

NORDCEM

Single-component cementitious powder waterproofing of osmotic nature



CE marking:

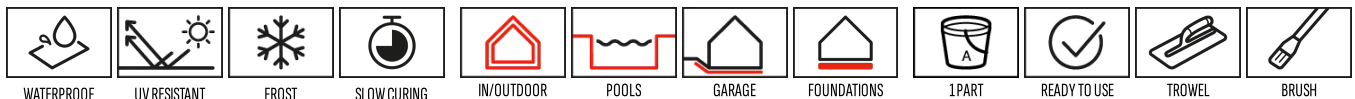
→ EN 1504-2 (C) • Principles: MC-IR

Certifications:

- Contact with drinking water • D.M.
174/2004 (Italian decree)



TECHNICAL FEATURES



FIELD OF APPLICATION

APPLICATIONS

Description

NORDCEM is a special inorganic osmotic-type cement.

NORDCEM penetrates in solution into the capillaries of the support, reacts chemically by fixing the calcium hydrate and irreversibly precipitates into insoluble microcrystals that occlude the internal porosity (chemical waterproofing).

Meanwhile, on the surface of the treated support, NORDCEM leaves an impermeable cementitious layer without pores, capable of withstanding water counterthrust.

The chemical nature of NORDCEM has been specifically designed to allow:

- The breathability of the support.
- The maintenance of the waterproofing effect for a very long time.

In combination with NORDCEM PRIMER applied the day before, NORDCEM develops a waterproofing effect in depth (up to 1.5 cm below the surface) even in structures with low porosity, for example concrete.

This system is ideal to guarantee waterproofing in counter-thrust even in conditions of high water pressure in negative thrust, a situation that typically occurs at the expense of:

CE Marking

NORDCEM responds to the principles defined by EN 1504-9 ("Products and systems for protection

NORDCEM meets the principles defined by EN 1504-9 ("Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and conformity assessment. General principles for use and systems") and the requirements of EN 1504-2 ("Concrete surface protection systems") for the class:

→ MC IR

- For Principle 2 (MC) - Moisture control: 2.2 Coating (C), ZA.1e.
- For Principle 8 (IR) - Increasing Resistivity.

Certifications

► D.M. 174-2004

NORDCEM is suitable for waterproofing concrete or masonry tanks suitable for the containment of drinking water, according to Ministerial Decree 174-2004.

Colour

NORDCEM is available in grey.

NORDCEM

Field of application

NORDCEM is used for:

- Waterproofing of structures subjected to continuous pressure (positive or negative) of water, such as basements, slabs, retaining walls, elevator pits, freight elevators, swimming pools, tanks, canals, tunnels.
- Waterproofing of tanks intended for the containment of drinking water.

Advantages

- NORDCEM is a coating suitable for contact with drinking water.
- NORDCEM allows intervention on substrates saturated with water.
- NORDCEM is quick and easy to apply.

General preparation of the laying surface

- Wash surfaces of any nature with high-pressure water jets.
- Before applying NORDCEM, the substrate must be saturated with water.

Particular care should be taken to achieve the correct degree of saturation of the surface with water before starting laying:

→ The substrate should be wetted repeatedly so as to keep the surface very moist while not having a layer of liquid on the surface.

→ In case of a very dry and/or windy day, it will be necessary to keep the substrate wet continuously to have the right laying conditions.

→ In case of clear difficulty in maintaining the correct hydration conditions of the substrate (for example in a dry and windy climate), it is better to replace all or part of the mixing water with BETONLATEX when preparing NORDCEM, as specified in the section **"Product preparation ► Mixing with BETONLATEX"**.

Specific preparation of the laying substrate

► Cast concrete

- If the casting was made with wooden panels/formwork, remove the spacer bars by cutting them into the concrete for 1-2 cm.
- Also remove nails, dowels, pieces of wood and anything foreign to the concrete from the surface.
- Open the casting joints (where present) by chiseling and/or diamond disc grinding wheel and perform a compensation of a thickness suitable for the hydraulic seal (normally 2 - 3 cm).
- Along the seam lines between horizontal and vertical castings, where there is a casting recovery, demolish the sharp edge by chiseling and create connecting shells of adequate thickness for the water column to be blocked.

The product to be used for the compensation of casting shots and for the realization of the connecting shells between vertical and horizontal elements is NORDGROUTH TIXO.

NORDGROUTH TIXO is a thixotropic fiber mortar with compensated shrinkage, impermeable even to relatively low thicknesses and with final mechanical strengths similar to those of concrete.

For a correct application of NORDGROUTH TIXO, follow the instructions in the relevant Data Sheet.

Product preparation

Depending on the application conditions related to the climate and humidity of the laying support, NORDCEM can be prepared:

- With water only: under normal application conditions without danger of drying out the substrate and the applied product.
- With NORDCEM LAST instead of dough water: in hot, dry weather.

The use of NORDCEM LAST instead of dough water increases the adhesiveness of NORDCEM, slows down its setting and maturation and makes it less sensitive to drying.

► Mixing with water

- Gradually pour the contents of a 25 kg NORDCEM bag into a bucket containing 6 litres of clean water.
- When adding the powder, knead with a low-speed mixer until the mixture has a honeyed consistency.

NORDCEM

- Let the mixture sit for 5 minutes. Attention: this wait is of fundamental importance to ensure an optimal final result.
- Stir briefly.
- Proceed with the application.

► Mix with BETONLATEX

- Pour the specified amount of BETONLATEX (up to 6 L) into a clean bucket.
- Add clean water to the latex until the total volume of the liquid (or weight, if you prefer) reaches 6 L (equal to 6 kg).
- Homogenize the liquid by stirring it mechanically.
- When stirring, pour the contents of a 25 kg bag of NORDCEM into a mixer at low speed, until the mixture has a honeyed consistency.

NOTE: If the mixture is too thick or viscous, adjust its consistency by adding clean water. Do not add latex.

- Let the mixture sit for 5 minutes. Attention: this wait is of fundamental importance to ensure an optimal final result.
- Stir briefly.
- Proceed with the application.

Product application

► On concrete

- Wet the substrate until it is saturated (as indicated in the paragraph "General preparation of the substrate").
- Apply NORDCEM (grout consistency) with a mason's brush to nylon fibers.
- To achieve a minimum thickness of 1.7 mm (equal to 2 kg/m²) it may be necessary to apply NORDCEM several times.

In this case, before reapplying, wait until the first coat of NORDCEM is dry to the touch (5 – 6 hours on average), but never more than 24 hours.

► On masonry walls and retaining walls

The treatment of masonry walls or walls (also in concrete) against the ground requires the realization of a waterproof plaster as described below:

- Wet the wall thoroughly and wait for the water to be absorbed.
- Apply NORDCEM PRIMER as a primer (see Data Sheet).
- Wait until the next day before proceeding with the application of NORDCEM.
- Apply NORDCEM with a nylon bristle mason's brush.
- Wait until the next day.
- Perform a debris on the wall treated with NORDCEM with NORDGROUTH TIXO.
- Wait a few hours, then make a plaster about 2 cm thick with NORDGROUTH TIXO.
- The next day, wet the plastered surface with NORDGROUTH TIXO and apply NORDCEM for a consumption of about 2 kg/m².
- To achieve a minimum thickness of 1.7 mm (equal to 2 kg/m²) it may be necessary to apply NORDCEM several times.

In this case, before reapplying, wait until the first coat of NORDCEM is dry to the touch (5 – 6 hours on average), but never more than 24 hours.

► On products intended for contact with drinking water

- If NORDCEM is used on products intended to come into contact with drinking water, make the waterproofing layer with NORDCEM according to the instructions given in the previous points.
- Before washing surfaces, make sure that the product is completely cured within the suggested waiting times.
- Thoroughly wash surfaces treated with NORDCEM and remove any standing water before final filling.
- Proceed with the final filling of the tanks or the entry into service of the products.

► Recommendations for a correct product curing

NORDCEM

- To obtain a perfect maturation of NORDCEM kneaded with water only, it is recommended to keep the product wet as soon as you start setting.
Inadequate hydration prevents proper curing of the product, causing surface chalking
- In the case of using NORDCEM during hot weather, it is recommended to apply the product in the evening and to keep the product wet after the start of the setting and for the following 48 hours.

Consumption

type of application	minimum consumption	maximum consumption	u.m.	notes
In multiple coats	2,0	6,0	kg/m ²	
Dosage of BETONLATEX as a substitute for mixing water for NORDCEM	4,0	6,0	L/25 kg NORDCEM	-

(1) Dry film thickness applied for minimum consumption: 1.7 mm. Dry film thickness applied for maximum consumption: 5.1 mm.

Tool cleaning

- Fresh product: cleaning with water (also hydrowashing).
- Hardened product: mechanical removal.

Useful tips for laying

- Apply at temperatures between +5 and +30°C.
- Avoid applying NORDCEM directly to surfaces subject to strong sunlight.
- To apply a second coat of NORDCEM over a layer of NORDCEM that is 2–3 days old, you must mix the second coat of NORDCEM with BETONLATEX (see the section “Product Preparation, ► Mixing with BETONLATEX”).
- Approximately half an hour after preparing the mix, the initial setting of NORDCEM occurs.

Technical Data

► PRODUCT IDENTIFICATION DATA		value
Loose Bulk Density, EN 1097-3	kg/L	1,20 ± 0,05
Solid residue	-	100%
Consistency	-	Powder
Color	-	Grey
Maximum grain size, EN 933-1	mm	0,315 ± 0,005
► APPLICATION DATA AND FINAL PERFORMANCE		value
Mixing water	-	(24 ± 0,5)%
Consistency of the mixture	-	Fluid/brushable
Bulk density of fresh mortar, EN 1015-6	kg/L	1,70 ± 0,05
Dough color	-	Grey
Application temperature	°C	from +5 to +30
Duration of the dough	min	120 ± 10
Full curing time (at 23°C, 50% RH)	days	> 28
Depth of water penetration under pressure, thickness 2 mm on concrete, 3 bar, EN 12390-8	mm	0 (waterproof)
Suitable containment of drinking water	-	Suitable

NORDCEM

► TECHNICAL DATA IN ACCORDANCE WITH EN 1504-2

		value
Water vapor permeability, SD equivalent air thickness, thickness 1.7 ± 0.2 mm, dough with WATER, EN ISO 7783	m	0.18 ± 0.02 (Class I)
Water vapor permeability, SD equivalent air thickness, thickness 1.7 ± 0.2 mm, mixture with BETONLATEX, EN ISO 7783	m	0.18 ± 0.02 (Class I)
Capillary absorption and water permeability, dough with WATER, EN 1062-3	kg/(m ² ·√h)	0.097 ± 0.003
Capillary absorption and water permeability, mixture with BETONLATEX, EN 1062-3	kg/(m ² ·√h)	0.037 ± 0.002
Adhesion for direct traction, dough with WATER, EN 1542	MPa	1.1 ± 0.1
Adhesion for direct drive, mixing with BETONLATEX, EN 1542	MPa	1.1 ± 0.1
Reaction to fire (euro-class), dough with WATER, EN 13501-1	-	A1
Reaction to fire (euro-class), dough with BETONLATEX, EN 13501-1	-	NPD

Product storage

- 12 months in a PAPER BAG stored closed, in a dry environment and at a temperature between +5°C and +35°C.
- 24 months in PLASTIC PACKAGING stored closed, in a dry environment and at a temperature between +5°C and +35°C.
- Keep in a dry place.

Packaging

VARIANT	PACKAGE	ADR	PACKAGE / PALLET	COMPONENTS	NOTES
GREY	plastic bag - 10 kg	NO	45 bags		-
GREY	plastic bag - 25 kg	NO	24 bags		-

ADR legend:

NO = NON-DANGEROUS goods

P* = DANGEROUS goods packed in limited quantities (packed as per ADR Chapter 3.4)

Si = DANGEROUS Goods

LEGAL NOTES

The information contained in this Technical Data Sheet is based on the knowledge and experience gained by Nord Resine up to the date of its issue and is for indicative purposes only. It does not constitute a technical specification nor does it imply the assumption of any warranty, express or implied, or liability regarding the results obtainable, which depend on multiple factors beyond the control of Nord Resine.

It is the user's responsibility to verify in advance, also through suitable tests, the suitability of the product for the intended use, compatibility with the substrate, appropriate environmental application conditions, and the execution of the installation according to workmanship standards, assuming all liability arising from the use of the product and the final result of the works.

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EDITION

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