



# Fosroc Solutions for General Buildings



## INDEX

Our Profile	4 - 5
Constructive solutions for buildings	08
Fosroc range of products	09
Concrete	10
Waterproofing of concrete	11
Workability enhancer	12
Precast concrete	13
Waterproofing	14
Below ground waterproofing	15
Podium slab waterproofing	16
Roof/ Terrace waterproofing	17
External protection to buildings	19
Waterproofing of water tank and swimming pool	20
Grouts	22
Anchors	24
Construction joints	26
Joint sealants	27
Tile fixing solutions	28
Car park deck coatings	30
Building repairs	32
New construction repairs	33
Existing buildings repair	34
Products at a glance	34 - 35

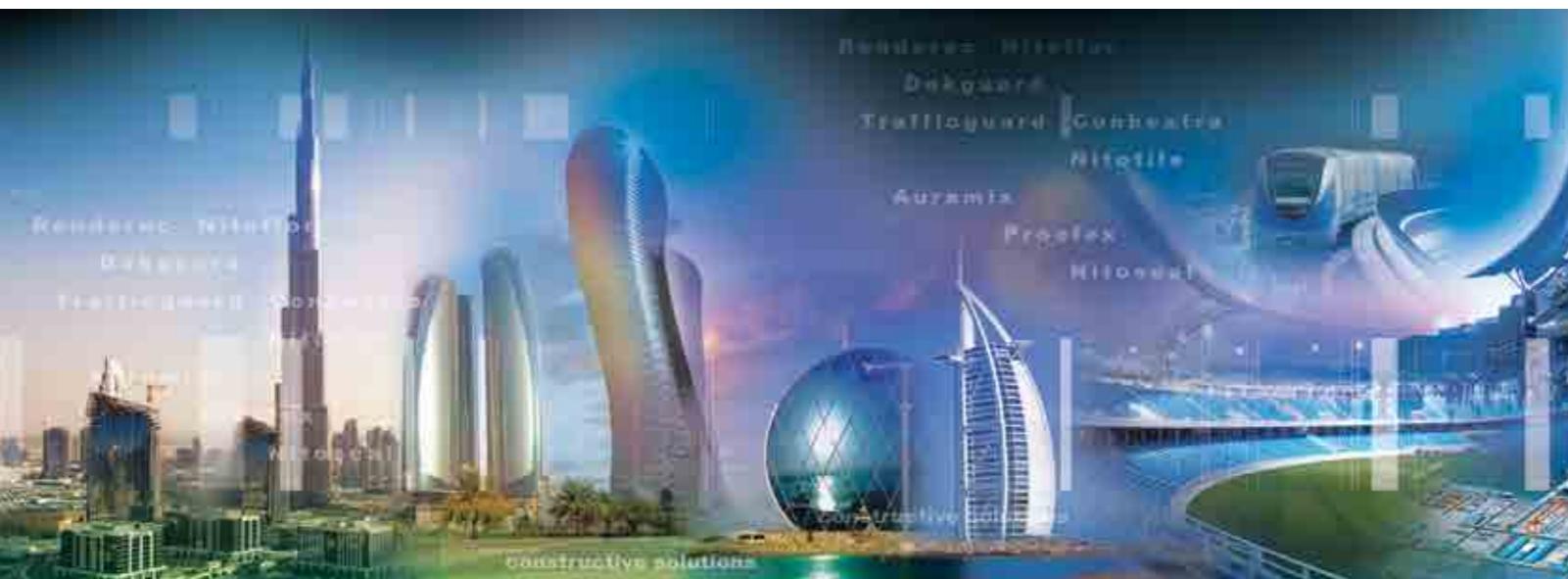
**"The greatest constructions require solid foundations, the best being built on ROCK. Here is the foundation that supports FOSROC"**

**Dr. James Hay, Chairman – JMH Group**

Fosroc commenced its Indian operations in 1981 and established a 100% subsidiary in 1999.

Fosroc has four state-of-the-art manufacturing facilities at Bengaluru, Karnataka; Ankleshwar, Gujarat; Kolkata, West Bengal and Keshwana, Rajasthan.

Fosroc Chemicals (India) Pvt. Ltd. works closely with its customers, including distribution and Applicator associates, through its well-equipped technical service department, a network of sales engineers, customer service professionals, Concrete technologist, Specification team etc. Fosroc India prides itself for the level of technical and customer support that it gives to its valued customers.



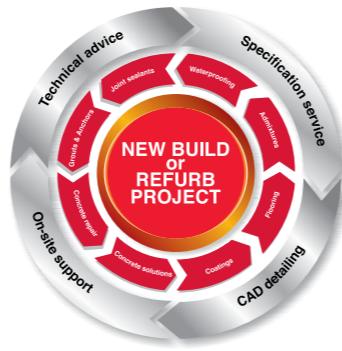
International leverage gives Fosroc the opportunity to offer tried and tested solutions from one geographical region to another with great confidence.

Fosroc Chemicals (India) Pvt. Ltd. provides time-tested solutions that include services such as:

- Diagnosis and Specification Support
- Application Support
- Distribution Support
- After-Sales Service
- Mix design support

Fosroc Chemicals (India) Pvt. Ltd. remains focused on the Industry, Infrastructure and Building Segment with a wide range of quality products.

- Admixtures and Surface Treatments
- Grouts and Anchors
- Industrial Flooring
- Concrete Repair
- Protective Coatings
- Joint Sealants and Adhesives
- Waterproofing
- Cement Additives



## Product Range



Admixtures and Surface Treatments



Grouts and Anchors



Industrial Flooring



Concrete Repair

**Fosroc provides a comprehensive range of products and solutions** in Waterproofing, Admixtures, Sealants, Adhesives, Grouts, Anchors, Floorings, Repairs and Protective Coatings for all construction sectors



Concrete



Buildings



Cement



Airport



Road



Rail



Water Treatment



Marine



Power



Oil & Gas



Chemical Process



Industrial

**Fosroc, not just a manufacturer, but also provide tailored constructive solutions combined with**

- High quality products
- Expert technical and specification support
- On-site customer service and application support
- Dedicated concrete labs for concrete admixtures and mix design support.

**Fosroc Training Academy** - As a corporate social responsibility initiative, Fosroc provides free vocational training in the field of waterproofing, remedial engineering, flooring, sealants and tile adhesives for

- Small job workers
- Applicators and contractors
- Artisans
- Un-skilled job workers

## Fosroc product certifications and accreditations



Joint Sealants and Adhesives



Grouts and Anchors



Industrial Flooring



Concrete Repair



Structural Strengthening



Waterproofing



Joint Sealants and Adhesives



Cement Additives

## CONSTRUCTIVE SOLUTIONS FOR BUILDINGS

Buildings are the most important elements in human life. Buildings serve several needs of society – primarily as shelter from weather, security, living space, privacy, to store belongings, and to comfortably live and work.

Home is said to be "My Sweet Home" and we often say, we build home with lots of love and care and not with bricks and concrete.

As we know in today's construction technology, concrete and steel are the most important and extensively used material to form a skeleton of the building; bricks, stones, wood and glass form the infills, plasters; coatings form protection and aesthetics.

The modern construction technology combined with an innovative architecture has made engineers to build buildings beyond the imagination and stand astonished for the structure they have created and have set a milestone and wonders for the world.

The buildings generally have two basic parts, substructure and superstructure.

Sub-structure or foundation is the lower portion of the building, usually located below the ground level, which transmits the loads of the super-structure to the supporting soil. A foundation and basement is the part of the structure which is in direct contact with the ground to which the loads are transmitted.



## FOSROC RANGE OF PRODUCTS AND SOLUTIONS FOR BUILDING STRUCTURES

### Concrete Admixtures



Concrete admixtures for effective waterproofing of concrete, improving workability, strength and to enhance the quality of the concrete both in the plastic stage as well in the hardening stage. The spectrum includes Sulphonated Naphthalene Formaldehyde based or Polycarboxylic Ether based chemical admixtures for high grade concrete, free flow concrete and pumpable concrete.

### Waterproofing



Waterproofing products and solutions for buildings in all stages of construction from base foundation to roof and water proofing solutions for all the facades and finishes and protective coatings for the external surfaces of the building. The product offering also constitutes for green building certifications.

### Grouting Products



High quality and high strength grouting products and solutions for buildings, be it an injection grout for cracks or be it a baseplate grout for structural elements or joinery grout for precast segments. Product solutions for polyester resin anchors for fixing the re-bars, staircase railings, fan hooks, etc for instantaneous fixing of steel bars into concrete.

### Sealants



Sealants for expansion joints, construction joints and Hypon membrane over covering systems for expansion joints in wet areas, joint sealants for window door and wall joineries and also sealants for complete water immersion applications.

### Tile Fixing Solution



Complete tile fixing and tile jointing products and solutions for fixing ceramic, vitrified, granite and marble tiles and for tile fixing in under-water applications such as swimming pools, water tanks and also for tile fixing on the external facades.

### Car Deck Coating



Complete range of products and solutions for car park deck protection and performance coatings for completely exposed or for intermediate car park floors including solutions for ramps and line marking. We also provide complete solutions in the cementitious self-levelling underlays for vinyl, wooden or carpet floors.

### Repairs



Comprehensive products and solutions for complete repairs in the buildings either in new construction for simple repairs such as cracks, honey combs, pin holes, etc to a structural strengthening requirements such as enhancing the strength of the columns, beams and slabs or any other part in the building construction.

## CONCRETE



Concrete is the most important element in the construction of any building structure. Concrete is a heterogeneous material made with cement, sand aggregates mixed with water and moulded to required shape which attain the required strength while hardening. The water in the concrete plays a major role in workability, strength and cohesiveness of the mix which in turn directly relates to quality and durability of the concrete.

Lower the water:cement ratio, higher is the strength of the concrete and at the same time it reduces the workability. Higher the water content in the concrete the workability will improve where in the strength of the concrete will reduce.

Chemical admixtures play a vital role in reducing the water:cement ratio without compromising the strength. This also improves workability and cohesiveness of the mix. The proper use of admixtures to the concrete will provide enormous benefits in improving the workability, better compaction and resulting in improved concrete quality and strength.

Fosroc concrete admixtures are most popular under the generic product name **Conplast** for their ligno and Sulphonated Naphtha based products, and **Auramix** and **Auracast** for the Polycarboxilic ether based products.

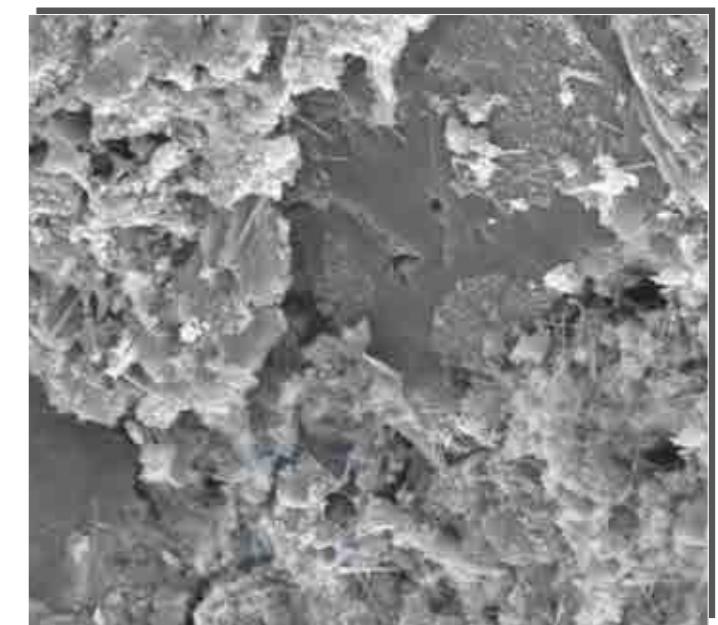
## Waterproofing admixtures for concrete

### **Fosroc Conplast WL (formerly known as Conplast X421IC).**

Integral waterproofing liquid admixture for concrete and mortars. Product conforms to IS 2645-2003 and IS 9103.

The roof slabs, sunken slabs, wet areas, water tanks, sump tanks, swimming pools, external plasters, over covering screeds, cavings in a building are the most critical elements which need a special attention towards water proofing during the stage of concrete or plaster making itself.

**Conplast WL** is a ligno based liquid admixture to be mixed in the concrete at a specified dosage of 125 ml per bag of cement which disperses easily into the mix, improves workability, cohesiveness of the mix and induces micro bubbles in the concrete or plaster matrix which cuts the capillaries in the concrete and thus make the concrete water proof. When used in conjunction with plaster mortars, improves the cohesiveness of the mortars thus reducing the rebound loss and shrinkage cracks.



### **Fosroc Conplast Crystalline**

Integral water proofing admixture based on crystalline formation. Product conforms to IS 2645-2003

All the foundations below ground, water retaining structures, concrete structures in shallow basements, water reservoirs, and swimming pools etc which are continuously or intermittently in contact with water and for such applications, Crystalline admixture to be mixed along with the concrete at site or at batching plant and used.

**Conplast Crystalline** is supplied in a powder form to be mixed to the concrete at a specified dosage at site or at batching plant. The powder disperses easily in to the concrete matrix and reacts with the water in the concrete mix to form a insoluble crystals which blocks the pores and thus make the concrete impermeable to water.

## Conplast SP 430 (series)

Super plasticising admixtures based on the Sulphonated naphtha formaldehyde, is an liquid admixture to be mixed in concrete for reducing the water cement ratio, improving the workability and for increased strength in the concrete. These superplasticisers can be used for concrete grades from M20 to M45.

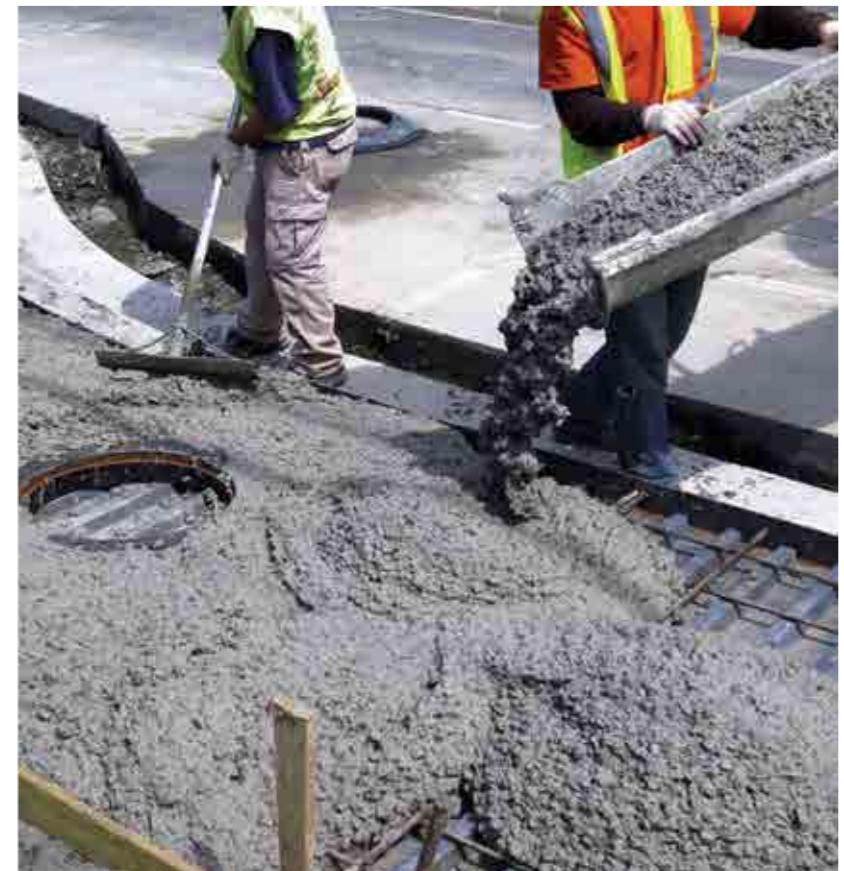
**Conplast SP430** complies with IS : 9103 : 1999 and BS : 5075 Part 3. **Conplast SP430** conforms to ASTM C 494 Type 'F' and Type 'G' depending on the dosage used.



## Auramix (series)

Fourth generation hyper plasticiser admixtures are based on Polycarboxylic ether which are used for concretes of any grade from M20 to M80 and beyond. These admixtures can be used for producing concrete with high slump retention, flowability and compatible OPC, PPC, fly ash, micro silica and GGBFS.

Auramix complies with IS: 9103-1999 (2007) and ASTM C494 Type F & G



## Workability and strength enhancement in concrete

Concrete is the most important material in a building construction. Depending on the type of structure and strength requirements design consultants specify the required properties of the concrete. Generally the compressive strength is the guiding factor for defining the concrete requirement.

For general residential buildings concrete grade of M20 may be sufficient where in for a high rise structure the concrete strength requirement may be M30, M40 or beyond. The strength of concrete in column to beam and roof slabs will also be different in the same structure which is guided by the design parameters and specified by the designers.

While we use different grades of concrete for different elements in a building structure the mix proportions of the cement, sand, aggregates and water also vary for producing different grades of the concrete. Apart from this the other property requirements such as pumping of the concrete, transporting of the concrete such as in RMC also need to be considered while producing the concrete for construction work.

## Auracast (series)

Fourth generation hyper plasticiser admixture based on Polycarboxylic ether technology best used in applications where high early strength is required and reduction in cycle time is of utmost importance. Ideal for precast concrete works.

**Auracast** complies with IS 9103-1999 and ASTM C 494 Type F & G

## Bedding Mortar

**Conbextra bedding Mortar:** Single component cementitious high strength bedding mortar, used in the structural bedding of precast modular concrete units.

- Produces a masonry mortar capable of giving a smooth finish.
- Easy to use no priming required.
- Pre-blended to overcome site batching variations.

Low wastage due to ability to mix part packs.



# WATERPROOFING



Waterproofing is the most important aspect for buildings. The specification and performance criteria and product selection for waterproofing differs based on various building elements. The waterproofing specifications for basement is different to the specifications for roof and podiums and is dissimilar to wet areas and external protection systems. Hence choosing the right product for the specific purpose is a major challenge.

## Below-the-ground waterproofing

Below-the-ground waterproofing specifications are derived mainly by the water table level and basement grade according to BS 8102:2009 guidance.

The critical challenges encountered in below-the-ground constructions are

- High water table and hence water management.
- Encounter huge rocks in the soil which will hamper the progress.
- Loose soils and hence landslides and earth falls.
- Building is very near to the lake/river stream and high water pressure.
- Rise in water table during rains due to loose soil strata.

Apart from the above which are related to mother earth engineers also face challenges from the construction limitations like

- Construction joints
- Tie rod holes
- Shuttering joints
- Starter/kicker joints
- Honey comb
- Concrete quality
- Shuttering quality
- Workmanship/quality of work force
- Pressure release valves

### Product solutions

1. For deep basements, high water table, marshy soil, sandy soil and for basements in marine atmosphere or severely exposed conditions.

**Proofex Engage:** Pre-applied waterproofing membrane conforming to the requirements of BS EN 13967:2004 and BS 8102:2009. Proofex Engage mechanically bonds to poured concrete, Unique mesh system bonds permanently to concrete, remaining in place even if settlement takes place

- Methane and CO<sub>2</sub> protection as defined in BRE Report 212
- Radon protection as defined in BRE Report 211
- BA certified
- Protects concrete from chemical attacks, hydrocarbons and aggressive ground salts in contaminated sites

2. For deep basements, high water table, marshy soil and sandy soil and basements in medium exposure conditions.



**Fosroc Membrane HDPE-P:** Pre-applied pressure sensitive adhesive waterproofing membrane which bonds integrally to poured concrete.

- Simple application - no primers or protection material required
- Inert product - no risk of a reaction with ponded water

### Fosroc Membrane HDPE-P & Variants

1. Fosroc Membrane HDPE P – Premium version of sand finished HDPE membrane with tensile strength >27Mpa with resistance to aggressive ground salts/chemicals & UV resistance
2. Fosroc Membrane HDPE P Standard – Standard version of sand finished HDPE membrane with tensile strength 21Mpa
3. Fosroc membrane HDPE P(Smooth) RF – HDPE membrane with plain finish with release film
4. Fosroc membrane HDPE S – Self HDPE membrane for retaining wall

**Fosroc Proofex 3000:** It is a cold applied, flexible, waterproof, high performance membrane incorporating a cross laminated HDPE carrier film with a polymer modified bitumen compound.

- Self adhesive layer system makes installation quick, simple and reliable
- Resistant to ground water, soluble sulphates and chlorides



**Proofex PGP:** Flexible PVC synthetic membrane for the waterproofing of tunnels and below ground structures. A continuously loose laid waterproof membrane system for building and civil engineering structures and is particularly suited to



- Resistance to root penetration.
- Welded joints for maximum water tightness

3. For shallow basements low water table, hard soil and basements in mild to medium exposed conditions.

**Proofex self-adhesive Geotext:** Proofex Self Adhesive Geotext is a cold applied self-adhesive sheet membrane comprising of polymer modified bitumen layer internally reinforced, bonded on to an outer surface of 250GSM laminated Geo-fabric film.

- High elongation & flexibility
- Good adhesion to primed concrete substrates

## Podium slabs

Podium slab is the inter-connecting slab between sub structure and super structure in a building. Podium slabs provide the access drive to various apartment blocks. The lawns, gardens are also a part of the podium slabs. The podiums are also subjected to dynamic loads by the vehicle movements.

In any apartment building or the malls and the IT complex, we find the large area being occupied by podium slabs. As the podium slabs are open to sky during rains, large amount of water gets collected. A proper drainage system should be planned to take out the water from these slabs. Apart from this the expansion joints which are a part of podium slabs are the most critical joints which need a separate attention and special treatment for fool-proof waterproofing.

Podium slabs are the worst affected element in a building construction because of its multi facet usage and the facilities it supports. Some of the common activities which podiums support are

1. Drive ways : Moving loads.
2. Gardens/ Lawns : Wet throughout the year.
3. Pools/ Ponds : Concentrated load and water body throughout.
4. Exposure : Usually not covered and hence prone to rain and UV attacks.

As podium slabs are designed to facilitate multi-facet usage it is intended to perform, the waterproofing systems also should be able to support and outperform throughout the life of the structure.

### Product solutions

1. For Intensive Garden areas, lawns, water bodies and drive ways

**Fosroc Polyurea WPE:** Is a two component spray applied system which is applied on to the well prepared and primed concrete surfaces with high pressure special spray equipment at 1.5 mm thickness. The material sets in 20 seconds to form a tough membrane. The membrane has high tensile strength of 19 N/mm<sup>2</sup> which accommodate movements. Elongation greater than 300%, exhibits high abrasion resistance, and 100% solid with zero VOC compliance to green product.

2. For extensive Garden, lawns, water body and drive ways.

**Fosroc Polyurea WH 200:** Fosroc Polyurea WH 200 is a spray applied, 100% solids, flexible, two-component, rapid curing hybrid Polyurea system, designed as a waterproofing and protective coating. Ideally suggested for:

1. Podium decks
2. Roof gardens
3. Green roofs
4. Stadium stands
5. Service roofs
6. Cut and cover tunnels

**Proofex PGP:** Flexible PVC synthetic membrane for the waterproofing of tunnels and below ground structures. A continuously loose laid waterproof membrane system for building and civil engineering structures and is particularly suited to podium slab water proofing as a loose laid membrane.

7. For driveways and artificial fountains and potted plant areas

**Nitoproof 600 Standard/PF:** Liquid applied single component elastomeric waterproofing membrane. The high elasticity, excellent bond and low water permeability of Nitoproof 600 make it ideal for a wide range of water/vapour proofing applications such as suspended floors, car decks, roof terraces, balconies, patios, inspection pits, water retaining structures (not potable water), sewage works, and inverted roofs. Nitoproof 600 meets the requirements of ASTM C836-84.



## Roof / terrace waterproofing

Roof waterproofing is the most critical aspect to building water proofing system. The requirements on green building and over deck insulation systems or terrace garden erections have posed much more challenges to engineers for selection of right water proofing systems to terrace waterproofing.

As we move on and phasing out of brickbat coba systems which were formerly used as the slope building and water proofing systems over the roof terraces the screeds applied on the roof also have posed new challenges such as cracks in the screed, joints, thermal cracks over loading etc.

While we define the waterproofing systems for the roofs the roof can be generally classified in to various forms based on the type, conditions and utility.

### Based on the type of construction

1. Flat roofs
2. Sloped roofs
3. Composite deck systems

### Small roofs in residential buildings



### Large span residential or commercial roofs



4. Steel sheeting roofs
5. Precast segmental
6. Domes
7. Industrial roofs with pre-cast folded plates

### Based on the utility

1. Roof with screed to slope
2. Sloped roofs with or without tile finishes
3. Roof with lawns and gardens
4. Roof with over-deck insulation
5. Roof with under-deck insulation
6. Roof with water bodies/swimming pools.
7. Roof for helipad support
8. Industrial roofs with machinery and equipment
9. Commercial roofs with solar, chiller and fire-fighting support installations.

The water proofing requirements in terms of performance criteria will differ based on various forms and needs and precise selection of waterproofing products for the intended purpose.

The small span roofs which are not greater than 500 square meters as in case of residential buildings, bungalows and individual villas the waterproofing materials based on acrylic polymer modified cementitious heavy duty systems have proven effective for water proofing as well they are cost economical too.

**Brushbond RFX** two component acrylic modified cementitious heavy duty water proofing product for such small roof waterproofing. Brushbond RFX is applied at 1 mm thickness in two coats and has a good bond strength to concrete surfaces and form a seamless coating with a good elongation of 40-50%. The product needs over covering with screed or brickbat coba for slope building as well to protect the water proofing membrane.

The roof having a larger span greater than 500 square meters and beyond which undergo large thermal stresses and deflections like in case of IT buildings, school buildings, hospital buildings and commercial complexes, the water proofing material applied would need a larger elongation and stronger specifications.

**Nitoproof 600 STD:** Pitch polyurethane based materials having more than 600% elongation and more flexible and durable compared to cementitious polymer based material will fit for 100% water tightness and durability.

Such applied systems also need to be protected with screed on top of it for slope building as well for protection of membrane for UV resistance.

**Nitoproof 600 PF:** Pitch Free PU based Liquid applied single component elastomeric waterproofing membrane. Nitoproof 600PF is used to provide a continuous, seamless, water and vapour proof membrane for concrete. Typical applications will include roofs, podiums, balconies, floor slabs, suspended floors, patios, bathrooms, inspection pits, swimming pools, bridge decks.

## Roofs with over deck insulation and composite deck roofs



Over deck insulation is the most important criteria for Green building norm and constitute for a special material for waterproofing. The compatibility and criticality in sandwich systems and performance criteria plays utmost importance in selection of the right water proofing product.

**Polyurea WPE:** Spray applied robust waterproofing system with high elongation and better tensile strength and high flexibility is the best in waterproofing for over deck insulation systems used in combination with pre formed or spray applied PU foams for insulation systems. This also fits in for composite deck roofs where the specification requirements for the products such applied needs a high tensile strength and better elongation with high durability.

## Industrial roofs with steel decks



Generally industrial roofs are Pre-Engineered buildings which are made of steel roofing systems. Apart from the basic waterproofing specification also draws attention for over deck insulation.

**Proofex ORG:** Thermo-poly olefin sheets are the best waterproofing systems for industrial roof applications which have UV resistance property, generally loose laid and mechanically anchored to the steel roof for waterproofing requirements. The design of anchorages depends on the wind velocity, height of the roof, etc, which need to be addressed before application and installation.

## Sloped roofs with or without tile over coverings:



Sloped roofs are generally made for faster rain water draining as well for aesthetic of the building. Generally the sloped roofs receive minimum compaction and curing during the construction process and hence susceptible for leakages if not treated with good waterproofing systems.

**Brushbond Roofguard:** An acrylic polymer single component heavy duty waterproofing material applied on to the sloped roof concrete surfaces which is UV resistance and hence does not require any protective screeds. The material is supplied as 3 coats in three different colours which is a standalone system for waterproofing.

**Brushbond RFX:** A two component cementitious acrylic polymer modified waterproofing, for sloped roofs protected with plasters that are planned to be covered with decorated tiles over it.

## Folded plate roofs for industry



Folded plate either precast or cast in site are the roofs under industrial applications. The waterproofing systems adopted formerly are bitumen based torchon or brush applied systems which have served the purpose for long time now. The technological innovation and new products are available today for betterment in water proofing.

**Proofex Self Adhesive** systems can also be used where in the remedial applications removal of existing bitumen product applied before becomes the challenge for complete removal. Such installed proofex self adhesive membranes can be over coated with aluminium paint for UV protection that can be the best specification.

## Wet areas waterproofing



The toilet sunken slabs, exposed balconies, kitchen areas and wash areas are considered to be the wet areas which are susceptible for continuous water immersion and treatment to these areas with a good waterproofing system is of utmost importance.

**Brushbond RFX:** Two component acrylic modified cementitious heavy duty waterproofing product is recommended. Brushbond RFX is applied at 1 mm thickness in two coats and has a good bond strength to concrete surfaces and form a seamless coating with a good elongation of 40-50%. The product need over covering with screed or plaster.

**Brushbond :** Brushbond is a two component acrylic polymer modified waterproofing membrane which consists of Brushbond powder and Brushbond liquid acrylic emulsion. Brushbond can simply be applied by a stiff brush, or trowel at 1 mm thickness in two coats. The product need over covering with screed or plaster.

For tile fixing over use of polymer rich tile adhesives and polymer rich or epoxy tile grouts will yield better results for long term durability.

## External protection to buildings

Generally buildings are coated with high quality cement based or acrylic based paints which are available in the open market in variety of colours as decorative coatings for the exterior surfaces of the buildings.

**Nitocote Wallguard:** Nitocote Wallguard is specially designed to accommodate the cracks in the plasters, highly flexible, having more than double thickness of conventional exterior paints, good resistance to growth of algae, wind driven rains and is the best protection for external walls. It is also available in different colours to the choice of the customer for aesthetic and decorative purpose apart from waterproofing property.



## Water tanks and sump tanks

Water tanks and sump tanks are the most important elements in a building. The leakages of water through these structures will be a painful entity for the users. The specification requirement and product selection are of utmost importance for these structures.

**Nitocote CM 210:** Nitocote CM 210 is a heavy duty acrylic polymer modified cementitious water proofing coating applied at 2 mm thickness which act as a standalone system for water proofing as well it's algae growth resistance and food grade certified too. CM210 comes with the food grade certification from the WARS UK.

**Nitocote EP405:** an epoxy based food grade certified coating for the water tanks where the basic waterproofing had been done with Brushbond RFX system over covered with cement plasters. The Nitocote EP 405 forms a plastic lining in the water tanks which is very easy to clean and does not support growth of fungus and algae.

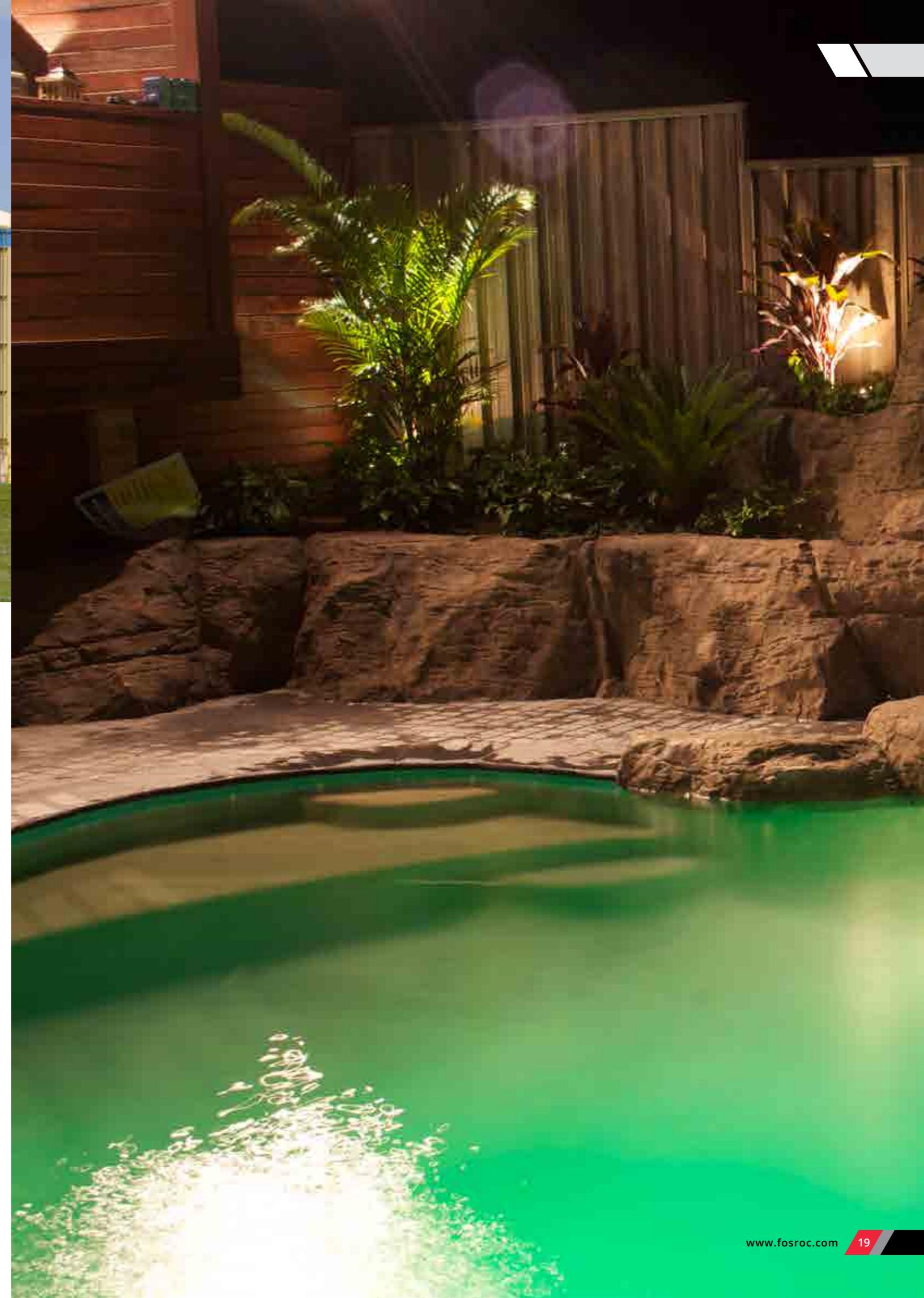


## Swimming pool waterproofing

Swimming pool is the most important structure in a building. It carries water in it for the entire life for which it is designed. Waterproofing material specification draws a special attention to this structure the properties of the material should have robustness in terms of durability, elongation flexibility and water proofing.

**Nitocote CM 210:** Nitocote CM 210 is a heavy duty acrylic polymer modified cementitious water proofing coating applied at 2 mm thickness which act as a standalone system for waterproofing as well it's algae growth resistance and food grade are certified too. CM210 comes with the food grade certification from the WARS UK.

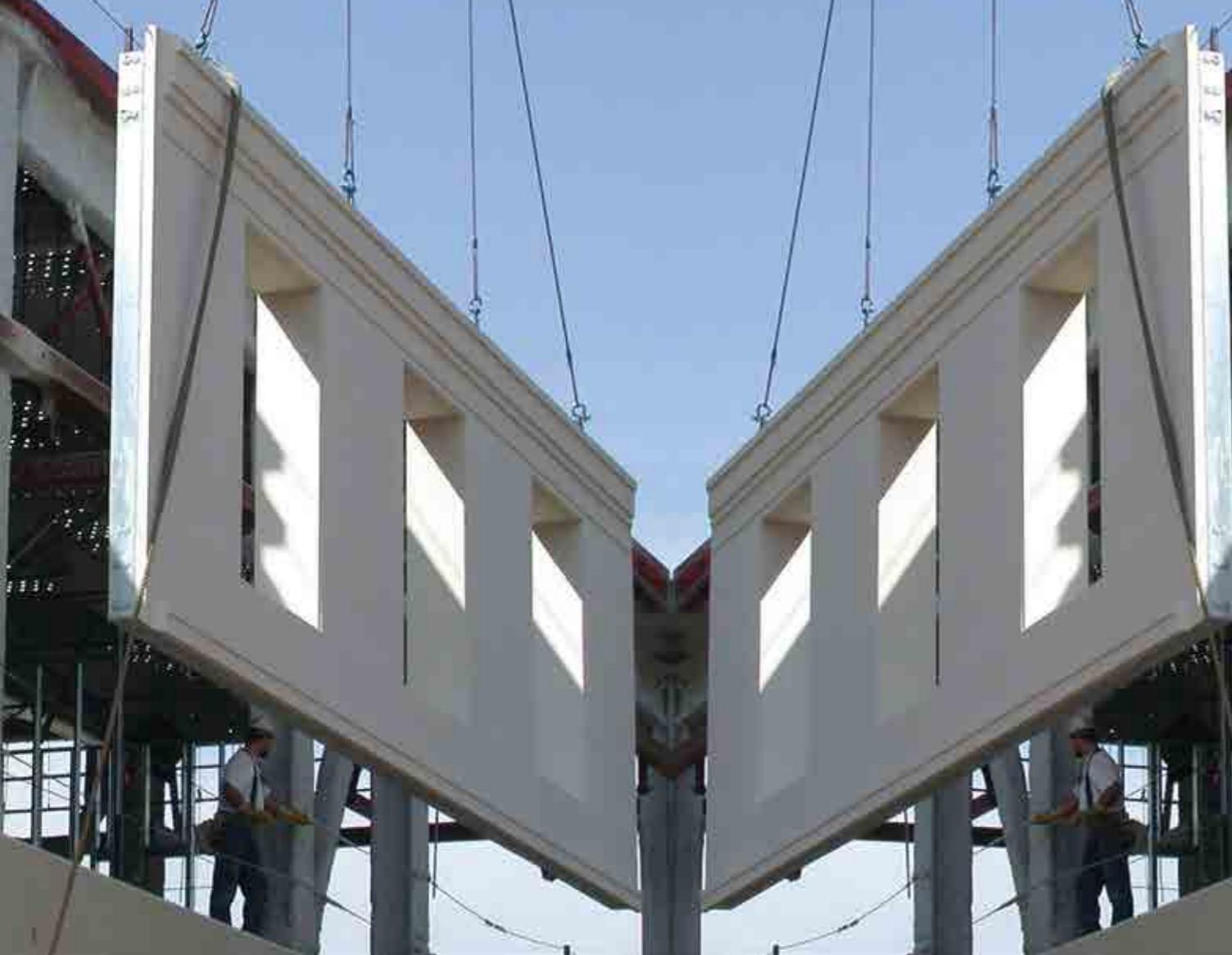
**Nitolite MPA:** Tile adhesive for tile on tile applications. The white adhesive variant in the MPA is recommended for the fixing of glass. This will help in fixing the tiles over the plastered surfaces in the swimming pool areas. Tile joints to be addressed with Nitotile EPW an epoxy tile joint filler which is resistant to growth of algae and fungus in the tile joints.



## GROUTS

Grout is a material which has a property of free flow high strength and non-shrink generally used for filling the gaps / voids that occur in a civil engineering structures during the construction or post construction activity.

Grouting materials are generally of cementitious or epoxy and depending on the necessary requirements of strength and flow ability either cementitious or epoxy materials are used.



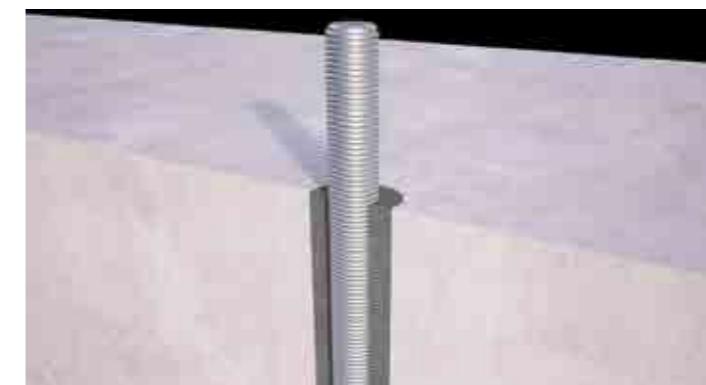
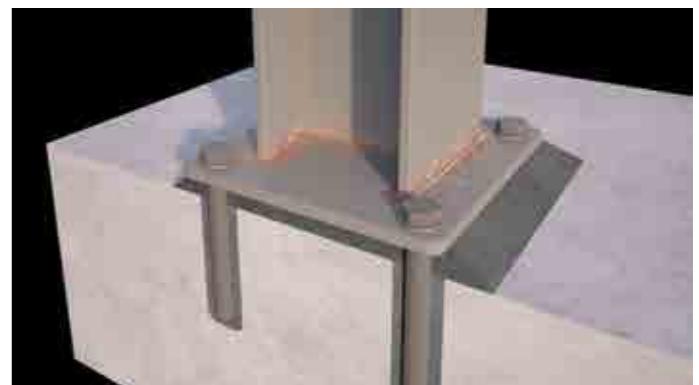
**Cebex 100:** Cebex 100 is an admixture for cementitious grouts where a reduced water/cement ratio and positive expansions are required. Applications include bed grouting, duct grouting, on-shrink infilling and jointing. During the construction the honey combs, minor non-structural cracks, construction joints formed are pressure grouted with cement slurry admixed with a non-shrink grout additive added at 225 grams per bag of cement. The grouting is done with a pressure grout equipment to inject the cement slurry grout in to the concrete through the pre fixed nozzles.

**Conbextra EP10:** High strength, epoxy resin grout used for filling the cracks or the honey combs, in a concrete structure where very high strength and immediate strength gain is of utmost importance. Conbextra EP10 a low viscous high strength epoxy grout is injected in to the cracks or crevices with a pressure grout equipment through the pre fixed nozzles. This is also used for structural strengthening.

**Conbextra GP1 or GP2:** Ready to use cementitious free flow high strength non shrink grout which need only addition of water at site to produce a free flow grout are used for filling all the voids and gaps which occur in the civil engineering structures during the construction.

1. Baseplate grouting for erection of steel columns.
2. Bore packing
3. Cable duct packing
4. Baseplate grouting for any equipment erection such as AC chillers, firefighting pipeline supports, solar installations lamp poles.
5. Drain pipe grouting, rain water pipe grouting.
6. For Joining precast segments.

**Conbextra Std :** Free flow, high strength, non-shrink, cementitious precision grout. It is supplied as a ready to use dry powder. Typical applications would be the grouting of base plates of turbines, compressors, boiler feed pumps and other machine foundations , grouting of joints both vertical and horizontal in precast construction etc., It can also be used for anchoring a wide range of fixings. These include masts, anchor bolts and fence posts. Further it can be used for bore packing in buildings.



## ANCHORS

Anchors are required in a civil construction activity for fixing various elements into the concrete which needs very high strength, fast setting and enormous pull off load carrying capacity.



**Lokfix S / P:** Polyester resin grouts anchor. Used for permanent installation of reinforcement starter bars, foundation bolts, base plates, balustrading, barriers and safety fences, railway tracks, tie-back anchors,

**Lokfix S** is used for horizontal applications.

**Lokfix P** is used for vertical and overhead applications.

Typical uses include fixing of

1. Steel railings
2. Reinforcement extensions in beam or columns
3. Fan hooks
4. Grills, etc.

### Lokfix E range

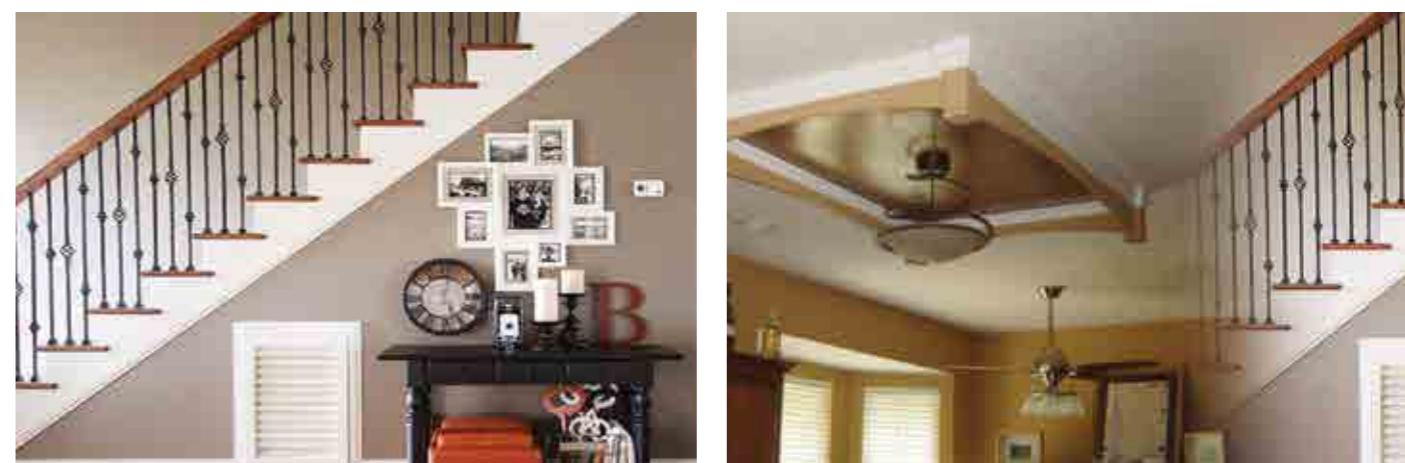
**Lokfix E75 :** Pure Epoxy Based Anchoring Adhesive

**Lokfix E55S :** Vinyl Ester Based Anchoring Adhesive

**Lokfix E35S :** Polyester Resin Based Anchoring Adhesive

### AREAS OF APPLICATION

1. Post Installed Re-bars
2. Bolts of Structural steel columns
3. Threaded rod anchoring systems for multiple applications like Side Rails, Cable Trey Brackets, Overhead Fire Fighting systems, External Facades





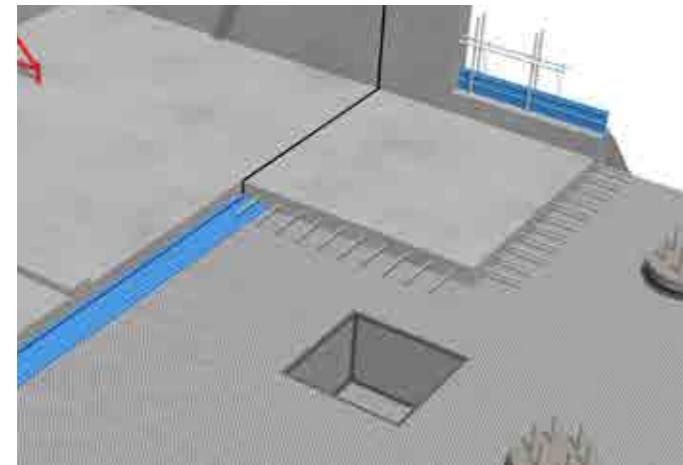
## CONSTRUCTION JOINTS

Construction joints are the most critical section to waterproofing of the concrete structures. The best of the concrete done can still have a leakage if the construction joints are not treated properly.

There are two ways of treating the construction joints during the construction and post construction scenario.

Swellable water stops are the most effective and user friendly materials during the construction.

**Fosroc Supercast SW 20:** Made from high performance synthetic elastomer to be installed in the joint before the next concrete pour is made. The swellable strips will react with the water in the concrete mass and expand by 300% of its volume and provide resistance to hydraulic head of up to 100 meters. Best suited for joints with potable water contact. Water byelaws scheme approved product listing no 9312507.



## JOINT SEALANTS

**Fosroc Supercast SW 30:** High swell hydrophilic water stop made from high performance synthetic elastomer. Has unrestrained expansion up to 500%. Best in use for concrete joints where there is little or no steel reinforcement continuity and where up to 2 mm movement in concrete is anticipated and for the structures exposed to marine atmosphere. Provides resistance to hydraulic head of up to 100 meters.

**Fosroc Supercast SWX:** Supercast SWX is a grey, elastomeric water-swelling paste which is applied like a sealant. The hydrophilic properties of Supercast SWX display good consistency in swell rate during repeated wet/dry cycling. Expansion of the product on contact with water creates a positive pressure against the faces of the concrete joint, thus preventing the passage of water.

**Thioflex 600:** Two part polysulphide sealant having a MAF of 25% which are highly flexible and weather resistant and can accommodate the continuous movements in the expansion joints are the right product choice for treatment.



**Nitoseal PU 40:** Single component polyurethane based 25% MAF sealant is easy to apply and install. The PU based materials are more durable and resistant to aggressive environmental conditions.

**Expoband One:** Expoband One is a Flexible Polyolefin (FPO) membrane system which is designed to be bonded over expansion and movement joints in structures to prevent the passage of water. It is bonded in position using Nitobond PC40, two-part epoxy adhesive.

## TILE FIXING SOLUTIONS

Generally tile fixing either internally or externally was done by normal cement paste or mortars which have limited properties in terms of waterproofing and better bond strength. We have noticed hollow sound in the tiles, falling-off of the tiles and growth of fungus and algae in the tile joints and leakages through the tile joints are the common problems in the buildings. Use of tile adhesives which are polymer rich and having better strength and tile joints with algae growth resistance will provide better solutions to the problems.



### Tile Adhesive

**Nitotile GPX:** General purpose polymer modifier tile adhesive for fixing of both ceramic and vitrified tiles which have a better adhesion properties, easy to apply and also provide the waterproofing property are recommended for tile fixing in the wet areas post water proofing treatment. The tile joints especially epoxy based tile joint fillers will have a better resistance to algae and fungus growth will keep the joints clean and waterproofed.

**Nitotile MPA:** Tile adhesive for tile on tile applications. This will help in fixing the floor or wall tiles without removing the existing tiles in the buildings where renovation is planned.

**Nitotile GTA:** Granite tile adhesive for fixing of the granite or heavy duty tiles of external wall cladding or facia building with decorative tiles. Nitotile GTA is a polymer rich adhesive which has strong bond strength and can sustain the atmospheric and weathering conditions.



### Tile Grouts:

Cementitious: **Nitotile Grout** is a blend of specially selected cements, fillers and synthetic organic polymers. When added to water it readily blends to produce a smooth creamy paste which when set is water and mould resistant. Nitotile Grout is used in conjunction with Nitotile adhesives. Nitotile Grout is used for dry tile joints in kitchens, bathrooms, shower stalls and swimming pools.



Epoxy: **Nitotile EPW Grout** is a 3 component water miscible epoxy resin tile joint filler based on new generation epoxy resin technology supplied in pre-weighed packs, ready for onsite mixing and use. Nitotile EPW Grout provides a stain free, chemical resistant, hard wearing, tile joint for areas like factories, workshops, warehouses, pharma industry, hospitals, labs and commercial & residential buildings.





## CAR PARK DECK COATINGS

Car park areas in commercial buildings are the large basements where the car parking facility is made. Generally these car park areas are vacuum dewatered floor screeds which are subjected to abrasion, wear and tear and also get contaminated with oil spillages. The joint in the concrete floor wears off over a period of time and widens which obstruct the smooth driving movement of the vehicles. The dusting of the floors is another disadvantage to the system.

Fosroc Carpark deck coatings will address all the problems in the deck slabs and also provide best aesthetics apart the functional use and advantages.

**Trafficguard UR 100 and 150:** A multilayer polyurethane coating systems applied on the VDC concrete floors in the car park areas provide a high abrasion resistance, slip resistance, chemical spillage resistance and dust-free clean floors.

In the multilevel carpark areas where the exposed car park are subjected to rain and direct exposure to UV, Traffic guard UR 100 system comprising of waterproofing cum protection to deck slab is recommended.





## BUILDING REPAIRS

Building suffers various attacks during its service life. Maintenance of building is a must to keep it under best performance levels for the entire stipulated life of the building. Generally, there are two kinds of repairs arise in a construction activity. These can be broadly classified in to repairs during the new construction and post construction repairs.

### New construction repairs

Concrete is a heterogeneous material and while the concrete is produced and placed in the mould and while it sets to gain the required strength, it suffers various construction quality deficiencies and end result is formation of

1. Honeycombs
2. Low strength than is required
3. Worn-out edges
4. Shrinkage cracks
5. Thermal cracks, etc

**Rendroc S2:** Two component structural grade polymer modified mortar for the reinstatement of concrete in small localised patch repairs. The honeycombs in the structural concrete structures to be made good with this ready to use mortars which are structural grade and is compatible with the base concrete.



**Rendroc CS/ CF:** Single part, non-shrink, cementitious, crack filler for plaster, masonry and concrete. Polymer rich ready to use powder mixed with water at site to get a paste consistency material for filling in to the cracks such formed due to shrinkage or thermal effect.



**Nitomortar S:** An epoxy based repair material which is high strength used for repairing the broken edges in the structural concrete structures such as columns and beams.



**Conbextra Block jointing Mortar :** Self - Curing, Ready to Use Block Joining Mortar

Conbextra Block Jointing Mortar is used as bedding mortar for fixing AAC Blocks and Fly-ash bricks. The product can also be used for fixing hollow blocks. The mortar design ensures fast and easy application of blocks with least wastage.

## Existing buildings repair

Buildings suffer various attacks from aggressive environment such as carbon attack, chloride ion ingress, sulphate attacks and especially for the structures in the severely exposed environment like coastal areas. Apart from these, buildings may also suffer excessive loading due to change in use, seismic forces, and general deterioration due to age of the building itself.

For the repair rehabilitation and retrofitting of the existing buildings an expert opinion should be sought where they would make necessary NTD tests for accessing the health of the building and suggest a suitable remedial measure.

The technical properties of the material, compatibility, application detailing are very important factors to be considered while choosing a material for such repairs.

**Rendroc RG:** Where it necessitates for increasing the size of the structural member for strengthening, a free flow high strength micro concrete is used. Material being high strength and free flow very thin section encasement is possible for design.



**Renderoc S2:** Two component structural grade repair mortar used for localised patch repairs or for repairs where micro concrete applications are not feasible. It is alkaline in nature and will protect embedded steel reinforcement. It is specially designed for location where high compressive strengths are required. The mortar is suitable where superior resistance is required to chlorides and carbon dioxide.



**Carbon Fibre Wraps:** High performance high strength, carbon fibre system for structural strengthening of columns, beams and slabs of load bearing structures particularly where improvement to shear strength and deformation characteristics is required. It is ideal for seismic retrofitting also. These special repairs are adopted where the required strength in concrete is not achieved and also for increasing the load bearing capacity of the structure.



**Nitozinc Primer:** For corrosion of the steel reinforcement zinc is the best protector as it acts a sacrificial anode. Where it constitutes for repair of the concrete structure and if the steel reinforcement has corroded, needs to be treated with Nitozinc primer prior to the application of repair materials.



## Products at a glance

Application	Products	Advantages
<b>General Concrete and plaster works in site mix applications</b>		
Roof slab concrete, screed over lays, concreting works for water tanks, sumps and lift pits	Conplast WL- Integral waterproofing admixture	Improves workability, cohesive mix, reduced water:cement ratio and makes the concrete waterproof.
Plastering works for external surfaces of the building, sunken slabs, water tanks, lift pits	Conplast WL- Integral waterproofing admixture	Cohesive mix, reduces shrinkage cracks, reduces rebound loss.
<b>Concrete from Ready mix or site batching plants</b>		
Concrete mixes up to M30 for basement, retaining walls, column beam slabs	Conplast SP430 (series)- SNF based superplasticisers	High slump, water reduction up to 25% cohesive and pumpable concrete.
Concrete mixes from M30 to M80 for basement raft, retaining walls, column beam and slabs	Auramix (series) - PCE based admixture	Self compacting concrete, high flowability, cohesive and pumpable concrete.
Concrete mixes for precast segmental construction	Auracast ( series)- PCE based admixture	High early strength, high slump, cohesive and pumpable concrete.
<b>Bedding Mortar</b>		
Single component cementitious high strength bedding mortar of precast modular concrete units.	Conbextra Bedding Mortar	High strength,Chloride free, produces a masonry mortar capable of giving a smooth finish, easy to use no priming required, Pre-blended to overcome site batching variations, low wastage due to ability to mix part packs, only addition of water required.
<b>Waterproofing - Below ground</b>		
Deep basement high water table, marshy and contaminated soils and marine atmosphere	Proofex Engage	Mechanically bonded robust, highly durable, gas resistant head and green product, simple and quick to install. Basement waterproofing protection to grades 1, 2 and 3 as defined in BS 8102:2009.
Deep basement high water table, marshy and contaminated soils- medium exposure	Proofex PGP	Loose laid, hot seam welded highly durable. Fast application, good resistance to puncturing and root penetration.
Deep basement high water table, marshy and contaminated soils and marine atmosphere	Fosroc Membrane HDPE P/HDPE P Standard /HDPE P(Smooth) RF	Pre-applied pressure sensitive membrane, no primers or protection materials required, inert product. Conforms to grades 1, 2 & 3 as defined in BS 8102:2009
Retaining wall	Fosroc Membrane HDPE-S	Self HDPE membrane for retaining wall.
Deep basement high water table, marshy and contaminated soils and marine atmosphere (with working space)	Fosroc Membrane HDPE-S/ Proofex 3000	
Shallow basements low water table mild to medium exposure	Proofex self adhesive geotex	Self adhesive easy to apply. High tensile strength, tear and puncture resistance, withstands thermal movements, fast application and rebars can be directly placed.
<b>Waterproofing - Podium slabs</b>		
Intensive garden, lawn and water body	Polyurea WPE	Spray applied, seamless, robust, fast setting highly durable and green product. Environment friendly, chemical resistance, thermal stability and UV resistance* Excellent impact, abrasion and puncture resistance.
Extensive garden, lawn, water body and driveways	Fosroc Polyurea WH 200	Spray-applied, 100% solids, flexible, two-component, rapid curing hybrid Polyurea system, designed as a waterproofing and protective coating.
Extensive garden, lawn, natural pool	Proofex PGP	Loose laid, hot seam welded highly durable. Fast application, good resistance to puncturing and root penetration.
Drive ways, dry areas	Nitoproof 600 Standard/PF	Liquid applied, seamless, highly elastic, cures to give a permanently flexible resilient barrier over a wide range of temperatures, Rapid installation, mechanical damage to the membrane can be easily repaired by spot application.
<b>Waterproofing Roofs / Terraces</b>		
Small terraces less than 500 sqm	Brushbond RFX	Acrylic modified cementitious, brush applied, seamless. High resistance to the effect of long-term weathering, durable in all climate conditions including UV attack.
Large terraces greater than 500 sqm	Nitoproof 600 Standard/PF	Liquid applied, seamless, highly elastic, cures to give a permanently flexible resilient barrier over a wide range of temperatures, Rapid installation, mechanical damage to the membrane can be easily repaired by spot application.
Composite roof deck slabs	Polyurea WPE	Spray applied, seamless, robust, fast setting highly durable and green product. Environment friendly, chemical resistance, thermal stability and UV resistance* Excellent impact, abrasion and puncture resistance.
Composite roof deck slabs	Fosroc Polyurea WH200 GR	Spray-applied, 100% solids, flexible, two-component, rapid curing hybrid Polyurea system, designed as a waterproofing and protective coating.
Waterproofing of Composite roof deck/steel deck slabs - exposed	Proofex ORG	Loose laid, UV resistant, highly durable and tough membrane. Fast application, environment friendly & high resistance to weathering and UV.
Sloped roofs or existing roof slabs	Brushbond Roofguard	Liquid applied, seamless, high elongation flexible UV resistant. can be applied directly on existing sound concrete, brickbat coba, screed concrete even without removal. No protection screed required.
<b>Waterproofing - Wet areas balcony and utility</b>		
Wet areas, balcony and utility	Brushbond RFX / Brushbond	Acrylic modified cementitious, brush applied, seam less. High resistance to the effect of long-term weathering, durable in all climate conditions including UV attack.
<b>External protection to buildings</b>		
External plastered walls	Nitocote wall Guard	Cementitious, elastomeric & decorative acrylic waterproofing coating for exterior walls

## Products at a glance

Application	Products	Advantages
<b>Water tank, Sump and swimming pools</b>		
Internal & External surfaces	Nitocote CM 210	Acrylic modified cementitious, brush applied, seam less high build coating food grade certified WARS approved. Withstands high positive and negative hydrostatic pressures. Excellent crack accommodation before and after immersion.
Internal surfaces	Nitocote EP405	Epoxy solvent free highbuild, food grade & hygienic – suitability to potable water and food stuff storage. Compatible with all substrates - can be applied directly on to mild steel and concrete.
Tile fixing for swimming pools	Nitatile MPA	Polymer rich tile adhesive for glass tile fixing. Excellent adhesion on smooth surfaces & non-shrink.
<b>Grouts</b>		
Construction joints and honey comb areas	Cebex 100	Expansive grout additive for grouting. Reduced water/cement ratio in the grout mix ensures low permeability and long term durability in service.
Cracks and honey comb areas	Conbextra EP10	Low viscous epoxy for grouting the cracks and honey comb areas where enhanced strength is required. Suitable for a wide range of loading situations including repetitive dynamic loads & non-shrink capability ensures full surface to surface contact.
Base plate grouts, bore packing and duct packing	Conbextra GP2/ GP1	Free flow, high strength non-shrink, develops high early strength without the use of chlorides.
Pre cast segments joining	Conbextra GP2/ GP1	Free flow, high strength non-shrink, develops high early strength without the use of chlorides.
<b>Anchors</b>		
Heavy duty anchoring, Post installed re-bars, threaded bars, Dry, wet and flooded bore holes and diamond drilling holes	Lokfix E range Lokfix E75 : Pure Epoxy Based Anchoring Adhesive Lokfix E555 : Vinyl Ester Based Anchoring Adhesive Lokfix E355 : Polyester Resin Based Anchoring Adhesive	High bond strength, performs at different temperature range, Low VOC and C1 / C2 Seismic rating ,
<b>Joints</b>		
Construction Joints	Supercast SW20/30, SWX	Swellable water stops for all construction joints. Swelling properties unaffected by long-term wet/dry cycling. Sustains effective seal in wet conditions.
Construction Joints	Supercast PVC	PVC water stops for construction joints, Range of profiles to suit every need, Reinforced eyeleted edge flanges for positive fixing. Simple on-site jointing.
Expansion Joints	Thioflex 600, Nitoseal PU40 expoband one	High MAF, durable and water tight joints treatment with polysulphide, polyurethane and Flexible Polyolefin (FPO) membrane.
<b>Tile fixing solutions</b>		
Fixing ceramic/ vitrified tiles for various application in construction activity	Nitatile GPX	General purpose, polymer rich, high strength tile adhesive. Good slip resistance, waterproof, can be used in totally submerged conditions.
Tile on tile application	Nitatile MPA	Polymer rich, high shear strength, antiskid tile adhesive for fixing tiles on the existing tile. Excellent adhesion on smooth surfaces.
Granite tile fixing	Nitatile GTA	Polymer rich high bond strength and shear strength adhesive. Ideal for vertical and horizontal applications of granite, marble, etc. Can be used in the interior and exterior of buildings.
Tile joint filing	Nititol grout	Cementitious polymer rich tile joint filler. Low cost service life - mould resistant, tropical grade, can be used in submerged conditions.
Tile joint filing	Nitatile EPW grout	Epoxy tile joint filler. Resistant to mild chemicals and acids, resists bacterial growth, good resistance to abrasion and impact.
<b>Carpark deck coatings</b>		
Exposed carpark areas	Trafficguard UR100	High abrasion resistant, oil spillage resistant, slip resistant seamless and waterproof coating for exposed car park areas.
Carpark areas	Trafficguard UR150	High abrasion resistant, oil spillage resistant, slip resistant seamless coating for intermediary deck slabs.
<b>Building repair solutions</b>		
Honey comb repairs	Rendroc S2/ Rendroc Hsxtra	High strength structural grade repair mortars, cost effective, enhanced durability, compatibility and user-friendly.
Cracks	Rendroc CS/CF	Polymer rich crack filling material for external cracks in plastered walls. Single component, non-shrink, can be used for horizontal, vertical and overhead applications.
Broken edges	Nitomortar S	Epoxy repair materials for repairs to broken edges on column, beam of precast segments. high ultimate strength - suitable for structural use. Typically twice as strong as good quality concrete.
column / beam encasement	Rendroc RG	Free flow high strength non-shrink micro concrete. Rapid strength gain to facilitate early reinstatement.
Used as bedding mortar for fixing AAC Blocks and Fly-ash bricks	Conbextra Block jointing Mortar	Self - Curing, Ready to Use Block Joining Mortar.
Carbon fibre/glass fibre wraps and laminates	Nitowrap CW, GW and Nitoplate CP	High strength, fibers for enhancing the strength of the structural members. Enhanced stiffness, shear & tensile capacities - increased load carrying capacity and better resistance to seismic forces and deflection.



- Head Office
- Plant
- ★ Regional Offices
- ▲ Branch Offices

## Fosroc Chemicals (India) Pvt Limited

### Head Office

Embassy Point, No. 150, 2nd Floor, Infantry Road, Bangalore - 560 001, Karnataka

Phone : +91 80 4252 1900

Fax: +91 80 2228 1510

### Regional Offices

<b>WEST</b>	:	Thane (West) - 400 615, Maharashtra	Phone : (022) 6229 6800
<b>NORTH</b>	:	Noida - 201 309, Uttar Pradesh	Phone : (0120) 4270620/1/3
<b>EAST</b>	:	Kolkata - 700 068, West Bengal	Phone : (033) 6534 3188
<b>SOUTH</b>	:	Chennai - 600 028, Tamil Nadu	Phone : (044) 2489 9994

### Branch Offices

Ahmedabad	-	(079)	4005 2800, 4005 2801	Nagpur	-	+91 9561001353
Bhubaneswar	-		+91 97770 49670 / +91 99370 28267	Jaipur	-	+91 9784007155
Chandigarh	-	(0172)	263 6855	Patna	-	+91 9771495335
Cochin	-	(0484)	234 7465	Pune	-	+91 8600149216
Guwahati	-	(0361)	234 2866 / +91 88110 14878	Vizag	-	+91 99594 88807 / (0891) 6635637
Hyderabad	-	(040)	6456 0505 / 4007 2529 / 6460 0407	Bangladesh	-	+88 01734 675252
Lucknow	-		+91 738808880			

### 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.

E-mail: [enquiry.india@fosroc.com](mailto:enquiry.india@fosroc.com)

CIN: U02411KA1980PTC004053



constructive solutions

[www.fosroc.com](http://www.fosroc.com)