Fosroc®
Nitoflor® N

constructive solutions

(Previously known as Durafloor N)

Highly chemically resistant novolac epoxy clear binder, producing various coating and topping application systems

Uses

Nitoflor N is a highly chemically resistant Novolac epoxy coating/ topping system suitable for a number of surfaces including concrete, steel and masonry.

It is principally designed for acid proofing within the mining processing industry and other similar installations where high chemical resistance is required.

Advantages

- High chemical resistance
- Suitable for a range of substrates
- Fast cure properties
- Excellent wear and abrasion resistance
- Versatile - Enables a variety of application techniques

Standards Compliance

AS/ISO 9239.1-2003 Reaction to Fire Tests for Floorings AWTA Test Report 21-001312:

Critical Heat Flux (CHF): 9.5 kW/m² (Mean)

Smoke Value: 172 %.min (Mean)

Description

Nitoflor N is a novolac epoxy for concrete and other hard substrates where aggressive chemical spillages occur and where high wear resistance is required.

Supplied as a clear binder, **Nitoflor N** may be used neat as a clear coating system or added to a variety of fillers to produce various application systems, such as a trowel floor.

A non-slip finish can be obtained to a desired result by the use of any of the Fosroc non-slip aggregates applied between two coats of the clear coating system.

When sealing joints in floors coated with **Nitoflor N, Nitoseal SC600**, a purpose formulated chemically resistant joint sealant should be considered as part of the overall protection system.

Properties

As a clear coating

Mixing ratio:	3:2 (base: hardener by volume)
Pot life*:	30 minutes @ 23°C
Tack free:	4 hours @ 23°C
Maximum overcoat time:	24 hours @ 23°C
Trafficable:	24 hours @ 23°C
Full cure:	7 days @ 23°C
Compressive strength:	85 MPa @ 7 days (Clear coating) 60 MPa @ 7 days (Trowel floor)
Service temperature:	Up to 120°C depending on application
VOC content:	28g / litre

NOTE: *Usable pot life time on site will be greatly reduced if the product is mixed and left in the can - exothermic reaction will occur. (refer to Mixing section)

Chemical Resistance

Chemical	Clear Coating	Trowel Floor
Sulphuric Acid 25%	R	R
Sulphuric Acid 75%	Rc	Rc
Sulphuric Acid 98%	Rc	Rc
Nitric Acid 10%	R	R
Nitric Acid 20%	Rc	Rc
Nitric Acid 32%	Rc	Rc
Nitric Acid 63%	Os	Os
Acetic Acid 25%	S	S
Lactic Acid 10%	R	R
Lactic Acid 25%	S	S
Hydrochloric Acid 10%	R	R
Hydrochloric Acid 36%	Rc	Rc
Phosphoric Acid 25%	Rc	Rc
Citric Acid (Saturated Sol.)	R	R
Tartaric Acid 15%	R	R
Sodium Hydroxide 10%	R	R
Sodium Hydroxide 30%	R	R
Sodium Hydroxide 50%	R	R
Ammonium Chloride 20%	R	R
Dichloromethane	Os	Os
Saturated Salt Solution	R	R
Acetone	Os	Os
Toluene	R	R
Xylene	R	R
Ammonium Nitrate	R	R

Chemical Resistance Coding

R = Resistance to long term immersion (up to 60 days).

Rc = Resistance to regular contact, but discolouration may occur.

S = Resistance to short term immersion (24 hours).

Sc = Resistance to short term immersion (24 hours), but discolouration may occur.

Os = Resistance to occasional splashes.

X = Not resistant.

NB: The above resistance definitions are based on regular / sound housekeeping practices.

Slip resistance test results

System Used	AS/NZS 4586:2013 Appendix A Wet Pendulum Test
Nitoflor N (no additional grit)	P1
Nitoflor N saturated with Nitoflor Anti-Slip Grains 02	P5
Nitoflor N with Nitoflor Anti-Slip Grains 02 @ 20g / m^2	P3

Certificates of slip test results shown are available on request. The results were achieved in controlled laboratory conditions; reasonable variations are to be expected on site, due to site-specific conditions and variances in application. Application of the proposed system on a small test area on site, prior to commencement of works is highly recommended, to confirm actual slip resistance.

Application Instructions

Preparation

Concrete substrates

All concrete should be sound, clean, dry and free from contaminants. Hydro-blasting, captive shot blasting or grit blasting equipment is necessary to ensure that adequate substrate preparation is achieved. Concrete substrates should be blasted with either high pressure water (<3000psi) or steel shot to remove the weak surface layer from the concrete and vacuum cleaned prior to the application of **Nitoflor N**. In bund areas or where uneven substrates are being experienced, wet sand blasting and grinding followed by efficient vacuuming may be required.

Steel surfaces

Steel substrates to be blast cleaned (min Sa $2^{1/2}$ standard of cleanliness). An angular profile amplitude of at least 75 microns is recommended for high-build applications. Application of **Nitoflor N** should be applied as quickly as possible to prepared steel surface before corrosion occurs.

Priming

All substrates on completion of the preparation are to be primed with **Nitoflor N** clear binder or **Nitomortar 903** to provide a minimum wet film thickness of 150 microns. More than 1 coat may be required depending on the porosity of the substrate. When using the clear coating system, the first coat acts as a primer coat. When high build applications are required on vertical upturns or overhead, seeding the wet primer with a suitable clean grit will prevent the screed coat from sliding and provide an additional mechanical key.

Mixing and placing

Mixing

Using accurate measuring jugs, add 1.5 litres of **Nitoflor N** base resin to every 1.0 litre of **Nitoflor N** hardener into a suitable mixing vessel. Accuracy is essential to ensure the product is mixed in ratio to achieve the required cured properties.

Mix thoroughly for a min of 3 minutes using a slow speed mechanical stirrer and a suitable spiral epoxy mixing paddle.

Clear coating

Mix the required quantity of **Nitoflor N** without the addition of fillers.

IMPORTANT: Once mixed the product should be poured into flat, open paint trays to maximise pot life working time. Holding the product in the original mixing can will lead to an exothermic reaction which will significantly reduce the pot life.

Apply first coat by brush or roller at 4 to 5m^2 per litre or slightly heavier if a slip-resistant grit is to be used. When using a slip resistant aggregate broadcast chosen aggregate onto the still tacky first coat at required rate. When the first coat is hard (typically next morning – refer Properties section) sweep off excess grit (if applicable) and re-coat in same manner. It is recommended to apply the second coat at right angles to the first.

If a coloured finish is required, the use of coloured **Nitoflor FC150 HP** as the first coat followed by subsequent coats of the Nitoflor N clear coating should be considered.

Trowel floor

While continuing to mix 2.5 litres mixed binder (1.5 litre base + 1.0 litre hardener) add 12.5 litres **Nitomortar F4 Fillers** (by volume). Once all the components have been added, continue to mix for a further two (2) minutes.

Once mixed apply the **Nitoflor N** trowel floor by spreading the material over the wet or tacky, not tack free, primed surface and compact to achieve a dense 5mm seamless screed. Finish to a desired texture with a steel trowel and allow to cure.

Limitations

Nitoflor N should not be applied on to surfaces known to have rising damp or having a relative humidity reading greater than 80% (ie. moisture content greater than 5%).

Nitoflor N should be applied only when the substrate temperature and the ambient temperature is above 10°C or when the ambient relative humidity is below 85% at the time of placement.

Best performance life expectancy is enhanced by the use of sound housekeeping. The chemical resistance of **Nitoflor N** is reduced slightly due to the addition of fillers therefore when the maximum chemical resistance or stain resistance is required a finishing coat of **Nitoflor N** Clear Coating should be considered.

Supply

Nitoflor N Base 15 litre:	FC605170-15L
Nitoflor N Hardener 10 litre:	FC605175-10L
Nitomortar F4 Fillers 20kg:	FC312060-20KG

Yields / Coverage:

Nitoflor N	Yield / Coverage
As a Clear Coating	4 to 5m² / litre / coat
1.5 litres base resin : 1.0 litre hardener	(mix yield 2.5 litres)
As a Trowel Floor	3m² @ 5mm thick
1.5 litre Base + 1.0 litre Hardener) : 12.5 litres (20kg) Nitomortar F4 fillers	(mix yield 14.9 litres)

The coverage figures given are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures may be reduced.

Storage

Nitoflor N should be kept in a dry store in the original, unopened packs between 5°C and 30°C.

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