

Section A : Health, Safety and Environment

A1. PERSONAL SAFETY REQUIREMENTS:

- 1.1 Observe the site owner's Health, Safety and Environment policy at all times and obey all written and verbal instructions from site managers and representatives.
- 1.2 Wear Personal Protective Equipment at all times including hard hat, safety glasses, boots, gloves and dust masks as required. In addition especially for work in hot conditions, sweat bands and bandanas should be used to avoid spoiling caused by sweat drop contamination onto the floor.

A2. CLEANING TOOLS/SPILLS:

Clean spills as they occur, and equipment as necessary, using Fosroc proprietary solvents and equipment cleaners.
Clean site to the site owner's satisfaction prior to final acceptance.

Section B : General

B1. QUALITY CONTROL PROCEDURES:

- maintaining of a Project Log

Product batch numbers must be recorded on delivery along with the compilation of certificates of conformity.

A Project Log should be maintained throughout the course of the project, this should include batch numbers of product components. See Sections B2 and B3 below for additional Project Log requirements.

B2. ENVIRONMENTAL CONDITIONS:

- ideal conditions below should be met, for application work to be carried out. Several readings per day of air and surface temperatures, humidity and dew point should be taken and recorded in the Project Log.

- i) Air temperature +15°C to +25°C
- Surface Temperature +15°C to +25°C
- Materials temperature +15°C to +25°C

Important Note: refer to product data sheets for product application temperature range. In some cases, products can be applied outside this temperature range, however surface appearance may be affected.

- ii) Weather Conditions; The relative humidity must be $\leq 90\%$ and Surface temperature must be at least 3°C above the dew point and rising.

B3. CONCRETE SUBSTRATE CONDITION:

- condition below must be met, for application work to be carried out. Substrate condition, substrate preparation methodology and repair work, primer used and coverage rate should be recorded in the Project Log.

- iii) The concrete must have achieved 75% of its design strength. The base should be a minimum of Grade RC30 of BS 8500-2: 2002 and should not contain a water repellent admixture. The surface strength when assessed using a rebound hammer should be above 25 or the surface tensile strength should exceed 1.5 MPa.

B4. EQUIPMENT:

The following list of equipment must be adopted as a *minimum* requirement.

Protective clothing : Protective overalls
 Good quality gloves, glasses/goggles, dust mask.

Captive shot blasting equipment



Anchorage Groove cutting equipment



Forced action drum mixer

Flow-applied products



Rake-and-trowel applied products



Other mixing options (Flow-applied products only)

Slow-speed forced action drill mixer with helical mixer

Especially recommended is a twin-paddle mixer



Screed Box – optional to assist with spreading rake-and-trowel applied products



Other accessories

Plastic Pails - for mixing



Flat Bladed Knife - for scraping down



Notched Trowel - for spreading



Pin Rake - for spreading



Spiked Roller – for finishing



Trowel - for finishing



Coving Trowel - for coving



Short-haired lambswool roller – for coating



The Applicator must maintain equipment in proper operating condition throughout testing, preparation and installation.



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B5. APPLICATOR:

The client/ main contractor must be satisfied that the applicator has suitable equipment and expertise, and will follow the procedures detailed in this Method Statement and the relevant product data sheets.

B6. SOURCE OF PRODUCTS:

Only Fosroc products are to be used in the application, with such products being sourced from Fosroc directly or from a Fosroc authorised distributor.

B7. STORAGE OF PRODUCTS:

Storage temperature +10 to +30°C.

Keep dry. Keep from freezing. Keep containers tightly closed when not in use. Recommended storage in elevated position in covered, temperature-controlled environment.



Section C : Application Methodology

C1. SYSTEM:

Priming/Scratch Coat	:	Fosroc Nitoflor flow-applied PU cementitious flooring product
Flooring	:	Fosroc Nitoflor flow-applied or trowel-applied PU cementitious flooring product
Coving Mortar Primer	:	Fosroc Nitoprime UR2
Coving Mortar	:	Fosroc Nitoflor Coving U
Sealer coat/ Top coat	:	Fosroc Nitoflor HB300 U

(see individual product data sheet for product and application details)

C2. SURFACE PREPARATION:

- 2.1 All surfaces must be clean and free from debris, loose or flaking material, standing water, oil, grease and organic growth.
- 2.2 Concrete surfaces must be free from laitance and any traces of shuttering, release oils and curing compounds.
- 2.3 Check for soluble salts on surfaces to be coated. Test with Chlor*Test. If amount of soluble salts exceeds recommended limits, treat with Chlor*Rid. Repeat the process until acceptable limits are reached.
Maximum amounts of soluble salts (micrograms per cm²):
Chlorides 3 immersion, 7 non-immersion
Nitrates 5 immersion, 10 non-immersion
Sulfates 10 immersion, 20 non-immersion
- 2.4 Blasting is highly recommended as an effective method of surface preparation and to provide a suitable key. Abrasive blast or shot blast per ICRI Technical Guideline No. 03732 or SSPC SP13. Achieve a concrete surface profile of ICRI CSP-3 to CSP-5. The minimum blast profile must be 75 - 100 microns.

C3. PRIMING/ SCRATCH COATING:

- 3.1 Fosroc Nitoflor PU cementitious flow-applied compound is used to prime/scratch coat the concrete surface.
- 3.2 Mix the entire contents of the hardener, base and aggregate units well, ensure the mixed product is of uniform consistency. This must include a scrape down of powder, as undispersed powder may lead to blistering/crackling of the finished floor. DO NOT dilute the product under any circumstances.



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- 3.3 Spread the mixed product immediately and trowel over the substrate surface. Expected coverage rate is based on a nominal 1mm average thickness of scratch coat but is entirely dependent on the substrate profile.
- 3.4 Allow the scratch to cure for 12 - 48 hours at 20°C before applying the floor topping. If the scratch coat has been allowed to cure for >48 hours then the coat must be thoroughly abraded and a fresh layer of scratch coat applied and allowed to cure.

C4. APPLICATION OF FOSROC NITOFLOOR PU CEMENTITIOUS FLOOR TOPPING:

- 4.1 Mix the entire contents of the hardener, base and aggregate units well, ensure the mixed product is of uniform consistency. This must include a scrape down of powder, as undispersed powder may lead to blistering/cracking of the finished floor. DO NOT dilute the product under any circumstances.
- 4.2 Spread the mixed product immediately according to required coverage rate and finish by spike rolling (flow-applied grades) or trowelling (trowel grades) into the previously applied adjacent area. Ensure anchorage grooves are completely filled. Do not return to spike roll or trowel older applied areas as the product is fast-setting and this action will leave spoiling marks on the applied floor.

C5. TREATMENT OF FIELD/DAY JOINTS, MOVEMENT JOINTS AND COVING:

- 5.1 Anchorage grooves should be cut to a minimum depth and width of 2x the flooring thickness to be laid, at the edges, day joints, up-stands, drains, doorways and at regular points across the floor.
- 5.2 A compromise should be reached over the number of joints designed into the floor. It is good practice to minimise the number of joints to maintain as far as possible a seamless surface that will be easy to maintain. The spacing of movement joints must be determined by the design of the subfloor. All live movement joints in the subfloor must be carried through the synthetic resin flooring. Methods for forming such joints are covered in standard industry guideline documents such as BS8204-6 and The FeRFA Guide to the Specification and Application of Synthetic Resin Flooring.
In all instances the necessity for movement joints and their type and positioning should be agreed at the design stage between all parties concerned.
- 5.3 Nitoflor Coving U mortar is used for coving detail, and coated with Nitoflor HB300 U to achieve the required finish and colour.
- 5.4 Refer to guideline documents such as BS6204-6, and product data sheets for further details. Contact local Fosroc office as necessary.



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C6. ANTI-SLIP FEATURE - NITOFLOL FLOW-APPLIED PRODUCTS

On occasion, an anti-slip feature will be required for areas of floor covered with Fosroc Nitoflor PU cementitious flow-applied product. This can be achieved by incorporating fire-dried silica sand anti-slip grains into Nitoflor HB300 U coating product;

- (i) Apply a coat of Nitoflor HB300 U
- (ii) Apply a full broadcast of anti-slip grains into the wet coating, approx. 4kg/m²
- (iii) Remove excess anti-slip grains by vacuum
- (iv) Apply a second, final coat of Nitoflor HB300 U.

Refer to product data sheets. Contact Fosroc office for further advice as necessary.

Note: Anti-slip profiled surface will not have the same level of cleanability as smooth Nitoflor PU cementitious flow-applied surface profile.

Section D : Maintenance and Cleaning

D1. GENERAL CLEANING INFORMATION

Floor cleaning can be thought of as having two components, a mechanical component and chemical component, these two components should work together to mutual advantage.

The mechanical component – energy – may be applied to the floor by hand with a scrubbing motion. Usually the input is by mechanical agitation e.g. a floor scrubber. High energy inputs may also be achieved by using high pressure washers, hot water washers and steam cleaners.

The chemical component i.e. cleaning solution will dissolve or emulsify the contamination present. Once this has taken place, the removal of the dirty water and rinsing of the floor are the key to successful cleaning. It is important that clean water is used for rinsing.

A small spot test in an inconspicuous area is a worthwhile precaution before applying any new cleaning product. The cleaning maintenance regime should specify the type of equipment, the type of cleaning agent to be used and the frequency of cleaning.

Floors which are kept clean will last longer. Unless the floor is cleaned regularly, fine particles of dust, dirt and debris will build up and act as abrasives when the floor is trafficked. In engineering works, metal swarf is particularly abrasive and if not removed from the floor, can cause damage in a short space of time.

Thus, to maintain a clean, safe and healthy environment, proper management is required including suitable cleaning, vacuum removal and dust control systems (e.g. mats), in addition to routine manual/mechanical sweeping as required.

D2. TYPICAL CLEANING METHODS

2.1 Brush/Mop and bucket

This should be the cleaning method for dealing with spillages – mop for smooth floors and brush for textured floors - but is not suitable for routine maintenance of the floor. In normal everyday usage the brush/mop and bucket may remove heavy soiling, but typically the water is changed infrequently resulting in the floor being wiped with dirty water, spreading a film of dirt uniformly across the floor.

2.2. Scrubbing – Mechanical

This is the preferred method for cleaning, to ensure

- Controlled application of cleaning agent
- Effective scrubbing action
- Continuous supply of clean water
- Continuous removal of dirty water
- Continuous drying of the floor

A number of specialist mechanical scrubbing machines are available, such as combined wet-vacuum scrubber with soft bristles and rotary type scrubber machines.

Sweep the floor to remove loose debris and any accumulation of soil.

Use the appropriate cleaning agent mix - detergent, deodorizer, degreaser, emulsifier, etc.

Apply cleaning agent, diluted as required, into the on-board detergent tank, apply and allow it to react on the floor surface. Agitate mechanically by using the floor scrubber.

Remove dirty water with wet-vacuum machine.

Observe all regulations, which may prohibit the introduction of certain chemical cleaners, solvents and wastes into surface water drains, sewers, open bodies of water or into soil.

Repeat rinse and scrub operations, vacuum clean and allow to dry.

Regular washing with a suitable washer/drier machine may be carried out, normally using a low foam neutral detergent.

D.3 STATIC CONTROLLED FLOORING

Routine cleaning and wear may alter the electrical properties of flooring. Therefore, routine test methods and frequency of tests should be agreed before completion, as should the agency responsible for these tests. The use of inappropriate cleaning regimes may compromise the antistatic performance of the floor. For further details contact local Fosroc office for advice.

D.4. CLEANING MATERIALS

Most cleaning products are formulated to be effective against a range of materials. Some, however, are very specific in terms of the contamination that they are designed to remove. This is often the case with bio-products, which are targeted against specific contaminants such as fats or oils.

Some cleaning materials may have an adverse effect on a specific surface if used in an incorrect concentration, giving rise to effects such as etching, softening or other damage to the floor surface. This can have a cumulative effect as a result of repeated activity. It is therefore recommended to check the suitability of cleaning materials prior to use.

It is highly recommended to perform a small spot-cleaning test in an inconspicuous area prior to general use of any cleaning product. For further details contact local Fosroc office for advice.

- General Purpose Cleanser is an ideal product for resin floor
- Abrasive cleansers must not be used
- Acid based cleansers must not be used
- Strong alkali based cleansers must not be used in concentration form

Detergents are organic materials that are surface active agents, with one end being oleophilic (oil attracting), and are designed to capture contamination and allow it to be taken into the cleaning water and washed away from the floor surface.

These mainly fall into the types Cationic (+), Anionic (-) and Non-ionic (e.g. ammonium salts). In the case of anionic surfactants, mild soapy water or detergent may be used - good for the generation of foam and stabilising dirt in solution.

Specialist products exist for a wide variety of applications including the cleaning of antistatic surfaces of oils, fats and greases etc. In addition there are products that are designed to have a specific effect such as sterilisation, bactericidal activity, disinfection.

D.5. WASTE DISPOSAL

Due consideration should be given to the disposal route for waste water produced during the floor cleaning process. Even when environmentally friendly products have been used, it should not be assumed that the waste water generated is able to be disposed of through the normal drainage system. This will depend on the level and type of contamination present in the solution, the disposal point and the quantities being produced.

D.6. SPILLAGES

Spillages of any liquid should be wiped up or absorbed and removed as soon as possible. This respects Health and Safety responsibility and helps the floor to be maintained in a good condition. Once the spillage is removed, the area should be cleaned as usual with a standard floor cleaner. If an applied topcoat is present on the resin floor, the floor should be inspected to see if the coating remains in good condition. If the coating has been damaged this should be removed mechanically and re-applied.

D.7. GENERAL TIPS AND ADVICE

DO

- Clean the floor before first use.
- Take care when installing equipment.
- Clean regularly.
- Give a higher frequency of maintenance to heavily trafficked areas (e.g. entrances) as the levels of grit, dirt and therefore wear are highest.
- Clean up spillages immediately.
- Remove traces of oil and grease immediately with a detergent solution.
- Ensure that maintenance levels are higher in areas subject to accidental contamination by chemicals or bacteriological or radioactive materials.
- If the resin floor has a textured surface - use brushes rather than mops.
- Use the best quality equipment available to you.
- Ensure that cleaning equipment is well maintained and cleaned.
- Follow the instructions provided by the manufacturers of cleaning chemicals and equipment.

DON'T

- Use excess concentrations of cleaning agents - exceeding the manufacturers' recommended dosage is at best pointless and expensive, and at worst harmful.
- Mix cleaning chemicals and agents - this can also be harmful.
- Use excessive water.
- Use solvents.
- Use synthetic scrubbing pads on textured resin floor finishes. These industrial finishes will cause rapid destruction of the pads.
- Use phenol-based cleaning chemicals - they will cause degradation of resin floor surfaces.



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Section E : References and Sources of Information

- BS8204-6 : 2008 Screeds, bases and in situ floorings – Part 6 Synthetic Resin Floorings – Code of Practice
- The FeRFA Guide to the Specification and Application of Synthetic Resin Flooring.
- The FeRFA Guide to Cleaning Resin Floors.
- CCFRA (Campden and Chorleywood Food Research Group) www.campden.co.uk

Section F : Approval and variations

This method statement is offered by Fosroc as a 'standard proposal' for the application of Fosroc Nitoflor PU cementitious flooring. Any variation to the above system must be approved by Fosroc in writing.

Where alternative methods are to be used, these must be submitted to Fosroc for approval, in writing, prior to commencement of any work. Fosroc will not accept responsibility or liability for variations to the above method statement under any other condition.