



Fosroc Waterproofing Proofex Engage

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constructive solutions

ABOUT FOSROC INTERNATIONAL

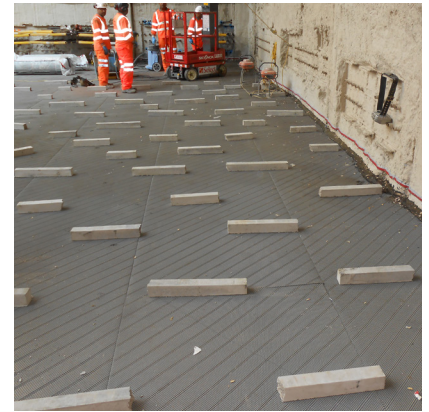
Since the company's beginnings over 80 years ago, Fosroc has developed into an International leader in delivering Constructive Solutions for projects across a broad range of market segments including transport, utilities, industrial and general buildings.

Fosroc's commitment to customer service and technical support is second to none. We work closely with architects, structural engineers, contractors and owners to best understand their requirements. Together we can develop a bespoke solution for a construction project, adding value and becoming more than just a materials supplier, but a solution provider.

Fosroc has an extensive network of offices and manufacturing locations across Europe, the Middle East, India, North and South Asia, and is further represented in other regions across the world by distributor and licensee partners.

Selecting from the full portfolio of Fosroc products and services and integrating expert technical support, world class customer service and innovation, Fosroc goes beyond just product selling to ensure that we partner with our customers to deliver complete constructive solutions.

- > Admixtures
- > Adhesives
- > Protective Coatings
- > Concrete Repairs
- > Industrial Flooring
- > Grouts & Anchors
- > Joint Sealants
- > Surface Treatments
- > Grinding Aids
- > Waterproofing



Leader in delivering
Constructive Solutions
Worldwide!



FOSROC DELIVER SOLUTIONS NOT JUST PRODUCTS

CAD Details

A library of standard CAD details are available, bespoke CAD details can be created for your specific project

Project Specifications

Dedicated specification managers on hand to assist with correct system choices and tailored solutions

Site Support

Expert product and application support made available from our specialist teams.

Seminar & Training

Comprehensive programme of seminars and training courses designed to expand and reinforce your knowledge.

PROOFEX ENGAGE

TYPE A WATERPROOFING

The Proofex Engage system is proven technology and has successfully waterproofed millions of sqm of below-ground structures since its launch. It can be found in projects in many countries around the world and is quite simply one of the best performing cost-effective below-ground waterproofing solutions available today.

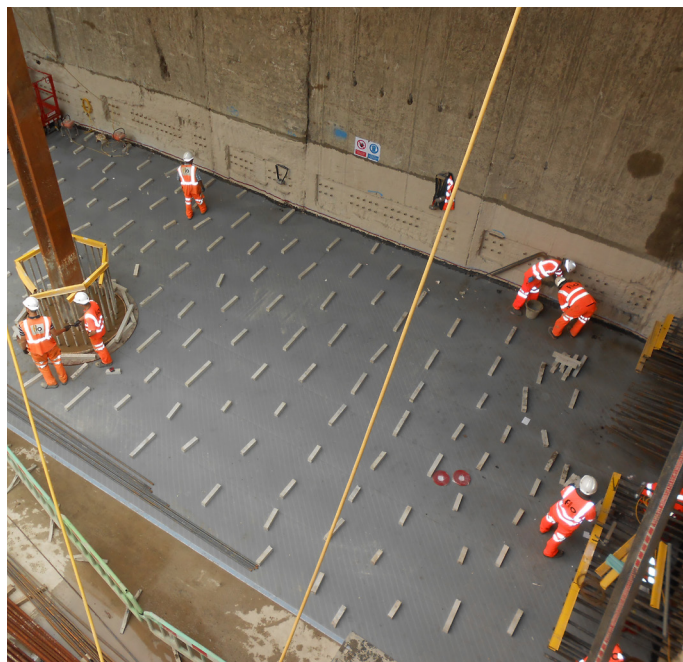




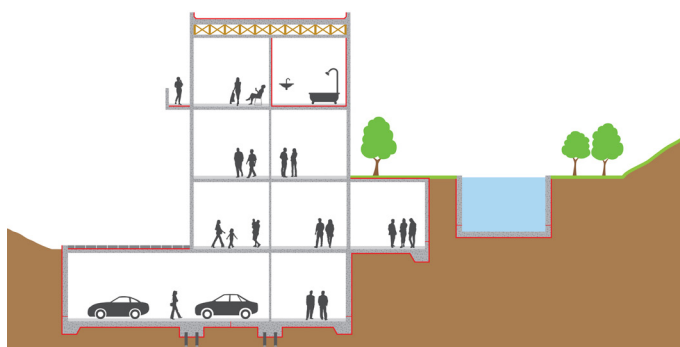
BELOW-GROUND WATERPROOFING

For below-ground structures where the exterior face of the structural concrete is inaccessible, the waterproofing must be applied prior to pouring the concrete. Conventional systems are either loose-laid or self-adhering to the substrate not the structural concrete, this means there is no seal between the waterproofing and the structural concrete which can lead to water migrating between the waterproofing and the structure as a result of any imperfections in the waterproofing installation. BS8102:2009 highlights this problem and recommends that a fully-bonded pre-applied waterproofing system be used to mitigate this risk. A similar problem occurs where ground settlement takes place.

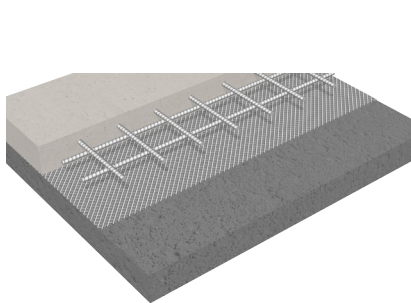
Fosroc have developed an innovative system, **Proofex Engage**, which incorporates a unique cell mesh which mechanically bonds to freshly placed concrete giving a tenacious waterproof seal, preventing water migration even if ground settlement occurs. It is installed rapidly with no need for blinding concrete, priming or protection and can be trafficked immediately after application. It is also a gas barrier, highly durable and is unaffected by contaminants within the ground. Quality is assured through BBA and EN13967:2004 and the system is suitable for use in accordance with BS8102:2009 Grades 1, 2 and 3.



- Rapid installation - no blinding concrete or protection required.
- Assured watertight integrity even in the event of ground settlement.
- No water-tracking.
- Easy jointing and compatible full range of ancillaries.
- Integrity assured at pile heads.
- Excellent solution for precast concrete.
- Protects structure against ground contaminants.
- Long term watertight durability.

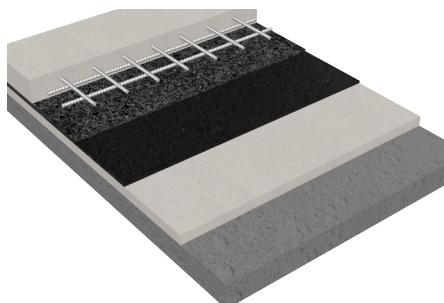


PROOFEX ENGAGE SAVES TIME & MONEY



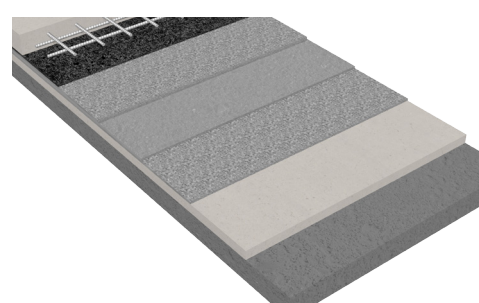
Proofex Engage pre-applied premium waterproofing system

- Structural concrete
- Steel reinforcement
- Proofex Engage membrane



Self-adhesive waterproofing system

- Structural concrete
- Steel reinforcement
- Screed or board protection
- Self-adhesive membrane
- Blinding concrete



PVC waterproofing system

- Structural concrete
- Steel reinforcement
- Screed or board protection
- Geotextile
- PVC loose laid membrane
- Geotextile
- Blinding concrete

BS8102:2009

The BS8102:2009 standard for waterproofing below-ground structures, gives recommendations and provides guidance on methods of dealing with and preventing the entry of water from surrounding ground into a structure below ground level. Designers are encouraged to follow a process chart, to ensure that the correct waterproofing system will be selected. Some of the recommendations are highlighted below;

- To help mitigate risk, specify a combination of various types of compatible protection sourced from the same manufacturer.
- Where a waterproofing barrier is required for a structure supported on piled foundations, special consideration should be given to the detailing so that structural continuity is not compromised.
- Strategies for dealing with groundwater, soil gases and contaminants should be considered from the earliest stages of the planning and design processes.
- Products that are both water and gas resistant are more cost-effective.
- Where waterproofing admixtures are used, these should be in conjunction with other waterproofing components supplied by the same manufacturer, e.g. waterstops, membranes and sealants.
- Fully bonded systems allow potential defects to be located and made good more easily.
- Each project structure should be designed to its particular Grade



Grade	Example of use of structure	Performance level
1	Car parking; Plant rooms (excluding electrical equipment); Workshops.	Some seepage and damp areas tolerable, dependent on the intended use. Local drainage might be necessary to deal with seepage.
2	Plant rooms and Workshops requiring a drier environment (than grade 1); Storage areas.	No water penetration acceptable. Damp areas tolerable; ventilation might be required.
3	Ventilated residential and commercial areas, including offices, restaurants etc ; Leisure centres.	No water penetration acceptable. Ventilation, dehumidification or air conditioning necessary, appropriate to the intended use.

One, or a combination, of the following types of waterproofing protection should be selected:

Type A Barrier protection

Protection against water ingress which is dependent on a separate barrier system applied to the structure.

Type B Structural integral protection

Protection against water ingress which is provided by the structure.

Type C Drained protection

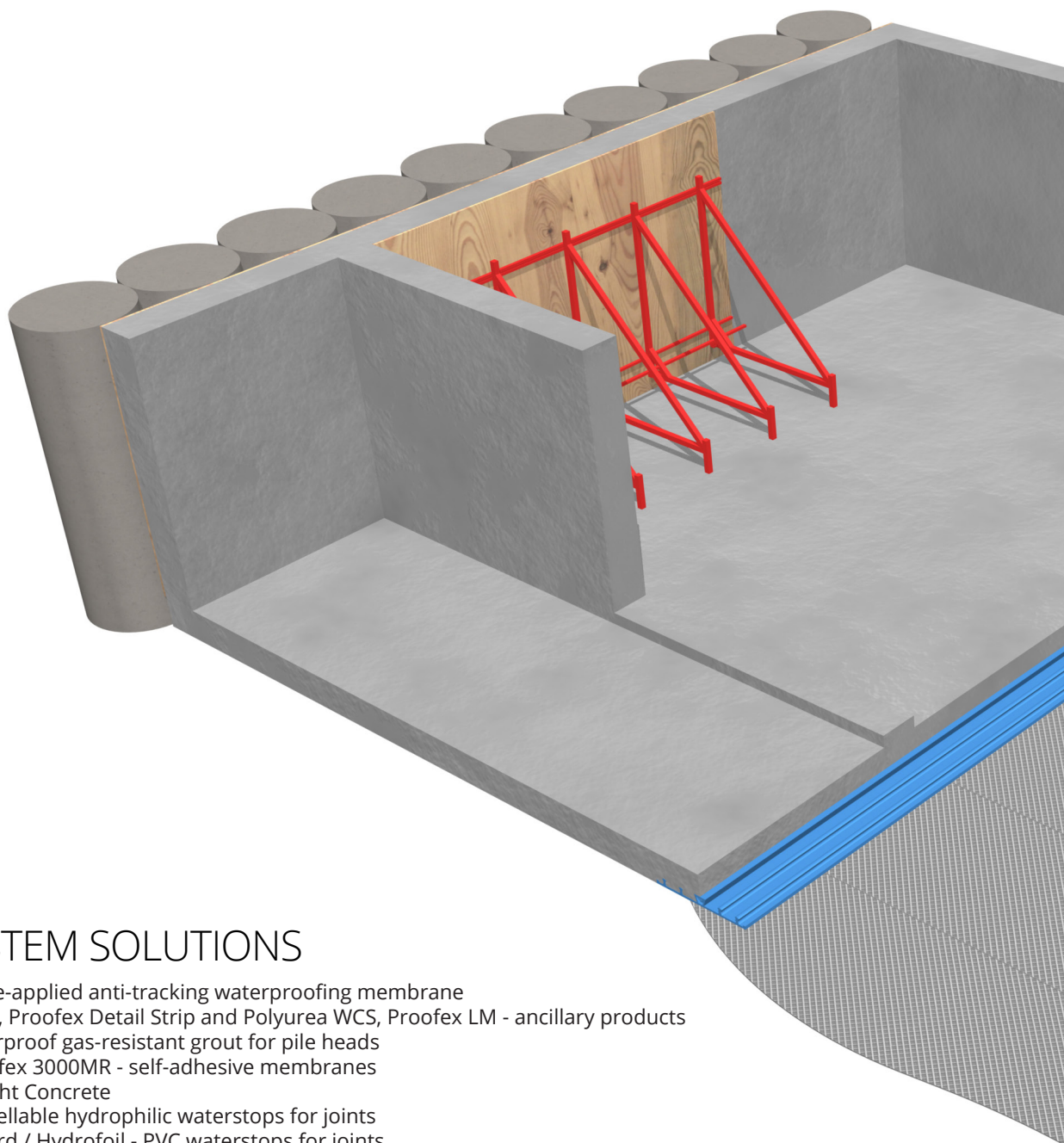
Protection against water ingress into usable spaces which is provided by the incorporation of an appropriate internal water management system.



Proofex Engage is an excellent choice for fully-bonded Type A barrier protection for below-ground structures for basement Grades 1, 2 and 3. It is fully compatible with Type B Supercast Watertight Concrete incorporating Supercast Waterstops, and Type C Proofex Cavitydrain internal drainage systems, assuring best system performance sourced from the one supplier.



FOSROC BELOW WATERPROOFING



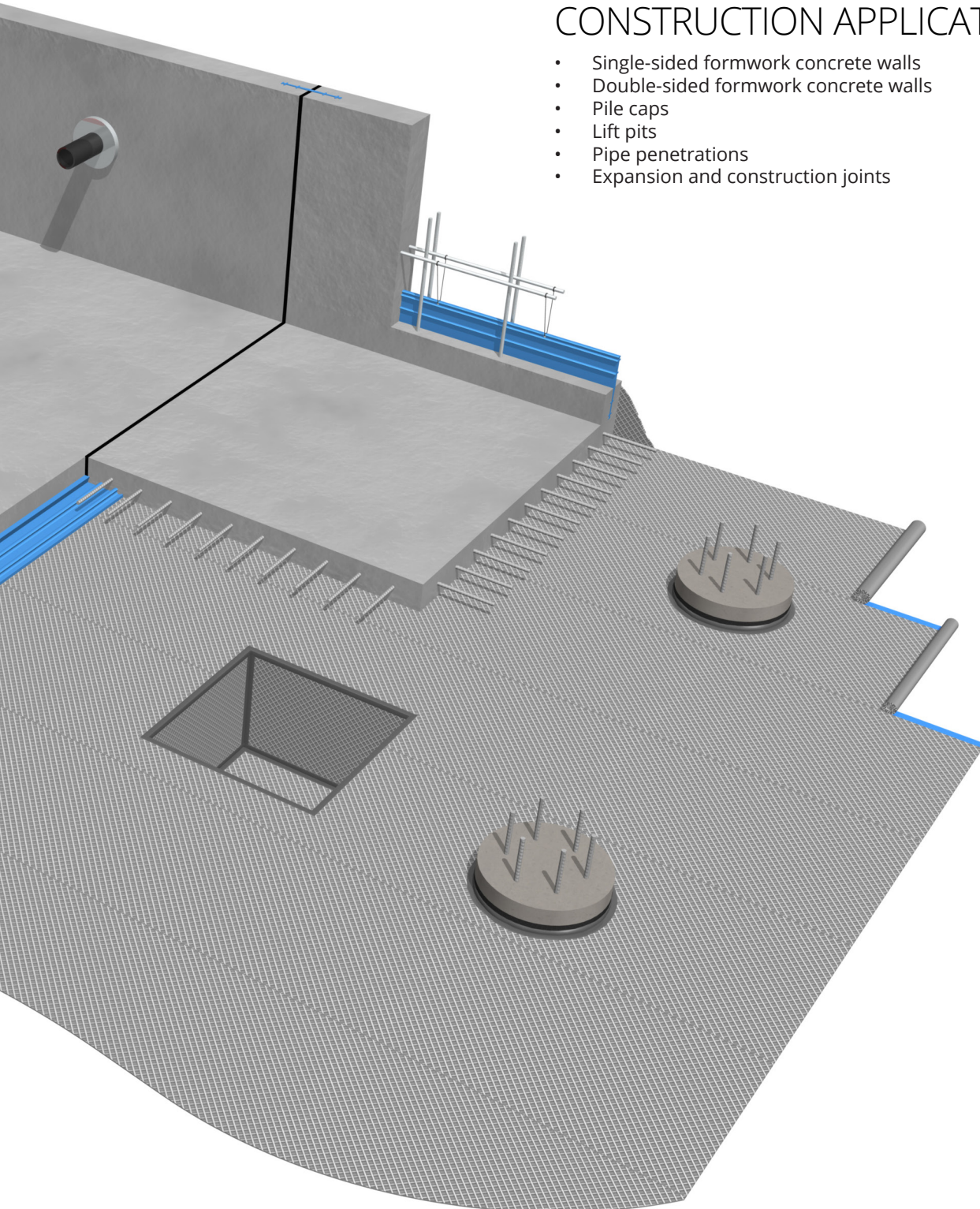
FOSROC SYSTEM SOLUTIONS

- Proofex Engage pre-applied anti-tracking waterproofing membrane
- Proofex "L" Section, Proofex Detail Strip and Polyurea WCS, Proofex LM - ancillary products
- Proofex WG - waterproof gas-resistant grout for pile heads
- Proofex 3000/Proofex 3000MR - self-adhesive membranes
- Supercast Watertight Concrete
- Supercast SW - swellable hydrophilic waterstops for joints
- Supercast Rearguard / Hydrofoil - PVC waterstops for joints
- Supercast Twinstop - composite PVC and Hydrophilic waterstop for joints
- Supercast Predimax - reinjectable hose system for joints
- Nitocote EP405 - waterproof gas-resistant liquid applied membrane
- Nitoseal MS300 - one-component flexible sealant for joints
- Hydrocell XL - rot-proof non-absorbent filler board for joints
- Conplast and Structuro - concrete admixtures
- Auramol - mould release agents
- Fosroc Cure B - spray applied curing agent

LOW-GROUND ING SOLUTIONS

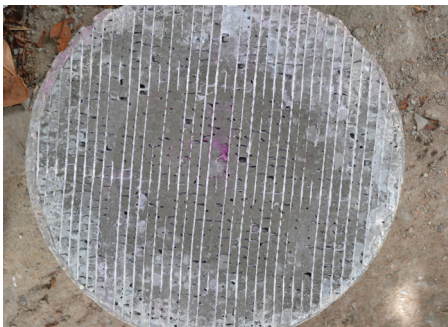
CONSTRUCTION APPLICATIONS

- Single-sided formwork concrete walls
- Double-sided formwork concrete walls
- Pile caps
- Lift pits
- Pipe penetrations
- Expansion and construction joints



PROOFEX ENGAGE BENEFITS

NON WATER-TRACKING

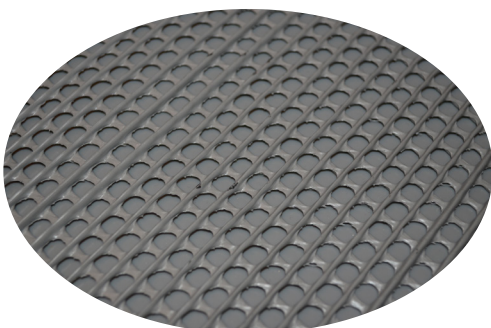


In the unlikely event of damage to the membrane during installation, the smart anti-tracking mesh design of Proofex Engage will prevent water tracking between the membrane and the concrete.

Proofex Engage has been tested to ASTM D5385 and shows no lateral water migration when tested at 70m hydrostatic water pressure.

This high performance means that any installation defects remain localised and are more easily remediated

STRONG MECHANICAL BOND TO STRUCTURAL CONCRETE

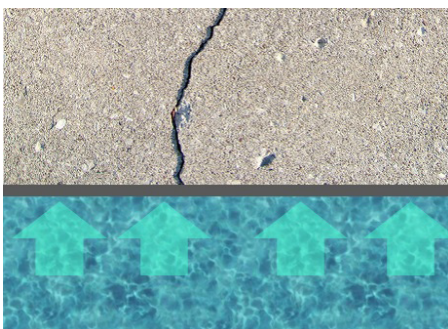


The unique mesh design of Proofex Engage gives a permanent tenacious mechanical bond to freshly placed concrete. It will remain in place, fully bonded to the structural concrete assuring complete waterproof integrity, even if ground settlement occurs.

This bond is not dependent on any chemical reaction and can be assured each time concrete is cast.

The heavy-duty mesh design and properties result in a robust, proven membrane which is ideally suitable for project conditions. The membrane is easily cleaned prior to the concrete pour.

CRACK BRIDGING ABILITY

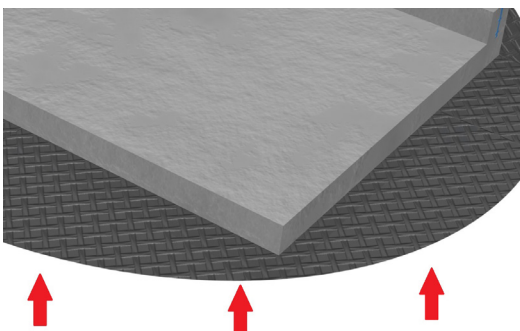


It is common for cracks to form in concrete base slabs and retaining walls as a result of settlement or curing shrinkage.

With fully bonded pre-applied membranes there is a risk that any cracks that form in the concrete will be reflected through the membrane. However independent tests have shown that Proofex Engage maintains full waterproofing integrity.

When tested in accordance with ASTM C1305 (modified) there was no failure in the membrane with an extension of up to 5mm through 100 cycles

HELPS PROTECT AGAINST INGRESS OF GROUND GAS



Ground gases such as radon, methane and carbon dioxide can penetrate into a building from landfill and naturally occurring sources.

Proofex Engage can be used as part of a gas protection solution conforming to BS 8485:2015.

NO BLINDING CONCRETE REQUIRED



Blinding concrete is preferred, however Proofex Engage can be placed directly on top of a well compacted smooth granular fill substrate.

Elimination of the blinding concrete results not only in less concrete and reduced labour time, but also means fewer concrete truck movements which saves time and money and is also more environmentally friendly.

NO MEMBRANE PROTECTION REQUIRED



Proofex Engage is a robust, heavy duty membrane with millions of square metres already installed in projects throughout the world.

The structural steel reinforcement is laid directly on top of the membrane ready for the structural concrete placement.

There is no requirement for screed protection which saves valuable time and money.

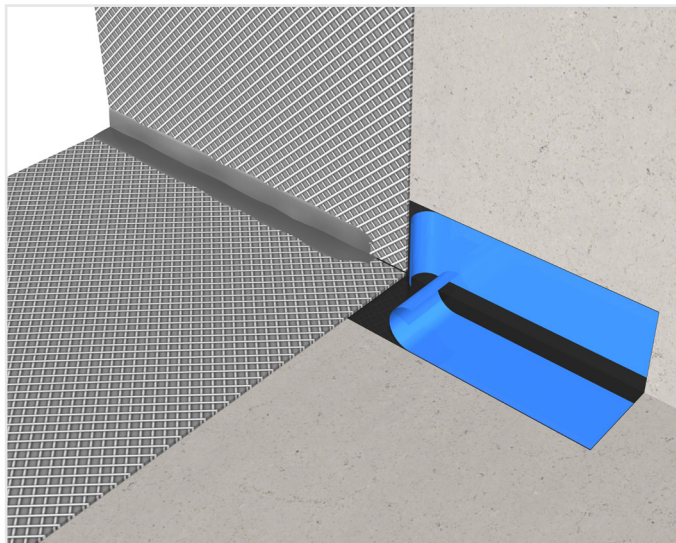
BENEFITS TO OWNER / DESIGNERS

An ever increasing level of importance is being placed by owners and designers with regards to structural integrity, cost-effectiveness and durability. Fosroc recognise this, and Proofex Engage with its proven history, excellent holistic cost benefits and independent certification offers an unparalleled system solution for below-ground structures to meet these demands. It provides owners, clients and designers with a high performance system backed by excellent customer/technical service delivered through a comprehensive international supply network.

BENEFITS TO CONTRACTORS / INSTALLERS

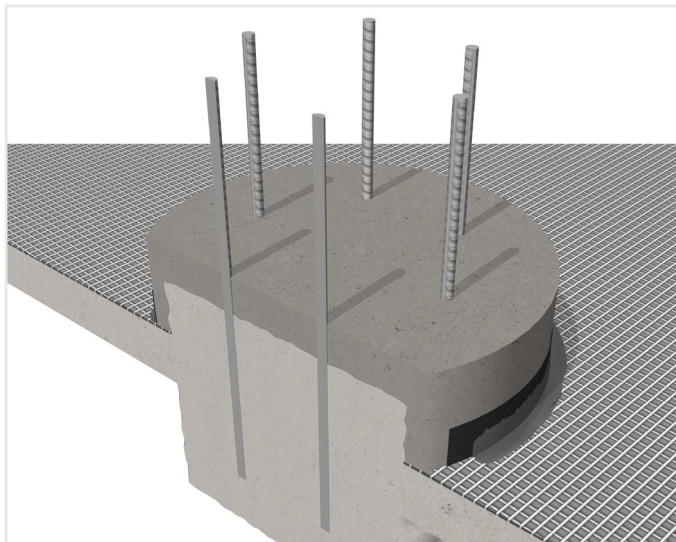
Proofex Engage is designed for typical site conditions. It is heavy duty, robust and can be rapidly installed, with easy to apply jointing ancillaries which are system-compatible. The system has a proven track record and Fosroc can offer on-site training assistance for specific projects, delivered through local experts. Contact your local Fosroc office for more details.

TYPICAL DETAILS



Floor/Wall transitions are easily achieved using Proofex "L" Section rolls. The release film is peeled off leaving a sticky butyl adhesive on to which the Proofex Engage is attached.

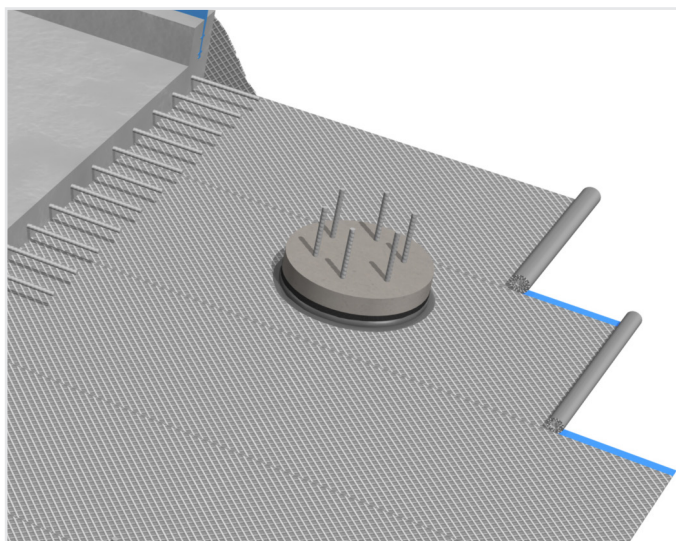
The seal is completed with a seam of Polyurea WCS or Proofex LM.



Pile Head waterproofing integrity is critical in deep basement construction and careful attention must be given to ensure that no leakages occur.

The Fosroc solution has proven successful over a number of years with Proofex WG high strength waterproof grout combining structural integrity over the pile head and waterproofing continuity with the Proofex Engage

The free-flowing grout forms a secure connection with the mesh of the Proofex Engage. The seal is complete with a seam of Polyurea WCS or Proofex LM.



Lapping of Proofex Engage is simple. Along the length of each roll there is a selvage strip consisting of a release film and a sticky butyl adhesive.

The release film is peeled off and adjacent rolls are laid on top of the butyl adhesive.

At roll ends the Proofex Engage is butted together on a strip of Proofex Detail Strip then sealed with a seam of Polyurea WCS or Proofex LM.

FOSROC PRODUCT SYSTEMS

A successful, fully waterproof below-ground structure complying to the recognised standards, can only be delivered through holistic design of a complete system. Inappropriate interfaces, poor installation, and inadequate product selection can create weak points that are expensive to correct. The Fosroc systems-based approach is essential in creating and maintaining structural durability and assured internal protection against water, gases and other contaminants for below-ground structures.

Fosroc's comprehensive range of below-ground waterproofing products are innovative, high quality and have been developed as compatible systems to help reduce the risk of basement leakages. Dedicated specification managers, fluent in the content of BS8102:2009 are available to give you technical support and to guide you through the various system options for your specific project.

SUPERCAST WATERTIGHT CONCRETE (TYPE B WATERPROOFING)

Effective watertight concrete construction requires attention to be paid to the design of the concrete mix, reinforcement and joints so that the structure is resistant to the ingress of water through capillaries, cracks and joints.

Supercast Watertight Concrete is a concrete with hydrophobic, pore blocking properties suitable for use in Type B (Integral) watertight concrete construction and forms part of Fosroc's full range of waterproofing solutions compliant with BS8102:2009.

Joint waterproofing is achieved through the use of cast in PVC profiles, swellable strips and re-injectable hoses. The solution may require the use of one or more of these options depending on the type and location of the joint.

Supercast SW swellable strips are the most widely used form of watertight concrete joint waterproofing with Supercast SW20 used in construction joints and Supercast SWX in penetration details. All Supercast SW products are manufactured from base polymer technology providing class-leading wet/dry cycling and hydrostatic pressure vs time performance giving assured long term watertight integrity.

Supercast PVC profiles are typically used in movement joints having a centre bulb that accommodates expansion / contraction / shear movement without loss of integrity. For critical applications and extra protection, Fosroc have developed Supercast Twinstop, a composite PVC / swellable waterstop which utilises both technologies.



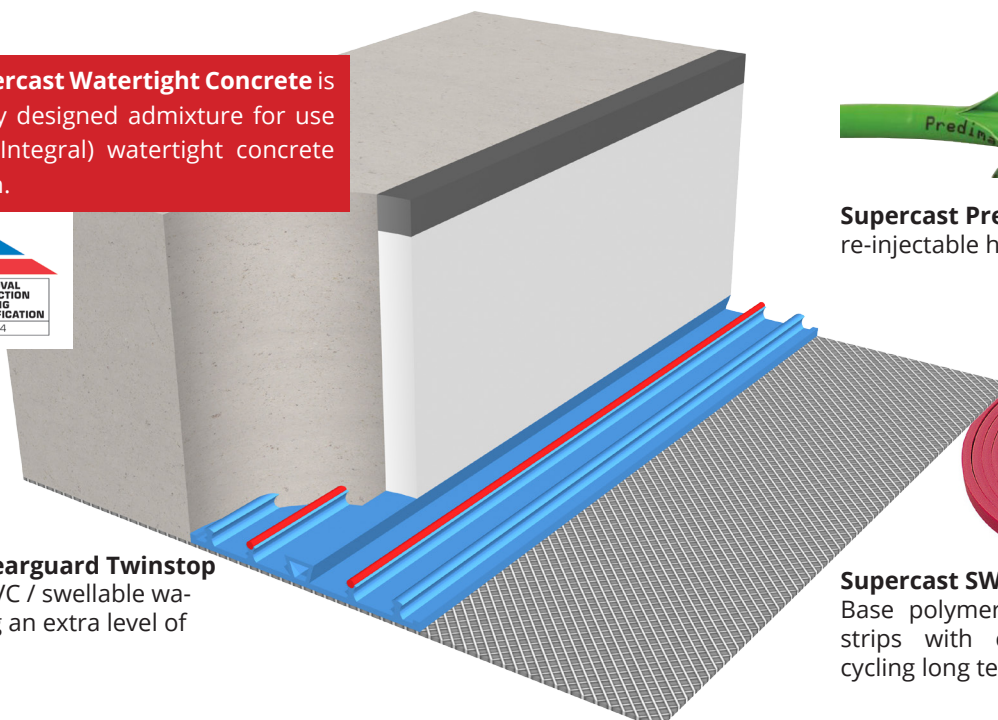
The **Supercast Predimax** re-injectable hose system is typically cast into construction joints to facilitate the multiple injection of water-stopping injection resins either as part of the construction process or as a built in remedial measure.

Fosroc Supercast Watertight Concrete is a specifically designed admixture for use in Type B (Integral) watertight concrete construction.



Supercast Predimax
re-injectable hose system

Supercast Rearguard Twinstop
Composite PVC / swellable waterstop giving an extra level of protection.



Supercast SW 10 / 20
Base polymer swellable waterstop strips with class-leading wet/dry cycling long term performance.

PROOFEX DRAINAGE MEMBRANES

INTERNAL DRAINAGE - TYPE C WATERPROOFING



The **Proofex Cavitydrain** product range is used to waterproof below ground structures where Type C (Drained Cavity) protection is required either as the sole protective measure or in conjunction with Type A (Barrier) or Type B (Integral) waterproofing to achieve the required grade of protection in accordance with the recommendations of BS8102-2009.



The Proofex Cavitydrain System has a full range of ancillary items including sumps and pumps.



Proofex Cavitydrain 80
- vertical applications



Proofex Cavitydrain 200 - horizontal applications



Proofex Cavitydrain PB - allows direct application of wet lining systems



Sump chambers each containing twin pumps linked to a high level alarm and battery back-up system



Channels, outlets and inspection / flushing ports

EXTERNAL DRAINAGE & PROTECTION

Where sub-surface drainage is deemed necessary to lower the potential for hydrostatic pressure on the waterproofing system and lessen the risk of water ingress through defects, it can be provided by means of an externally placed HDPE geosynthetic drainage membrane. **Proofex Sheet drain 80 and 100** can provide up to 3.5L/s/m water flow capacity and are suitable for soil depths up to 20m.

- Cost effective - no need for up to 500mm thick stone drainage layer behind retaining walls.
- Easy site application.
- Reduced environmental impact - no need for vehicular removal and transportation of spoil off site and subsequent replacing with expensive stone drainage layer.
- Secondary waterproofing.
- Protection to the main waterproofing.
- Single solution for both drainage and protection.





DETAIL DRAWINGS

Standard detail drawings are available for the Proofex Engage system, covering the typical construction methods encountered in below-ground waterproofing projects.

Should you require bespoke detail drawings for your project then please contact your local Fosroc office where we can put you in contact with one of our local specification managers.

SPECIFICATION / SPEC CLAUSES

Full specification clauses are available for below-ground waterproofing with the Proofex Engage system, including waterstops, pile cap grouting and ancillaries.

Specification can be generated in performance and NBS formats.

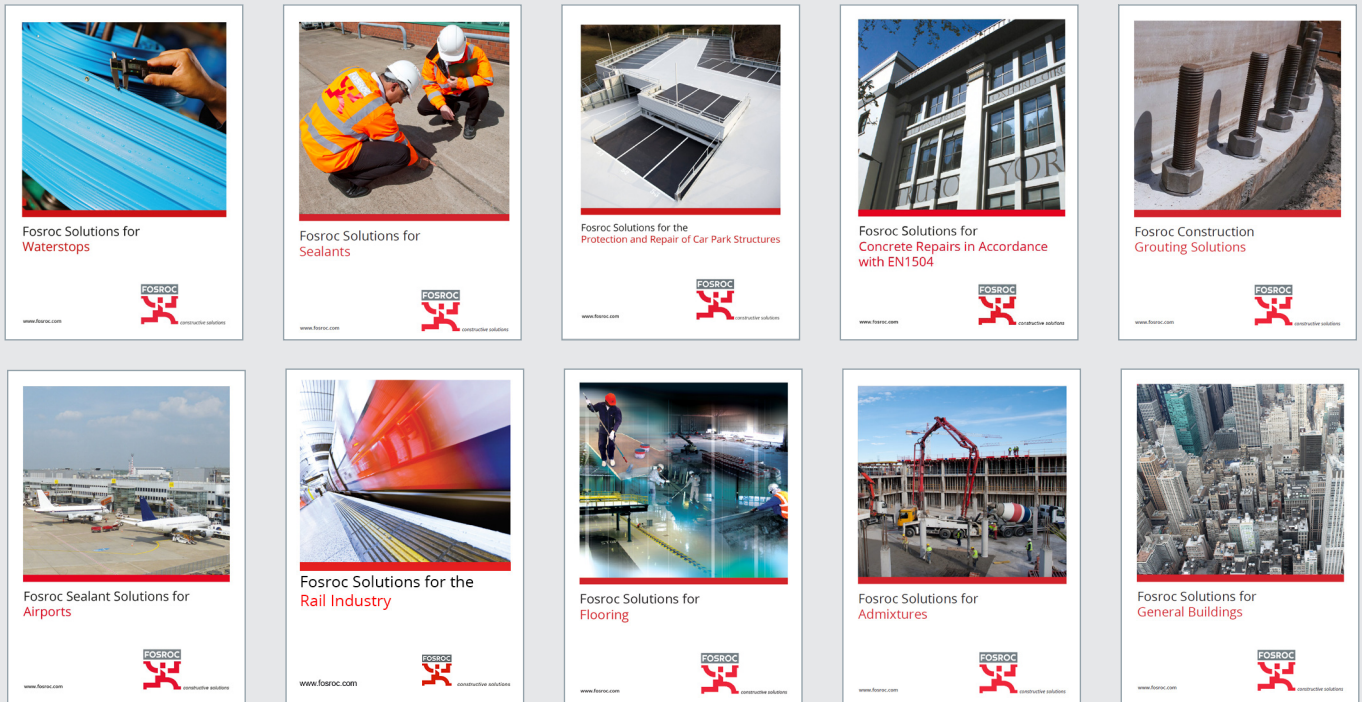
Please contact your local Fosroc office for full details.

CASE STUDIES & REFERENCES

Proofex Engage has been successfully waterproofing many structures across the world since its launch in 1999.

Case studies are available along with project references, please contact your local Fosroc office for full details.

Fosroc offers a full range of construction chemical solutions, helping to protect structures throughout the world. Please refer to our brochures, which include:



Details of your local Fosroc office can be found at
www.fosroc.com

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.



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