



constructive solutions

# Fosroc Proofex Engage

Pre-applied waterproofing membrane conforming to the requirements of BS EN 13967:2012 and BS 8102:2009. Freshly poured concrete mechanically bonds to the Proofex Engage, remaining in place even if settlement of substrate occurs

## Uses

Waterproofing and gasproofing membrane for concrete basements, liftpits, car parks and other water excluding structures. Proofex Engage can be used to achieve waterproofing to Grades 1,2 and 3 as defined in BS 8102: 2009.

## Advantages

- Unique mesh system allowing fresh concrete to mechanically bond
- Smart antitracking design prevents water tracking between membrane and concrete
- Simple and quick to install - no protection film to remove
- Basement waterproofing protection to grades 1, 2 and 3 as defined in BS 8102:2009
- Methane and CO<sub>2</sub> protection as defined in BRE Report 212
- Radon protection as defined in BRE Report 211
- BBA certification
- Protects concrete from attack from chemicals, hydrocarbons and aggressive ground salts in contaminated sites
- Simple application - requires no primer or protection, and blinding concrete may be eliminated
- Inert product - no risk of a reaction with ponded water prior to concrete being poured
- Membrane composition gives excellent flexibility for detailing, combined with high durability and toughness for site trafficking.
- Root resistant

## Description

Proofex Engage is a unique patented waterproof membrane system comprising a cell mesh bonded to a blended polyethylene / polypropylene membrane which allows poured concrete to interlock, forming a tenacious mechanical bond.

Proofex Engage provides water, water vapour and gas protection to water excluding structures and protects concrete from aggressive ground salts, chemicals and hydrocarbons.

Proofex Engage is supplied with a self-adhesive seldge along one side of the roll and a comprehensive range of auxillary products.

## Standard compliance

Independently certified performance: BBA certificate No. 03/4042. BRANZ appraised certificate No. 1035(2018).

BS EN 13967:2012 - Flexible sheets for waterproofing- Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet. Type A and Type T.

British Standard 8102:2009 - Code of Practice for 'Protection Of Structures Against Water From the Ground' Classes 1, 2 and 3.

Green Label Singapore Labelling Scheme - approved as "environmentally preferred coating"

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EN 13967:2012 Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic and rubber basement tanking systems	
Class	Type A and Type T
Watertightness	Pass
Resistance to impact	> 1.5m
Dangerous substances	Conforms with 5.17
Resistance to static load	20kg
Elongation at break	L >140%, T >120%
Tensile properties	L >9N/mm <sup>2</sup> , T >7N/mm <sup>2</sup>
Water vapour resistance after ageing	Pass
Resistance to tearing	720N (longitudinal)
Shear resistance of joints	>400N lap
Water vapour properties	Sd = 400m



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## Specification clauses

The waterproof tanking membrane shall be Proofex Engage, consisting of a blended polyethylene / polypropylene membrane incorporating a cell mesh, enabling freshly poured concrete to mechanically bond to the membrane. The membrane shall be supplied with one self-adhesive seldedge and comply with British Standard 8102 2009 - Code of practice for "Protection of Structures Against Water from the Ground" to provide basement waterproofing protection to grades 1, 2 and 3. The product shall comply with the requirements of BS EN 13967:2012, Type A and Type T, "Flexible sheets for waterproofing- Plastic and rubber damp proof sheets including plastic and rubber basement tanking." The product shall have a current British Board of Agrément Certificate.

## Properties

Test method	Standard	EN13967 Requirement	Result
Watertightness to liquid water	EN 1928 Method A	No evidence of water penetration @ 6 m head	Pass. Also ASTM D5385 passed at 69m
Resistance to static loading	EN 12730 method B	-	20kg
Tensile properties (membrane sheet only): Tensile strength/ elongation at break/ elongation at peak load	EN 12311-2	-	Transverse: >10 MPa / >600% / >600% Longitudinal: >18 MPa / >800% / >800%
Tensile properties (composite sheet plus mesh): Tensile strength*/ elongation at break/ elongation at peak load	EN 12311-2 * Tensile strength based on sheet thickness	-	Transverse: >7 MPa / >120% / >15% Longitudinal: >9 MPa / >140% / >50%
Crack bridging	ASTM C1305 modified	-	up to 5mm (100 cycles)
Durability of watertightness against ageing	EN 1296 / EN 1928	-	Pass
Resistance to impact Puncture resistance Resistance to roots	EN 12691 Method A ASTM E154-08 EN/TS 14416	-	1500 mm. 672N Pass
Resistance to tear (nail shank)	EN 12310-1	-	720 N (longitudinal)
Reaction to fire	EN ISO 11925-2	-	Pass
Lapped joint strength	EN 12317-2	-	≥400 N
Water vapour transmission	EN 1931	-	Water vapour resistance factor u = 580000 Equivalent air layer thickness S <sub>d</sub> = 400 metres
Resistance to alkali	EN 1847 / EN 1928	Watertight at 2kPa at 60kPa	Pass Pass
Length x width Length x width Thickness Mass Straightness Visible defects	EN 1848-2	-	30m x 1.27m 33.1m x 1.15m 4 – 5mm overall 1.54 kg/m <sup>2</sup> <75 mm per 10 metre length Free from visible defects
Methane permeability	BS ISO 15105-1:2007	-	127ml-m <sup>2</sup> -day <sup>-1</sup> -atm <sup>-1</sup> (unjointed)
CO <sub>2</sub> permeability	Rilem Report 12	-	<5.12 E <sup>-13</sup> m <sup>2</sup> /sec/Pa

**Clarification of property values:** The typical properties given above are derived from laboratory testing. Results derived from field applied samples may vary.



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## Application instructions

### Substrate Preparation

Horizontal application - the membrane must be applied to smooth, prepared substrate. Concrete blinding is preferred but a well compacted granular fill is acceptable for a level subbase. The substrate shall be free from loose aggregate or other sharp protrusions. Standing water must be removed to prevent contamination of overlaps and subsequent compromise of waterproof properties.

Vertical application - the membrane is applied to temporary or permanent formwork or adjoining structures.

Proofex Engage must not be applied directly onto contiguous or secant piled walls. A plywood sacrificial shutter or spray concrete finish should be used prior to application.

### Membrane installation

Cut the membrane to a convenient length for installation. Carefully align the membrane and roll it out with the ribbed surface uppermost. Lay adjacent sheets accurately so they overlap the previous sheet and butt net to net along the adhesive selvedge. Ensure that the underside is clean and dry prior to adhering to selvedge. When laying adjacent full rolls there should be a stagger of half a roll length to avoid a build up of end joints in one area.

End joints and cut edges - Butt join the Proofex Engage sheets onto Proofex Engage Detail Strip. The top surface of the join can be further sealed with a 40mm wide strip of Fosroc Polyurea WCS GG (extending a minimum of 20mm either side of the formed joint), refer to separate datasheet. Proofex Engage Fix is 8.0mm and Min. width of 40mm, using manual trowel pattern application, tooled quickly as appropriate with a flat-bladed scraper or small pieces of Proofex Engage membrane back side. Or a 100mm wide strip of Proofex LM reinforced with Proofex LM Mesh.

Horizontal to vertical joints - Lap Proofex Engage onto Proofex "L" section and overseal with a 40mm wide strip of Fosroc Polyurea WCS GG (extending a minimum of 20mm either side) or a 40 mm fillet of Proofex LM which may be reinforced with Proofex LM mesh.

All overlaps and joints should be clean and dry and firmly rolled to ensure complete adhesion between layers.

Remove all release tapes with a short sharp pulling action, especially in hot weather.

If cold or damp conditions prevail the selvedge adhesive, Proofex Engage Detail Strip and Total Tape may be tackified by gently warming.

### Removal of formwork

Where the membrane has been applied to removable shuttering it is recommended that a minimum concrete compressive strength of 10 N/mm<sup>2</sup> is reached before the formwork is stripped.

### Penetrations

Penetrations e.g., pipe entries through Proofex Engage, require special attention to detail. Proofex Top Hat units used in conjunction with Proofex Total Tape and Nitoseal MS60 are recommended. Refer to Fosroc for more information on details.

### Backfilling

Backfilling material must be free from sharp objects and debris that could damage the Proofex Engage. It should not contain house bricks, blocks or boulders larger than 50 mm.

### Contaminated ground

Proofex Engage is suitable for use in many contaminated ground applications eg hydrocarbons, salts etc. Consult local Fosroc office for specific advice.

### Ancillary products

#### Proofex LM

A two component trowelable membrane for sealing around intricate details such as pipe entries, penetrations, pile caps, etc.

#### Proofex corner pieces

125 mm internal and external corner pieces made from polyethylene membrane with a 100 mm butyl selvedge.

#### Proofex "L" section

This 10 m long x 250 mm wide section of polyethylene has 2 butyl selvedge strips. It is used by bending at 90° along its length for application between horizontal and vertical membrane to provide waterproofing continuity and it also connects with internal and external corner pieces.

Proofex "L" section is supplied with a butyl "closure" strip at each end, if the "L" section is cut this strip must be replaced with Proofex Engage Detail Strip or Total Tape.

#### Proofex Engage Detail Strip

A 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 rubber bitumen adhesive, which is protected by a removable siliconised paper.

#### Proofex LM Mesh

A reinforced mesh used in conjunction with Proofex LM for areas of extreme loading (covings, edges and pipe penetrations).

#### Proofex Top Hat

Waterproof pipe entry consisting of polyethylene / polypropylene membrane, which includes an aluminium foil layer.

#### Proofex Total Tape

To adhere Proofex Top Hats to Proofex Engage and as a closure strip to Proofex "L" section.



# Fosroc Proofex Engage

## Nitoseal MS60

To seal between Proofex Top Hat and penetration pipe

## Fosroc Proofex Engage FIX

To seal between joints in Proofex Engage, around pile caps etc

## Fosroc Polyurea WCS Gun Grade

To seal between joints in Proofex Engage, around pile caps etc

## Fosroc Proofex Welding Rod

To seal overlaps in Proofex Engage whenever necessary

## Estimating

### Proofex Engage

Roll size: 1.27m x 30m OR 1.15m x 33.1m

Coverage: 38.10m<sup>2</sup>

Roll weight: 58kg

### Proofex "L" section

Roll size: 125mm x 125mm x 10 m

### Proofex Engage Detail Strip

Roll size: 200mm x 10m x 1.5mm

### Proofex LM

Pack size: 28kg

Coverage: 7m<sup>2</sup> (at 4 mm thick)  
20 linear metres for a 40mm fillet

### Proofex LM Mesh

Dimensions: 100mm x 50m (nominal )

### Proofex Top Hat

Diameter: 110mm 160mm  
330mm x 330mm 380mm x 380mm

### Proofex Total Tape

Dimensions: 30mm x 30m

### Nitoseal MB175

Pack size: 20ltr

Coverage: 25m for a 40mm fillet

## Nitoseal MS60

Supply: 380ml cartridge in boxes of 20

## Fosroc Proofex Engage FIX

Pack Size: 1 ltr

Coverage: ca. 3.12m per 1000ml pack  
@8.0mm x 40mm

## Fosroc Polyurea WCS Gun Grade

Pack Size: 600ml (2x300ml dual cartridge)

Coverage: Nominally 3 lin m (60mm wide)

## Fosroc Proofex Welding Rod

Pack Size: 2kg

Coverage: Nominally 40 lin m

## Storage

Store in original unopened packaging, in cool dry conditions, away from sunlight, in a flat position.

Proofex "L" section should be stored vertically as supplied, in cool dry conditions. Do not distort or crush the coil.

## Limitations

For cold weather working below +5°C, Proofex Engage can normally be applied if the following additional measures are taken; apply heat using a hot air blower to all adhesive tapes, store all materials in heated conditions and mix Proofex LM in heated conditions. In some cases a heated tented working area should be used especially where Proofex LM and Proofex self-adhesive membranes are used. Normal precautions for winter working should be adopted when placing concrete.

For high temperature/humidity climates please contact your local Fosroc Office for project specific method statements. During installation the membrane should not be left exposed for more than 6 to 8 weeks.

## Precautions

Health and safety

Proofex Engage weighs approximately 60kg and should be lifted by a minimum of three site operatives.

For further information refer to appropriate Product Safety Data Sheets available at [www.fosroc.com](http://www.fosroc.com)



### 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 latest version.

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