appropriate size of pneumatic gun or with a manual gun for 600ml cartridges only, fitted with large diameter pour static mixer, then tooled quickly as appropriate with a flat-bladed scraper or small pieces of Proofex Engage.

Colour Stable Topcoat

If colour stability is required, a minimum 0.2mm film of Fosroc Nitoproof UVR Topcoat of the appropriate colour should be applied.

Nitoproof UVR Topcoat should be applied to clean, dry Polyurea WCS surface within 48 hours of application. If >48 hours has elapsed since Polyurea WCS application, polyurea 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 Method Statement.

Project Log

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

Estimating

Supply:

Fosroc Polyurea WPS

Twin cartridges, 1:1 vol. :	boxes of 6 x 600 ml (twin 300ml cartridges) : boxes of 2 x 1500 ml (twin 750ml cartridges
Manual Gun 600ml	: packs of 1
Pneumatic Gun 600ml	: packs of 1
Pneumatic Gun 1500ml	: packs of 1
Spray static mixer	: packs of 10
Pour static mixer	: packs of 10

Fosroc® Polyurea WCS

Fosroc Polyurea WCS Gun Grade

Twin cartridges, 1:1 vol.	: boxes of 6 x 600 ml (twin 300ml cartridges) : boxes of 2 x 1500 ml (twin 750ml cartridges
Manual Gun 600ml	: packs of 1
Pneumatic Gun 600ml	: packs of 1
Pneumatic Gun 1500ml	: packs of 1
Large diameter pour static static mixer	: Packs of 10

Fosroc Nitoprime 31

Metal continers	: check with Fosroc office

Fosroc Primer 195

Metal, plastic containers	: 0.8 kg, 20 kg packs

Fosroc Nitoprime 150

Plastic containers	: 1 litre packs

Fosroc Nitoproof UVR Topcoat

Plastic containers	: 5 kg, 10 kg packs

Coverage :

Fosroc Nitoprime 31/ Fosroc Primer 195	: see Priming section and refer to Fosroc Polyurea Method Statement
Fosroc Polyurea WCS	: 0.6 m^2 per 600ml pack 1.5 m^2 per 1500ml pack (1mm film) 0.3 m^2 per 600ml pack 0.75 m^2 per 1500ml pack (2mm film)
Fosroc polyurea WCS Gun Grade *	: ca 4m per 600ml pack ca 10m per 1500ml pack
Fosroc Nitoproof UVR Topcoat **	: 16m^2 per 5kg pack (0.2mm film) 32m^2 per 10kg pack (0.2mm film)

* When used as a seam seal for Proofex Engage

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

Estimating

Do not proceed with application if atmospheric relative humidity is >90% or if the surface temperature is <3ºC 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 ≤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 WPE 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. Fosroc Polyurea WPE is not suitable for application where negative water pressure or raising dampness occures.

Technical support

Fosroc offers a comprehensive technical support service to

Fosroc® Polyurea WCS

Storage

Fosroc Polyurea WCS has a shelf life of 12 months if kept in a dry, air conditioned store between +5^{0}C and +30^{0}C in the original unopened containers. Any changes in colour have no negative effect on reactivity and physical properties of the coating.

Limitations

Do not proceed with application if atmospheric relative humidity is >90% or if the surface temperature is <3ºC 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 ≤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.

For spray applications, the product is recommended to be within the optimum temperature range of +25 to +40ºC. This may require the product to be warmed prior to spray application.

If in doubt, contact Fosroc for advice.

It should be noted that Fosroc Polyurea WCS 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. If colour stability is required, apply Nitoproof UVR Topcoat, see Colour Stable Topcoat.

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.

osroc Polyurea WCS, 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 WCS, cured Fosroc Nitoprime 31, cured Fosroc Primer 195 and cured Nitoproof UVR Topcoat can be disposed of without restriction. Uncured Fosroc Polyurea WCS 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 WCS, Fosroc Nitoprime 31, Fosroc Primer 195, Fosroc Nitoprime 150 and Fosroc Nitoproof UVR Topcoat.

Technical support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. Fosroc is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Information

Fosroc manufactures a wide range of complementary products which include:

- waterproofing membranes & waterstops
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialised flooring products

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc"s „Systematic Approach" to concrete repair features the following:

- hand-placed repair mortars
- spray-grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/ anti-chloride protective coatings
- chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc office.

Important note :
Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products whether or not in accordance with any advice, specification, recommendation or information given by it.

BERGER
Trusted Worldwide

Berger Fosroc Limited
Corporate Address:
'Berger House', House # 08, Road # 02, Sector # 03, Uttara Model Town, Dhaka 1230, Bangladesh.
telephone(Hunting) : +880248953665, **fax :** +880248951350,
e-mail : enquiry.bangladesh@bergerfosroc.com, **website** : www.bergerfosroc.com

FOSROC