



Nitocote® UR512

Two component aliphatic polyurethane protective coating

Uses

Nitocote UR512 provides an easily cleaned chemical and UV resistant protective coating, also suitable for external waterproofing.

Advantages

- Durable : Low maintenance costs
- Non yellowing: Will not yellow on exposure to UV rays.
- Chemical resistant : Excellent resistance to most industrial chemicals
- Hygienic : Seamless surface, easily cleaned

Standards compliance

Nitocote UR512 meets the requirements of UL 94 for resistance to spread of flame.

Description

Nitocote UR512 is a two component, pigmented, aliphatic polyurethane coating possessing good resistance to long term exposure of UV rays and chemical attack.

Technical Support

Fosroc offers technical support & service to specifiers and contractors as well as on-site assistance.

Properties

Mixed density	: 1.315 g/cc
Pot life at 30°C	: Min.1 hour
Recoat time at 30°C	: 2 - 4 hours
Initial cure at 30°C	: 16 hours
Final cure at 30°C	: 5 days
Flash point	: 35 °C
Wet film thickness	: 100 microns/coat
Dry film thickness	: 45-50 microns/coat
No. of coats	: 2
Adhesive bond strength	: > 1.5 N/mm ²
Flammability Test	: Passes the test & meets the requirements as per UL94
Tensile strength (ASTM D412)	: > 3N/mm ²
Elongation (ASTM 2370)	: > 50%

Chemical resistance

Nitocote UR512 is resistant to chemical attack at ambient temperature, under the following exposure conditions

Hydrochloric acid (36%)	:	Occasional contact
Nitric acid (15%)	:	Occasional contact
Sulphuric acid (10%)	:	Regular contact
Citric acid (10%)	:	Occasional contact
Sodium Hydroxide (50%)	:	Occasional contact
Ammonia (10%) Soln.	:	Occasional contact
Bleach concentrate	:	Occasional contact
Urea (Saturated)	:	Regular contact
Sugar (Saturated)	:	Regular contact
Sodium Chloride (Saturated)	:	Regular contact
Methanol	:	Occasional contact
Butanol	:	Occasional contact
Mineral spirits	:	Regular contact
Xylene	:	Occasional contact
Lubrication oil	:	Regular contact
Gasoline	:	Occasional contact

At elevated temperatures or where mixtures of chemicals are involved, the effects may be different than the above results. Consult Fosroc for advice.

Specification clauses

As a protective coating - "Areas as marked on the steel, concrete and/or masonry shall be applied/coated with Nitocote UR512, a two component aliphatic polyurethane coating to a thickness of 90 - 100 microns d.f.t in two coats of application. When exposed to UV rays for long periods, the cured coated film shall not yellow and chalk. The coated surfaces should retain a semi gloss finish. The potlife of the mixed material shall not be less than one hour at 30°C. It shall be recoatable in 2 - 4 hours at 30°C and shall cure fully in 5 days at 30°C. It shall be resistant to spread of flame when tested as per UL94 Standards. It shall develop a minimum bond strength to steel or cementitious substrates of 1.5 N/mm², when tested for Pull Off strength with an Elcometer."

As a waterproof coating- "Providing and applying a two part polyurethane based waterproof coating Nitocote UR512 in 3 coats of application @ 0.1 litre/m²/coat, over rcc slab including sprinkling of clean sand (300 microns - particle size) or, pea gravel and, laying pcc (1:2:4), mixed with integral waterproofing compound, Conplast X421IC, at a dosage of 150ml/50 kg bag of cement, over the fully cured Nitocote

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UR512 coating, as per manufacturer's specifications. It shall be an aliphatic, non yellowing, non chalking polyurethane based waterproof coating; with a minimum bond strength of 1.5 N/mm² to concrete when tested with a Pull Off tester. " The cured film shall be protected with concrete screed / mortar when used on accessible roofs to avoid damage from foot traffic.

Application instructions

Surface preparation

All surfaces must be smooth, sound and free from debris, loose or flaking material and areas of standing water. Surfaces must be free from contamination such as oil, grease, dust, loose particles and organic growth. Concrete surfaces must be fully cured, laitence free and free from any traces of shuttering, release oils and curing compounds.

All surfaces should then be grit blasted to remove all foreign matter and open up blow-holes, and provide a suitable key for Nitocote UR512. All blow holes and imperfections should be filled with Nitomortar FC, epoxy putty.

Mixing

The individual components should be thoroughly stirred before mixing them together. The components should then be mechanically mixed together for atleast 3 minutes using a slow speed (400 - 500 RPM) drill machine attached with a mixing paddle.

Application

Apply Nitocote UR512 with a nylon brush, or a flat pile felt roller, to the prepared substrate at a thickness of 100 microns WFT (45 microns DFT). Allow Nitocote UR512 first coat to dry for 2-4 hours at 30°C and then apply the second coat. When applying Nitocote UR512 as a topcoat over any of the Nitocote range of epoxy systems, it must be applied after 6 hours but within 24 hours of applying the epoxy.

Note : When applying Nitocote UR512, if the moisture content in the substrate is more than 3%, blistering of the coating may occur.

Curing

This coating will become tack free in approximately 2 - 4 hours and be fully cured in 5 days.

Number of coats

Two finish coats are recommended unless used as a top coat for freshly applied epoxies.

Cleaning

Clean tools and equipment immediately after use with Nitoflor Sol. Wash hands and skin with soap, or an industrial hand cleaner.

Limitations

Minimum ambient surface and material temperature must be between 10 to 40°C. For applications outside this range, contact Fosroc for advise. Application of the product should be always on dry substrates.

Storage

Shelf life

Nitocote UR512 has a shelf life of 6 months when stored under normal warehouse conditions in unopened containers. Exposure to moisture greatly reduces the shelf life, particularly that of the hardener.

Estimating

Packaging

Nitocote UR512	-	4 Litres
Nitoflor Sol	-	5 & 20 Litre tins

Coverage

The theoretical coverage is 10 m² /litre/coat at 45-50 microns DFT (100 microns wft). However practical coverage may vary depending on the porosity of substrate, application thickness etc.

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Precautions

Health & Safety

Nitocote UR512 and Nitoflor Sol should not come in contact with skin or eyes nor should they be swallowed.

Avoid inhalation of vapours and ensure adequate ventilation. Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye/face protection.

Should accidental skin contact occur, remove immediately with a resin removing cream followed by washing with soap and water - do not use solvent.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

If swallowed seek medical attention immediately - do not induce vomiting.

For further information, please consult the Material Safety Datasheet.

Fire

Nitocote UR512 and Nitoflor Sol are flammable. Do not use near a naked flame.

Flash Point

Nitoflor Sol - 33°C

Additional information

Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes repair mortars, fluid micro-concretes, chemical resistant epoxy mortars in addition to comprehensive package of protective coatings. In addition, a wide range of complementary products are available. This includes joint sealants, waterproofing membranes, grouts and anchors and specialised flooring materials.

Separate datasheets are available on these products.

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