

# **NORDIC GEO SUPPORT**

## **Fosroc Waterproofing Systems**

**FOR  
CONSTRUCTION**





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NORDIC GEO SUPPORT offers a comprehensive range of Sealing Solutions to mining, tunnelling, energy, construction and geotechnical applications. Working with leading certified suppliers in combination with experienced manufacturers that are employing leading edge, innovative production facilities, we offer high quality, high performance solutions to your project challenges.

## Nordic Geo Support Product Offer

### Drilling Consumables

High Performance rock drilling tools and consumables:

- DTH Hammers
- Bits
- Shanks
- Rods
- Drill Pipes
- Adapters
- Augers, Accessories

### Injection Grouts

Leading edge resin injection technology for demanding cases:

- Water Stopping
- Sealing
- Ground Consolidation
- Ground Stabilisation
- Construction and structural repairs

### Anchoring & Bolting Grouts

Grouting technologies offering ease of use, clean and fast setting:

- Capsules
- Cartridges
- Pumpable grouts
- Additives

### Anchoring & Bolting

A broad range of rock bolting and anchoring technologies:

- Double and single coated protected steel
- Steel Self Drilling Anchors
- GFRP bolts of all types
- Standard bolts and meshes

### Cement-Based Additives

Cement based admixtures and additives:

- Concrete Repair
- Admixtures
- Modifiers
- Waterproofing
- Joint Sealants

### Pumps & Accessories

Cement and resin mixing and pumping technologies:

- Cement Pumps
- Resin Pumps
- Transfer systems
- Dataloggers
- Hoses, lances, packers

### Water control

Waterproofing, drainage and pumping:

- TunnelDrain innovative strip drainage system
- Drainage pipes
- Waterproofing grouts, additives and sealants
- A broad range of dewatering pumps

### Ventilation

Air quality, ventilation and safety solutions:

- Ventilation bags and systems, including Mecanica's rigid ducts
- Fans & inline coolers
- Water atomisers

### Re-usable Hangers

Developed in the Nordics, fast, easy to use & reuse:

- Services Hooks for ventilation systems, water and pneumatic lines, electrical cables and distribution boards
- Blasting hooks

### Other products

A range of other products:

- Coatings & sealants
- Personal protective products
- Mining accessories

# Proofex Systems

## PRROFEX ENGAGE

Based on a typical 1,000m<sup>2</sup> project area, Proofex Engage can be installed up to 5 days faster than a PVC waterproofing membrane type system. The Proofex Engage option uses roughly 12 fewer concrete mixer trucks since it does not need protection screed, saving in installation time and labour. It also saves vehicle fuel which is better for the environment.



### Proofex Engage Pre-applied premium waterproofing system

- Structural concrete
- Steel reinforcement
- Proofex Engage membrane

### Self-Adhesive / Torch-on waterproofing system

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

### PVC Waterproofing System

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

**Remove the risks.** 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 travelling between the waterproofing and the structure from any leakages that may occur. 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.

**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 mechanically bonds to freshly placed concrete giving a tenacious waterproof seal, preventing water migration even if ground settlement occurs. Proofex Engage is supplied with a self-adhesive selvedge along one side of the roll and a comprehensive range of auxiliary products. It is installed rapidly with no need for blinding concrete, priming or protection and can be trafficked immediately after application.

Proofex Engage provides water, water vapour and gas protection to water excluding structures and protects concrete from aggressive ground salts, chemicals and hydrocarbons. 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.
- Easy jointing and compatible full range of ancillaries.
- Protects structure against ground contaminants.
- No water-tracking.
- Integrity assured at pile heads.
- Excellent solution for precast concrete.
- Long term watertight durability.

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.

Packaging: Delivery in rolls 5mm x 1.27m x 30m

Coverage approximately 38m<sup>2</sup>

## **PROOFEX 3000**

Proofex 3000 is a black coloured radon resistant cold-working, bitumen-based, adhesive waterproofing 1.5mm membrane, with built-in/inlaid cross-laminated HDPE and polymer-modified bitumen. The adhesive side is protected by heavy white silicone-treated paper that is removed when mounted. A protective foil at the top of the roller is removed by overlap for optimal adhesion, bitumen against bitumen.

The cross laminated HDPE film offers protection against damage and is dimensionally stable. Supplied with self-adhesive layer system helps fast installation. Resistant to ground water, soluble sulfates and chlorides the system is suitable for grades 2 and 3 for basement waterproofing as defined in BS 8102:2009 and Radon protection as defined by BRE report 211.

Applications include waterproofing of, floors, walls, buildings, basements and underground structures, foundations, sockets, etc. Proofex 3000 protects the structures even in aggressive environments. Proofex 3000 can be used in basements such as waterproofing classes 2 and 3, defined in BS 8102 : 1990, "Protection of structures against rising water/groundwater".

Supplied in 1.5mm x 1m x 20m rolls

## **PROOFEX 3000MR**

Proofex 3000MR brings together the benefits of the PROOFEX 3000 system and was developed for the use where there is a presence of methane in the subsoil. An aluminum film provides methane, radon and CO2 resistance, creating a stable membrane. A solar reflective finish reduces heat during construction phase. Proofex 3000MR provides a vapour and waterproof membrane protecting the concrete from attack from aggressive ground conditions such as salts. The tough, flexible design gives improved detailing in and around corners and pipes.

Supplied in 1.5mm x 1m x 20m rolls

## **PROOFEX TOTAL**

The system is a 5 layer, reinforced, gas impermeable black/silver membrane comprising of an aluminium foil layer and polyester reinforcing grid sandwiched between three layers of polyolefins. The multilayer system is designed for maximum gas protection with for use in many applications including ground bearing floors or suspended concrete slabs or beams. .

Supplied in 0.4mm x 2m x 50m rolls

## **PREPARATIONS FOR USE**

Preparations by smoothing of rough or uneven concrete surfaces using Renderoc ST05 (please see separated Technical Data Sheet) and repairs to damage concrete areas and smoothing of sharp surfaces through appropriate Renderoc repair products. All surfaces shall be clean, dry and free of ice, dust, cement sludges, paints, solvents and oils etc.



## PROOFEX ANCILLARY PRODUCTS



### **Proofex LM**

A two-component trowel able 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. Supplied in rolls of 200m x 10m.

### **Proofex LM Mesh**

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

### **Proofex Top Hat**

Waterproof pipe entry consisting of polyethylene / polypropylene membrane, which includes an aluminum foil layer.  
Ø 110mm to 330mm x 330mm  
Ø 160mm to 380mm x 330mm

### **Proofex Total Tape**

To adhere Proofex Top Hats to Proofex Engage and as a closure strip to Proofex “L” section. 50mm x 30m

### **Nitoseal MS600**

A single component grout to seal between Proofex Top Hat and penetration pipe. Packet of 10 x 600ml cartridges

### **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

### **Proofex Primer**

A single component bitumen-based primer. Delivered in 5 liter or 25 liter containers

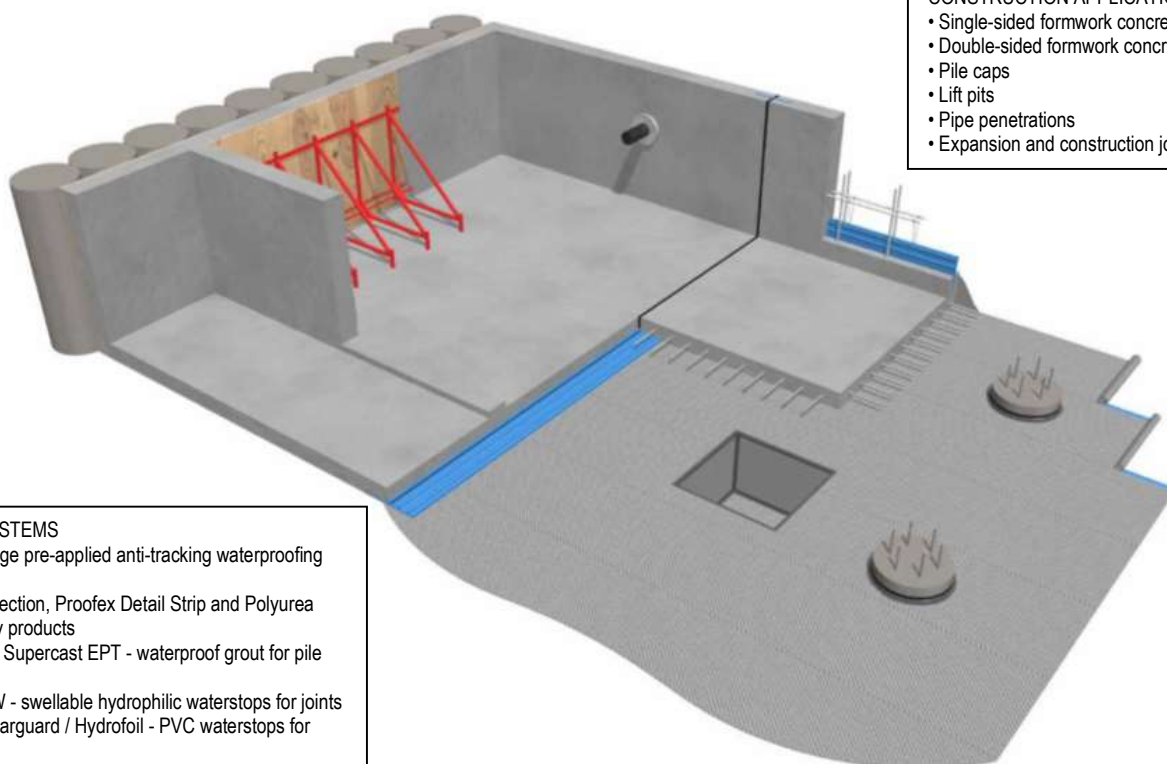
### **Nitobond HAR**

A single component acrylate-based primer. Delivered in 5 liter containers

## **CONSIDERATIONS**

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. During installation the membrane should not be left exposed for more than 6 to 8 weeks.

## TYPICAL BELOW GROUND WATERPROOFING SOLUTION



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

### FOSCROC SYSTEMS

- Proofex Engage pre-applied anti-tracking waterproofing membrane
- Proofex "L" section, Proofex Detail Strip and Polyurea WCS - ancillary products
- Proofex WG / Supercast EPT - waterproof grout for pile heads
- Supercast SW - swellable hydrophilic waterstops for joints
- Supercast Rearguard / Hydrofoil - PVC waterstops for joints
- Supercast Twinstop - composite PVC and Hydrophilic waterstop for joints
- 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 WATER STOP SOLUTIONS

### SUPERCAST PVC WATERSTOP PROFILES

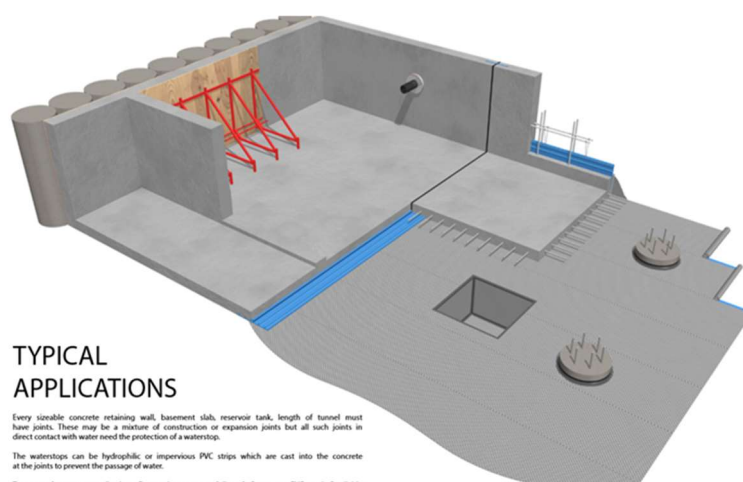
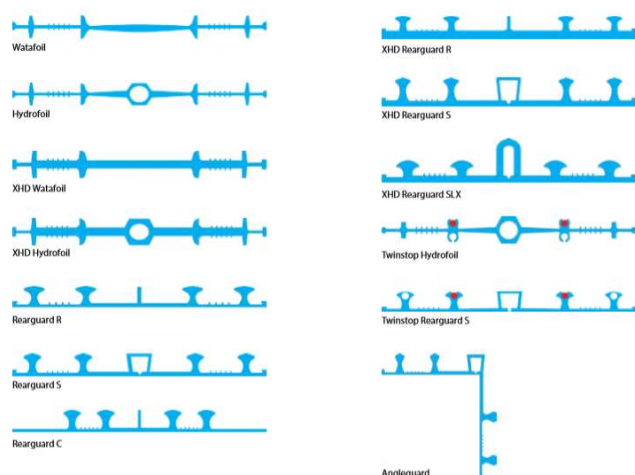
Designed with high performance at their core. These profiles capture the best principles of PVC waterstop engineering utilising tortuous path ribs, correct bulb shapes giving excellent sealing effect acting as valves, eyelets for secure placement and sloping web thickness to avoid cracking. For over four decades Supercast PVC waterstops have been installed in many projects throughout the world achieving assured long-term performance even in extreme conditions, resulting in prevention of unwanted water penetration.

### APPLICATIONS

Every sizeable concrete retaining wall, basement slab, reservoir tank, length of tunnel must have joints. These may be a mixture of construction or expansion joints but all such joints in direct contact with water need the protection of a waterstop.

The waterstops can be hydrophilic or impervious PVC strips which are cast into the concrete at the joints to prevent the passage of water. To cater for every application, The portfolio of Supercast PVC and Swellable waterstops which have been successfully installed all over the world for many decades.

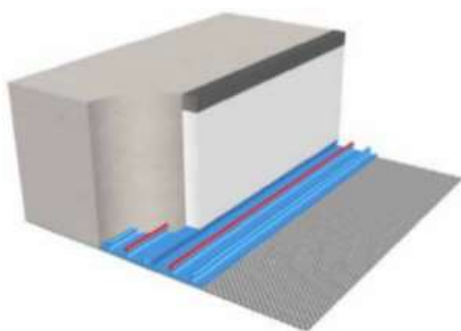
### SUPERCAST PVC PROFILES



### SUPERCAST PVC PROFILE SELECTOR

Product	150	200	250	330	Description
Watafoil	*	*	*	*	Centrally placed construction joint
Hydrofoil	*	*	*	*	Centrally placed construction joint
XHD Watafoil			*		Heavy duty centrally placed construction joint
XHD Hydrofoil			*		Heavy duty centrally placed construction joint
Rearguard R	*	*	*	*	Externally placed construction joint
Rearguard S	*	*	*	*	Externally placed construction joint
XHD Rearguard R			*		Heavy Duty externally placed construction joint
XHD Rearguard S			*		Heavy Duty externally placed construction joint
XHD Rearguard SLX			*		Heavy Duty externally placed settlements and high movements
Twinstop Hydrofoil			*		Centrally placed composite hydrophilic / pvc
Twinstop Rearguard S			*		Externally placed composite hydrophilic / pvc
Angleguard			*		Externally placed 90° angled waterstop
Rearguard C			*		Compartment waterstop for PVC membranes

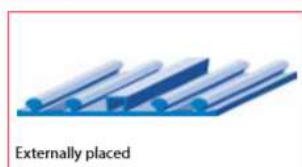
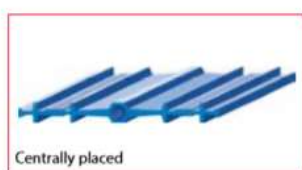
## SUPERCAST TWINSTOP



Where high water tables exist in deep basement construction and the highest possible watertight design is required, then use Fosroc Supercast Twinstop.

Fosroc Supercast Twinstop is a combined PVC and hydrophilic waterstop for extra protection. The PVC profile performs as normal but when water reaches the hydrophilic inserts, they expand to form a sealed barrier.

The hydrophilic inserts are based on Fosroc's basic polymer swellable compound which is post-inserted into the PVC waterstop meaning there is no chance of pre-swell prior to concrete casting. The hydrophilic insert has a large surface area allowing excellent swelling performance. Fosroc Supercast Twinstop is available in 250mm width for both centrally and externally placed expansion joints.



Fosroc Supercast PVC compound when tested to BS 2782 @ 25°C achieved the following test results;

Tensile Strength >15N/mm<sup>2</sup>  
Elongation at break >300%  
Hardness 80 to 90 Shore A.  
Hydrostatic head of water up to 100m (10 bar)  
Movement capability up to 10mm  
Hydrofoil rearguard S up to 40mm  
Hydrofoil rearguard SLx xHD up to 60mm.

Fosroc Supercast PVC compound meets the US Corps of Engineers specification CrD-C 572-74 requiring a tensile strength in excess of 14N/mm<sup>2</sup> and an elongation at break in excess of 300%.

## SUPERCAST SWELLABLE

Fosroc Supercast SW waterstop strips use basic-polymer hydrophilic technology which allows them to swell on contact with water creating a positive pressure against the faces of the joint thus preventing the passage of water.

The main advantage they have over conventional PVC waterstops for non-movement joints is that they provide a problem solving solution for applications where, traditionally, complex formwork would have been required. They provide an excellent solution for pipe entry sealing and also do not require hot welding on site.

Fosroc Supercast SW waterstops may be used for the integral sealing of construction joints. However due to the fact they must be fully restrained to function properly, they should not be used in movement joints. In this instance a traditional Fosroc Supercast PVC waterstop with expansion profile designed to accommodate movement should be used.

Products	Supplied in
SW 10	5mm x 20mm x 15m rolls
SW 20	10mm x 20mm x 5m rolls

## SUPERCAST SWX

Supercast SWX is a 1-component paste used for waterproofing at casting slabs in concrete structures and as adhesive for Supercast SW products. Grows up to 200% when in contact with water. It is resistant to aggressive water and microorganisms as well as the most water-soluble acids and bases. Supercast SWX is also used for grouting for cable and pipe penetrations, elements, between untreated uppers, etc.

Products	Supplied in
600ml cartridges	10 cartridges per box



## DILATION JOINT BAND



Expoband H45 is an un-reinforced Hypalon membrane incorporating a central release tape which is designed to be bonded over movement joints or crack in structures to prevent the passage of water. It is suitable in constriction use and repair/remedial applications

Expoband H45 is available in 1mm thickness and widths of 100mm and 200mm, supplied in a 25metre roll. When longer lengths are required Expoband H45 can be joined by hot welding. It is bonded to the structure on both sides of the joint using Supastik E10 two-part epoxy adhesive.

The band accommodates continuous and pronounced cyclic movement, with excellent resistance to weathering, waterproof and chemical resistance for joints above and below ground. It uses heat welding for

connection of seams.

Supplied in
1mm x 100mm x 25m rolls
1mm x 200mm x 25m rolls

## GROUTS AND MORTARS

### PROOFEX DAMPSTOP (FUGTSTOP) AKTIV

Proofex Dampstop Aktiv is based on a blend of cements, graded sand and a mixture of active chemicals that have the property to form insoluble crystals in the concrete / mortar and masonry to protect the surface against water penetration and moisture. When the product is applied on damp surfaces, the active chemicals in Proofex Dampstop Aktiv react with different reactive salt in the structure and forms insoluble waterproofed crystals in all structure pores. This reaction continues whilst there is moisture present and can eventually penetrate the structure. This crystal increase can occur with or against water pressure and therefore it is not necessary to apply Proofex Dampstop on the side of the structure that faces against the water pressure. The product exhibits excellent thermal compatibility with concrete and is fully compatible with other Renderoc mortars.

Supplied in
25 kg bags

### PROOFEX BB

Proofex BB is a cement-based suction mortar for the protection of concrete and masonry from ingress water and moisture, both active and passive water pressure, against aggressive groundwater, certain chemicals and acids, and for improving wear resistance. Can also be used on construction blocks, e.g. Leca, gas concrete and the like. Used on floors, walls and ceilings, indoors as well as outdoors. Typical applications are the sealing of basement exterior walls, castings, swimming pools, marine structures, drinking water reservoirs, sewage treatment plants, balconies, concrete decks, etc.

Supplied in
6 kg buckets
20 kg buckets

## RENDERIC PLUG – QUICK SET MORTAR



The material is based on a blend of cement, graded aggregates, special fillers and chemical additives which control the rate of set and minimise the risk of thermal cracking. Renderoc Plug provides an initial set time of approximately one minute.

For applications including emergency water-stopping work. Excellent working properties; high bond to the substrate, low exotherm minimising thermal cracking and contains no chloride.

**Renderoc Plug 1** Lightning mortar for quick reappropriation/sealing of leaking concrete with running water. Minimum layer thickness 15 mm. Sequestration time about 1 minute (at +20°C).

**Renderoc Plug 5** Lightning mortar for minor repairs where relatively quick untying is required (seeping water). Minimum layer thickness 15 mm. Sequestration time about 5 minutes (at +20°C).

**Renderoc Plug 20** Fast-curing mortar for sealing leaking concrete where no leaking water occurs for the first 20 minutes, e.g. in the upper part of sewer systems, wells, etc. Minimum layer thickness 15 mm. Sequestration time about 20 minutes (at +20°C). Also available for the casting of bolts, depths, etc. and filling of holes, cracks, etc. Similarly, the sequestration time is reduced at higher temperatures.

### Characteristics

Time	Renderoc Plug 1	Renderoc Plug 5	Renderoc Plug 20
1 hr	10 MPa	-	-
6 hr	-	10 MPa	7 MPa
1 day	10 MPa	14 MPa	11 MPa
28 days	23 MPa	27 MPa	25 MPa

Supplied in	Yield		
	Renderoc Plug 1	Renderoc Plug 5	Renderoc Plug 20
1 kg bucket	0.5ltr	0.5ltr	-
6 kg bucket	3 ltr	3 ltr	3 ltr
14 kg bucket	-	7 ltr	7 ltr

## NITOCOTE CM210 – WATERPROOF COATING

It is a two-component polymer modified cementitious coating is supplied in a pre-packaged form. The product has been designed to be easily mixed on-site using a slow speed drill and paddle and then applied to the substrate using a brush, roller, trowel or by spray application. Nitocote CM210, available in grey and white, cures to form a flexible impermeable membrane. Nitocote CM210 withstands high positive and negative hydrostatic pressures, excellent bond characteristics to concrete and masonry with long working life, bonds to green and damp concrete forming an effective barrier to sulphates and chlorides.

Supplied in Sets	Total Weight 23.2 kg
Powder	18.2 kg sacks
Liquid	5 kg bottle

## BRUSHBOND FLX III – WATERPROOF COATING

Brushbond FLXIII consists of specially selected cements, graded hard wearing aggregates and additives supplied in powder form together with a liquid component of polymers providing exceptional adhesion, resiliency, flexibility, toughness and durability. Brushbond FLXIII can be applied to damp substrates, requires no primer and has elastomeric characteristics enabling bridging of cracks.

Supplied in Sets	Total Weight 25 kg
Powder	15 kg sacks
Liquid	2 x 5 kg bottle

## DRAINAGE SYSTEMS

### PROOFEX DP200



Proofex DP200 is used to protect bitumen membranes on foundations and retaining walls during terrain, as the special "knob" surface on the drainage plate allows air to circulate, thus keeping the foundation dry.

Proofex DP200 is ideal for protecting the waterproofing membrane so that it is not damaged by soil filling. Where there are no water pressure effects, Proofex DP200 may constitute the very protection against water in the soil, which, due to the fact that the water is not water-pressured, can be used to protect the environment. the drain plate structure - easily drained to the bottom of the foundation.

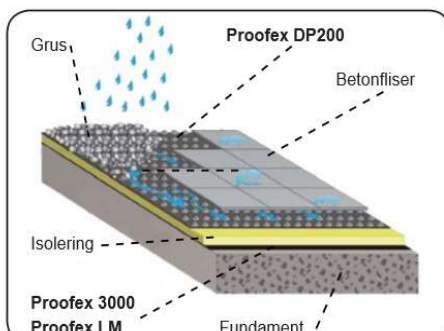
Proofex DP200 is also used for terraces and flat roofs, where the bitumen membrane needs protection against damage and pierce. Here, Proofex DP200 is used as a separation layer between the bitumen membrane and the final layer, for example, the bitumen membrane. gravel/sand and concrete

Proofex DP200 is also ideal as an "anti-root" barrier by, for example, roof gardens and turf roofs so that plant roots do not perforate the water sealing membrane, as the drainage plate is resistant to chemical and biological substances (fungi and bacteria) normally present in the soil, the filling material and the water.

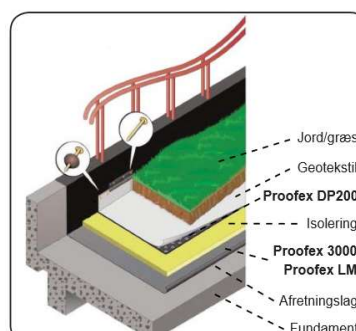
#### WALLS



#### ROOF GARDENS



#### GRASSED ROOF



Supplied in rolls	Total Weight
1.0m x 20m	10 kg
1.5m x 20m	15 kg
2.0m x 20m	20 kg





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