



NORDCEM

Mono-component osmotic cement waterproofing agent in powder

CE marking:

- EN 1504-2 (C) - Principles: MC-IR

Certifications:

- Contatto con acqua potabile D.M. 174/2004



TECHNICAL SPECIFICATIONS



FIELD OF APPLICATION



APPLICATIONS



Description

NORDCEM is a special inorganic osmotic-type cement.

NORDCEM penetrates in solution into the support's capillary pores, reacts chemically by fixing the calcium hydrate and precipitates irreversibly in insoluble micro-crystals that plug the internal pores (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 was specially formulated to allow for:

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

When used in combination with NORDCEM PRIMER applied the day before, NORDCEM develops a deep (up to 1.5 cm beneath the surface) waterproofing effect also in low-porosity structures, such as concrete.

This system is ideal for guaranteeing counterthrust impermeability in the presence of high negative-thrust water pressure, which typically occurs with:

- Floor slabs.
- Foundation slabs.
- Earth-retaining walls.
- Swimming pools.
- Tanks for containing waste and drinkable water.

CE marking

NORDCEM fulfils the principles defined in the EN 1504-9 standard ("Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and evaluation of conformity. General principles for use of products and systems") and to the requirements of the EN 1504-2 standard ("Protection systems for concrete surfaces") for the following class:

- For Principle 2 (MC) - Humidity control: 2.2 Coating (C), ZA.1e.
- For Principle 8 (IR) - Resistance increase through the limitation of the humidity content: 8.2 Coating (C), ZA.1e.

Certifications

NORDCEM is suitable for waterproofing concrete or masonry tanks designed to contain drinking water, according to Italian Ministerial Decree 174/2004.

Colour

NORDCEM is available in the grey version.

Field of application

NORDCEM is used for:

- Waterproofing of structures subjected to continuous water pressure (positive and negative), such as basements,

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foundation slabs, earth-retaining walls, lift cavities, goods hoists, swimming pools, tanks, channels, tunnels.

- Waterproofing of tanks used to contain drinking water.

Advantages

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

General preparation of the laying support

- Wash surfaces of any type with high-pressure water jets.
- The support must be saturated with water.

Special care must be taken to achieve the correct degree of saturation of the surface with water before starting the laying operations:

- the support must be wetted repeatedly so that the surface remains very damp though without any build-up of liquid.
- On very dry and/or windy days, the support must be kept continuously wet to guarantee the correct laying conditions.
- In case of evident difficulties in maintaining the correct laying conditions (e.g. with dry and windy weather), the mix water should be replaced with NORDCEM LAST when preparing NORDCEM, as specified in the paragraph "Preparing the product, ► Preparation with NORDCEM LAST".

Specific preparation of the laying support

► Cast concrete

- If the cast was made with wooden panels/formwork, remove the spacer bars by cutting them inside the concrete for 1–2 cm.
- Also remove from the surface any nails, plugs, pieces of wood and anything foreign to the concrete.
- Open the joints between the concrete layers (where present) using a chisel and/or diamond-disc grinding wheel and restore the adequate thickness for hydraulic sealing (normally 2–3 cm).
- Along the border between horizontal and vertical casts, where there is a casting joint, demolish the sharp edge through chiselling and create fillets of adequate thickness for the water column to be blocked.

The product to be used to repair the casting joints and to make the fillets between the vertical and horizontal elements is NORDGROUTH TIXO.

NORDGROUTH TIXO is a thixotropic, shrinkage-compensated, fibre-reinforced mortar impermeable even at relatively low thicknesses and with final mechanical resistance similar to that of concrete.

For the correct application of NORDGROUTH TIXO, follow the instructions shown in the Technical Sheet.

Preparing the product

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

- With water alone: in normal application conditions without any risk of drying of the support and the applied product.
- With NORDCEM LAST instead of the mix water: in hot and dry weather conditions.

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

► Mix with water

- Gradually pour the contents of one 25 kg bag of NORDCEM into a bucket containing 6 litres of clean water.
- When adding the powder, mix with a low-speed mixer until obtaining a compound with a syrupy consistency.
- Leave the mix to rest for 5 minutes. Warning: this wait is of crucial importance to guarantee an optimal final outcome.
- Shake briefly.
- Proceed with the application.

► Mix with NORDCEM LAST

- Pour into a bucket a 6.5 kg can of NORDCEM LAST.
- Under agitation, pour the contents of a 25 kg bag of NORDCEM and mix using a low-speed mixer until the resulting compound has a syrupy consistency.
- If necessary, adjust the consistency of the mix by adding water.

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- Leave the mix to rest for 5 minutes. Warning: this wait is of crucial importance to guarantee an optimal final outcome.
- Shake briefly.
- Proceed with the application.

Application of the product

► On concrete

- Wet the surface until it is saturated (as indicated in the paragraph, “General preparation of the laying support”).
- Apply NORDCEM (consistency of a slurry) using a block brush with nylon fibres.
- To reach a minimum thickness of 1.7 mm (equal to 2 kg/m²), it could be necessary to apply NORDCEM several times. In this case, before re-applying the product, wait until the first coat of NORDCEM is touch dry (5–6 hours on average), but never more than 24 hours.

► On brick walls and earth-retaining walls

The treatment of masonry walls or other earth-retaining walls (even concrete) requires the creation of an impermeable plaster, as described below:

- Wet the wall thoroughly and wait until the water is absorbed.
- Apply NORDCEM PRIMER as a primer (see Technical Sheet).
- Wait until the following day before applying NORDCEM.
- Apply NORDCEM using a block brush with nylon bristles.
- Wait until the following day.
- Scratch-coat the wall treated with NORDCEM using NORDGROUTH TIXO.
- Wait a few hours then create a plaster roughly 2 cm thick using NORDGROUTH TIXO.
- The following day, wet the surface plastered with NORDGROUTH TIXO and apply NORDCEM for a consumption of roughly 2 kg/m².
- To reach a minimum thickness of 1.7 mm (equal to 2 kg/m²), it could be necessary to apply NORDCEM several times. In this case, before re-applying the product, wait until the first coat of NORDCEM is touch dry (5–6 hours on average), but never more than 24 hours.

► On objects that come into contact with drinking water

- If NORDCEM is used on objects that come into contact with drinking water, create the waterproofing layer with NORDCEM by following the instructions given in the previous points.
- Before washing the surfaces, make sure that the product has hardened completely by observing the recommended waiting times.
- Thoroughly wash the surfaces treated with NORDCEM and eliminate any stagnant water before the definitive filling.
- Proceed with the definitive filling of the tanks or commission the structures.

► Suggestions for the correct curing of the product

- For optimal curing of NORDCEM mixed with water alone, we recommend keeping the product wet as soon as it starts to set.

In case of insufficient hydration, the product will not cure completely, causing the surface to chalk.

- If NORDCEM is used during the hot season, we recommend applying the product at night and to keep it wet after it starts setting and for the successive 48 hours.

Consumption

type of application	minimum consumption	maximum consumption	UoM	dilution
-	2,0	6,0	kg/m ²	-

Dry film thickness for minimum consumption = 1.7 mm.

Dry film thickness for maximum consumption = 5.1 mm.

Cleaning of tools

- Wet product: clean with water (including a power wash).
- Hardened product: remove mechanically.

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Useful application tips

- Apply at temperatures between +5 and +30°C.
- Avoid applying NORDCEM directly on surfaces subject to strong sunlight.
- To apply a second coat of NORDCEM on one layer of NORDCEM older than 2–3 days, mix the second coat of NORDCEM with NORDCEM LAST (refer to the paragraph, “Preparing the product” ► Mix with NORDCEM LAST).
- Roughly half an hour after preparing the mix, verify whether NORDCEM starts setting.

This implies a considerable thickening of the mix. To continue with the application, it is possible to add water (the least possible) and mix.

Technical data

► PRODUCT IDENTIFICATION DATA	UoM	value
Density in bunch, EN 1097-3	kg/L	1,20 ± 0,05
Solid residue	-	100%
Consistency	-	Powder
Colour	-	Grey
Maximum grain size, EN 933-1	mm	0,315 ± 0,005
► APPLICATION DATA AND FINAL PERFORMANCES	UoM	Value
Mix water	-	(24 ± 0,5)%
Consistency of the mix	-	Fluid/brushable
Density of the mix, EN 1015-6	kg/L	1,70 ± 0,05
Colour of the mix	-	Grey
Application temperature	°C	from +5 to +30
Duration of the mix	min	120 ± 10
Full curing time (at +23°C, 50% R.H.)	days	> 28
Depth of penetration of the water under pressure, thickness 2 mm on concrete, 3 bar, EN 12390-8	mm	0 (waterproof)
Suitability for containing drinking water	-	Suitable
► TECHNICAL DATA IN CONFORMITY TO EN 1504-2	UoM	value
Permeability to water vapour, equivalent air layer thickness SD, thickness 1.7 ± 0.2 mm, mix with WATER, EN ISO 7783	m	0.18 ± 0.02 (Class I)
Permeability to water vapour, equivalent air layer thickness SD, thickness 1.7 ± 0.2 mm, mix with NORDCEM LAST, EN ISO 7783	m	0.18 ± 0.02 (Class I)
Capillary absorption and permeability to water, mix with WATER, EN 1062-3	kg/(m ² ·√h)	0,097 ± 0,003
Capillary absorption and permeability to water, mix with NORDCEM LAST, EN 1062-3	kg/(m ² ·√h)	0,037 ± 0,002
Direct tensile adhesion, mix with WATER, EN 1542	MPa	1,1 ± 0,1
Direct tensile adhesion, mix with NORDCEM LAST, EN 1542	MPa	1,1 ± 0,1
Fire reaction (Euroclass), mix with WATER, EN 13501-1	-	A1
Fire reaction (Euroclass), mix with NORDCEM LAST, EN 13501-1	-	F

Storage of the product

- 12 months in the closed PAPER BAG, in a dry place at a temperature between +5°C and +35°C.
- 24 months in the closed PLASTIC PACKAGING, in a dry place at a temperature between +5°C and +35°C.
- Protect the product against humidity.

Packages

VARIANT	PACKAGE	ADR	PACKAGES PER PALLET	COMPONENTS
Grey	25 kg bag	NO	48 sacchi	
Grey	fustino da 10 kg	NO	60 fustini	
Grey	fustino da 20 kg	NO	33 fustini	

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Legenda ADR:

NO = merce NON PERICOLOSA

LEGAL NOTES

Advice on how to use our products corresponds to the current state of our knowledge and does not involve the assumption of any guarantee and / or responsibility for the final result of the work. They do not refore exempt the customer from the responsibility of verifying the suitability of the products for the use and the prefixed purposes through preventive tests. The website www.nordresine.com contains the latest revision of this datasheet.

EDITION

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