



constructive solutions

# Nitoproof® 100/120

## Bituminous waterproof protective coating

### Uses

Horizontal and vertical damp-proof membranes in sandwich construction for floors, walls and roofs.

Internal lining of water storage tanks including for potable water. External treatment of below ground structures against water ingress and attack by aggressive ground water.

### Advantages

- **Easy to use** : Simple brush or trowel application
- **Cold applied** : No heating or dangerous handling
- **Liquid membranes** : Can be applied to rough or contoured surfaces.
- **No joints** : Continuous unbroken film
- **Non toxic** : Safe with drinking water.

### Standards compliance

Nitoproof 100 and 120 comply with IS:9862 - 1981 specification for ready mixed paint, brush applied bituminous, black, lead-free, acid, alkali, water and chloride resistant.

They also meet the requirements for coatings suitable for use on surfaces in contact with potable water - tested by Public Health Institute, Bangalore.

### Description

Nitoproof 100 and 120 are based on raw materials which are amongst the most water and water-vapour resistant surface coating materials available. They are also resistant to a wide range of chemical attack.

Specially selected bitumens are blended to produce various grades, each designed to provide the best possible protective coating for its practical purpose.

Nitoproof 120 incorporates fibres which give body to the film and act as reinforcement in the coating, eliminating cracking and crazing under conditions of thermal movement.

Note : In common with all bituminous and tar based coatings, and many other organic materials, Nitoproof 100 and 120 are susceptible to prolonged exposure to ultraviolet light and are not, therefore, recommended for use in situations where they will be exposed to direct daylight. They are however, ideally suited for use in sandwich constructions, or as surface coatings in enclosed tanks or structures, or below ground, where their durability is well proven.

### Technical Support

An experienced technical advisory team is available to give technical service on request.

### Application instructions

#### Surface preparation

Preparation of surfaces prior to the application of Nitoproof 100 and 120 is most important.

Surface must be clean and dry and all loosely adhering particles such as rust, mill scale, soft mortar, cement laitence or old coatings must be carefully and thoroughly removed by wire brush and/or using Reebaklens. All dust must be removed by soft brushing. Surfaces must also be free from oil or grease.

Where a mortar or concrete surface is smooth and shiny as the result of 'polishing' with a steel trowel, it must be lightly wire brushed to ensure a satisfactory key.

In the case of newly emptied water tanks in contact with water, the body of the surface must be allowed to dry out thoroughly before application. Otherwise, residual water may prevent a satisfactory bond being obtained.

Nitoproof 100 and 120 should not be applied to surfaces which are wet. In such cases, Fosroc should be consulted for alternative treatments.

Important : The strength and reliability of any coating is only as good as the surface on which it is applied. If this is weak or powdery, such as soft or friable mortar or poor concrete; or flaky, as cement laitence or old coating material; then the Nitoproof 100 and 120 membrane may fail along with the substrate surface.

Where any surface is suspect, it should be chipped off or cut back to sound material and, if necessary, made good with suitable good quality mortar or concrete, and well cured, prior to coating with Nitoproof 100 and 120.

#### Priming

All surfaces should first be primed with one full coat of Nitoproof 100 to ensure the adhesion of subsequent coats of either Nitoproof 100 or Nitoproof 120. The coverage obtained with the priming coat of Nitoproof 100 will vary considerably with the nature and porosity of the substrate but will typically be in the range of 4.0 to 6.0 sq.m / litre.

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To determine if one coat is sufficient, is best judged by the colour after drying. If a dense and even black coating is obtained, the surface may be adequately primed irrespective of coverage obtained. If the coating is patchy in appearance, then a further coat is necessary to ensure satisfactory priming.

## Over coating

Once the priming coat of Nitoproof 100 is dry, it may be overcoated with either further coats of Nitoproof 100 or Nitoproof 120 according to the requirements, allowing each to dry completely before applying the next.

## Important

1. Each successive coat must be applied at right angles to the previous one to ensure efficient filling to brush marks and low spot and a satisfactory overall film thickness.

Medium stiffness bristle brushes are recommended for both Nitoproof 100 and Nitoproof 120 but should not be too stiff as to cause grooving of the film.

In case where a very heavy bodied coat is required, Nitoproof 130 may be used and should be applied with a steel trowel.

2. Nitoproof 100 and Nitoproof 120 must be brushed evenly and not allowed to form pools in hollows and, particularly, in troughs or rough tamped concrete. Otherwise, a surface skin may form causing solvent entrapment before complete drying can occur. This may later give rise to blow holes in the protective film.

## Drying times

Under warm dry conditions where good ventilation and air circulation exists, drying both Nitoproof 100 and Nitoproof 120 is fairly rapid. Typically 4 to 8 hours in cool or very humid weather, e.g., during monsoon, or in enclosed tanks or spaces with little ventilation or air flow, 24 hours or even more may be required before each coat is dry. In case of enclosed water tanks final filling of tanks should wait for a minimum of three days or until the last coat dries and all solvent vapour has disappeared.

## Cracks and joints

Effective coating over cracks and joints in the substrate is dependent upon their size and extent and whether they are liable to further movement.

**Hair-line cracks** : Fine hair-line cracks which are confined to the surface of the substrate only, can generally be sealed with a combination of one coat of Nitoproof 100 followed by two coats of Nitoproof 120.

**Shrinkage cracks and construction joints** : Provided these are not subject to further movement or only very minor movement treatment is recommended.

If crack is relatively wide, say 2mm or more, it should be raked out to approximately 6mm width and 6 to 12mm depth to form a groove with vertical sides. A Vee shaped groove is unsuitable. The formed groove may then be filled with a suitable repair material such as Nitomortar PE, a polyester repair mortar or Conbextra GPI, cementitious grout mixed to mortar consistency, and applied in accordance with manufacturer's instructions. Very narrow cracks do not normally require filling.

1. Prepare a piece of gunny cloth or glass fibre mesh of sufficient size to overlap the crack or joint by 75 mm on either side and beyond it in each direction.
2. Apply one full coat of Nitoproof 100 over the area of the surface to be covered and, whilst still wet, press the cloth strip firmly onto the Nitoproof 100.
3. Immediately, follow this with another coat of Nitoproof 100 over the reinforced area by using the brush as stippler, work the Nitoproof 100 through the cloth to fuse with the wet Nitoproof 100 beneath. This fusing of the Nitoproof 100 coat is important, and, when dry, will hold the cloth strip in position.
4. Further coatings, usually with Nitoproof 120, are then applied over the entire surface to be treated, once the cloth strip is set and dry.

**Movement of cracks and joints** : In all cases where these occur, it is likely that cracks will propagate through any protective film, including additional screed or plaster covering, and an alternative method of sealing such cracks or joints must be employed.

Nitoproof 100 and 120 are not recommended in such cases.

**Structural joints** : In all structures where it is required to coat over the intersection between vertical walls and base slabs, or between adjacent walls, special care should be taken.

Where such intersections form a right angle, it is recommended that, after first priming with Nitoproof 100 or Nitoproof 120, a fillet should be provided at the intersection.

Where intersections do not form a right angle, either due to prior shaping of the substrate or the line of the structural members forming a shallow angle, then reinforcement of the area upto 75mm either side of the joint is recommended. This should be done using gunny cloth or glass fibre mesh as described for shrinkage cracks and construction joints.



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## Covings

The junction between concrete slab and parapet wall shall be treated with polymer modified mortar using Nitobond SBR.

## Mortar toppings

Where Nitoproof 100 and 120 membrane is to be covered with either concrete or sand/cement layer or tiles are to be bedded on mortar. The final coat of Nitoproof 120, whilst stillwet, should be sprinkled liberally with 3mm clean grit ( Not sand or dusty aggregate ). When the coating is dry all loose grit should be removed with a soft brush, to leave the remainder embedded in the coating to form a key for topping which can then be placed.

## Vertical plastering

The provision of a grit key is not feasible on vertical surfaces except where the coating is carried only a short distance, say 100mm or so, up a wall.

If a complete sandwich construction, such as an inner lining wall of bricks, blocks or poured concrete is intended, then it is necessary to provide a mechanical key for plastering. A suitable and proven method is :

1. Coat the vertical surface fully with Nitoproof 100 and 120 to the finished requirement.
2. Drill and plug the wall at intervals of a maximum of 300mm in each direction using suitable galvanised screws or nails into plugs.
3. Attach galvanised wire mesh of 20mm to 25mm gauge, tightly stretched between fixings and held slightly off the wall.
4. Using sand/cement mortar, preferably incorporating Conplast X421IC, integral waterproofing admixture, plaster the wall in the normal way making sure a good bond is obtained with the mesh. Generally two thin coats, say 20mm of plaster with suitable setting time between each, are preferable to one thicker coat. The first coat of plaster is scratched to form a key for the second.

**Note :** Drilling through Nitoproof 100 and 120 membrane does not normally impair the water resistance of the overall film but if undue disturbance is feared, the area around each fixing should be spotted with Nitoproof 100 before attaching the mesh.

## Cleaning

Tools and equipment should be scraped as clean as possible and all remaining Nitoproof 100 and 120 should be removed with white spirit or kerosene. Spillages of Nitoproof 100 and 120 should be covered with sand or sawdust and later removed as

far as possible by scraping. The use of solvent is not recommended as this may extend the risk of staining.

## Typical applications

Nitoproof 100 and 120 have a wide range of uses and there are few buildings or other structures where they may not be used in some part of the construction to meet a specification or overcome a problem, where a water resistant membrane is required.

Typical applications are :

External tanking of new constructions below ground to inhibit ingress of water, or protection of concrete against sulphate bearing or other aggressive ground water.

## Basements and foundations

Internal tanking of existing below ground structure in seasonal situations, where these are dry at the time of application and adequate restraint against subsequent water pressure can be provided.

## Ground floors

Horizontal DPC courses in concrete sandwich constructions to prevent rising damp through floors and walls.

## Construction joints

Coating of joint faces in concrete floor and wall before placing concrete, increases water tightness of dry joints, particularly where an overlap or tongue and groove features are employed in water retaining structures.

## Bathrooms

Tanking membranes below entire floor tiling or screeds and inside W/C floor recesses, to prevent downward leakage and tracking of water through floor and wall structure.

## Roofs and balconies

DPC membranes laid through sandwich slab constructions and parapet wall to arrest downward ingress of water into the structure.

## Water tanks

Internal water resistant tiling. Also to protect the concrete against effects of chlorinated water, and to inhibit algae growth and facilitate easier cleaning.

Detail application guidance on any of the above and other potential applications is available from Fosroc on request.



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## Estimating

### Packaging

Nitoproof 100: Supplied in 5,20,50 & 200 litre containers.  
Nitoproof 120: Supplied in 73, 15 and 3.75 litre containers.

### Coverage

The following may be used as a guideline.

**Nitoproof 100** - 4.0 to 6.0 m<sup>2</sup> / litre dependent upon porosity and texture of the substrate (see section on priming )

**Nitoproof 120** - 2.0 - 2.5 m<sup>2</sup>/kg on medium to smooth surfaces first primed with Nitoproof 100 gives dry film thickness approx. 250 microns per coat

**Note :** For optimum protection 1 full coat of Nitoproof 100 Primer plus 2 coats of Nitoproof 120 applied in accordance with the above instructions for use and coverage is generally recommended.

### Storage

### Shelf life

Nitoproof 100 and 120 have a minimum shelf life of 12 months under normal ambient temperatures, but they must be stored in a dry shady place and protected from temperatures above 40°C.

It shall be kept away from sources of heat or ignition.

## Precautions

### Health & Safety instructions

Contact with skin or eyes shall be avoided. Splashes shall be removed from skin with soap and water. Use of solvent is not suggested. Any eye contamination should be washed with plenty of water and immediate medical treatment shall be sought.

If accidentally swallowed, medical attention shall be sought immediately. Vomiting should not be induced. Prolonged inhalation of the vapour should be avoided. Adequate ventilation shall be ensured during application of the product.

### Fire

Nitoproof 100 and 120 are flammable.

**Flash point : 37°C**

No smoking or sources of ignition should be allowed and the working area be thoroughly ventilated. In the event of fire, use of fire extinguishers viz.CO<sub>2</sub> or foam is suggested.

### Spillage

Replace lid when not in use. Soak up any spillage with sand or saw dust. Burn or bury in accordance with local regulations.

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### 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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