

NORPHEN VASCHE

Two-component epoxy waterproofing agent for the coating of tanks and ducts, resistant to high aggressiveness water



CE marking:

→ EN 1504-2 (C) • Principles: PI-MC-PR-RC-IR



SPECIFICATIONS



FIELD OF APPLICATION



APPLICATIONS



Description

NORPHEN VASCHE is a bi-component epoxy coating, consisting of:

- Component A: mixture of liquid epoxy pre-polymers, pigments, modifiers, special fillers and solvents.
- Component B: copolymerization amine and solvents.

Thanks to its body, NORPHEN VASCHE can be applied both horizontally and vertically at high thicknesses allowing you to waterproof all types of tanks and surfaces with a few simple steps.

When matured, NORPHEN VASCHE gives rise to a hard and flexible film, totally impermeable (even at low thickness), which has good chemical resistance against wastewater at extreme pH (strongly alkaline or acidic liquids).

CE marking

► EN 1504-2

NORPHEN VASCHE 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 product

→ PI-MC-PR-RC-IR

- For Principle 1 (PI) - Protection against penetration risks: 1.3 Coating (C), ZA.1d.
- For Principle 2 (MC) - Humidity control: 2.2 Coating (C), ZA.1e.
- For Principle 5 (PR) - Physical Strength: 5.1 Coating (C).
- For Principle 6 (RC) - Chemical Resistance: 6.1 Coating (C).
- For Principle 8 (IR) - Resistance increase through the limitation of the humidity content: 8.2 Coating (C), ZA.1e.

Colour

NORPHEN VASCHE is available in a wide range of colors or in neutral version (COLORABLE), to be pigmented with the special EPOXIDE-based coloring pastes of the NR E TINTOMETRIC SYSTEM or with a special EPOXY PREMIX.

Dyes are also made on specific request.

For information contact the Nord Resine Technical Service at color@nordresine.com.

Keep in mind, however, that the product has a tendency to a slight yellowing.

Field of application

NORPHEN VASCHE is used in:

- construction of waterproofing coatings for concrete or metal tanks intended for the containment of liquids with medium acidity or strong alkalinity, in particular for black water purification tanks;
- construction of linings of tanks/cisterns for non-potable water;

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- Construction of linings of drainage or drainage channels, also crossed by fluids in turbulent regime and/or with suspended solids.

Advantages

- NORPHEN VASCHE has a pasty structure that makes it easy to apply even in high thickness and vertically.
- NORPHEN VASCHE has a very long pot-life.
- NORPHEN VASCHE possesses high mechanical strength.
- NORPHEN VASCHE has a high chemical resistance.
- NORPHEN VASCHE preserves for a long time the chemical/physical resistances even in situations of high heavy use.

Specific preparation of the laying support

► *New concrete surfaces*

- Grind with a grinding wheel equipped with a diamond blade.
- Fill the spacer holes
- If necessary, skim and grind vertical surfaces with:
 - GROVE SKIM for thicknesses up to 5 mm;
 - GROVE 30 for thicknesses from 5 to 30 mm;
 - NORDGROUTH TIXO for thicknesses over 30 mm.
- If a vapour barrier is required, skim with W3 WATERPROOFING.
- On the bottom of the products, grind if necessary with GROVE PRIMER ECO + GROVE SCREED (see Technical Data Sheets).
- Make the shelling in the corners with GROVE RAPIDO (see Technical Data Sheet).

► *Old concrete surfaces*

- The substrate must be carefully examined to ensure that it is a suitable and structurally sound base.
- Depending on the state of the surface, the type of treatment to be carried out must be chosen:
 - washing with hot pressure water;
 - diamond grinding;
 - sandblasting (with grit suitable for the type of removal to be carried out);
 - scarifying or shot peening (for horizontal surfaces only).

In this way, dust, dirt, grease, oil, old adhesives or paints, efflorescence, rust, mold and other foreign materials will be removed or the layer of damaged concrete will be removed to get to healthy concrete.

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► *Carbon steel*

- Remove rust and/or any traces of old coatings by mechanical abrasion (better sandblasting grso Sa 2.5).
- Apply a coat of NORPHEN FONDO MA (see Technical Data Sheet) as a cold galvanizing agent and adhesion promoter for the subsequent application of NORPHEN VASCHE.
- Make the shells in the corners with PU SEAL (see Data Sheet).

Preparing the product

- Shake the Comp. B well.
- Mix the Comp. A with professional low-speed mixer.
- Pour NORPHEN VASCHE Comp. B into Comp. A and mix thoroughly with a professional low-speed mixer.
- In case of partial use of the package, dose components A and B of NORPHEN VASCHE in the precise ratios provided by the manufacturer.

Always use a precision scale for dosing.

- The product is ready to use, however it can be adjusted in viscosity by adding SOLVENT FOR NORPHEN.

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Application of the product

- Apply by roller, brush or spray (airless systems suitable for flammable products)
- Apply NORPHEN VASCHE in several coats spaced 8 – 12 hours apart until the designed thickness is reached (see Consumption Table in the next paragraph).
- Optimal indicative consumption: 0.25 – 0.30 kg/m² per coat, both horizontally and vertically.
- Wait at least 7 days (at +20 °C) for the use of products treated with NORPHEN VASCHE.

NOTE: To improve the adhesion of the product to concrete supports, the first coat of NORPHEN VASCHE can be diluted with 5 – 10% SOLVENT FOR NORPHEN. This facilitates the penetration of the product inside the laying support.

Consumption

type of application	minimum consumption	maximum consumption	u.m.	notes
For small-size tanks without movement of water	0,50	0,55	kg/m ²	(1)
For medium-large tanks with water movement (in several coats)	0,75	0,80	kg/m ²	(1)
Channels, tanks with strong water movements (application with VETROMAT 22 reinforcement)	2,0	2,2	kg/m ²	(1)

(1) Possible viscosity correction with SOLVENTE PER NORPHEN.

Cleaning of tools

- Fresh product: cleaning with ACETONE or nitro thinner.
- Hardened product: mechanical removal, soaking for at least 24 hours in ACETONE or nitro thinner or use of paint strippers (FLUID STRIPPER or GEL STRIPPER) or heat gun.

Useful application tips

- When applied in poorly aerated areas, it is advisable to adequately ventilate the environment and protect the airways using a dust mask equipped with A organic vapour filters (brown strip) or combined ABEK filters (brown-yellow-greygreen strip), as per t
- Mix components A and B in precise ratios: in case of partial use of the packages, weigh the components with a scale according to the ratio shown on the label.
- Do not allow more than 48 hours to elapse between coats.
- At temperatures below +20°C, the viscosity of the product increases significantly, making it difficult to apply by roller. Store the product in a heated place before applying it.
- Carefully read the Safety Data Sheets of all products involved in the cycle NORPHEN VASCHE before use.

Technical data

► PRODUCT IDENTIFICATION DATA		value
Density (comp. A) at 23 °C, 50%RH, EN ISO 1675	kg/L	1,446 ± 0,008
Density (comp. B) at 23 °C, 50%RH, EN ISO 1675	kg/L	0,981 ± 0,003
Density (A+B) at 23 °C, 50 %RH, EN ISO 1675	kg/L	1,271 ± 0,008
Dry residue (125°C, 1 hour), A+B, ISO 3251	-	(85 ± 3)%
Appearance (Component A)	-	Colored pasty liquid with solvent odor
Appearance (Component B)	-	Straw fluid liquid with solvent odour

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► APPLICATION DATA AND FINAL PERFORMANCE		value
Mixing ratio by weight (A:B)	-	2 : 1
Pot-life (thermometric), +23°C to +40°C, EN ISO 9514	Min	40 ± 6
Application temperature	°C	from +5 to +35
Surface drying time (23°C, 50%RH), EN ISO 9117-3	Hours	6 ± 1
Standby interval between two successive coats (23°C, 50%RH)	Hours	8 – 12
Full ripening time (at 23°C, 50% RH)	days	7
► TECHNICAL DATA IN ACCORDANCE WITH EN 1504-2		value
CO2 permeability, air thickness SD(CO2) equivalent, thickness 0.30 mm, EN 1062-6	m	277 ± 14
Wear resistance – Taber method, grinding wheel H22, 1000 rpm, load 1 kg, EN ISO 5470-1	Mg	250 ± 10
Water vapour permeability, SD equivalent air thickness, thickness 0.435 mm, EN ISO 7783	m	23 ± 2 (Class II)
Capillary absorption and water permeability, EN 1062-3	kg/(m²•vh)	0,0021 ± 0,0004
Grip for direct drive, EN 1542	Mpa	3.6 ± 0.3 (Substrate failure)
Resistance to thermal shock, EN 13687-5	Mpa	5.1 ± 0.2 (Support Breakage)
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Resistance to severe chemical attack, Group 1: Gasoline, EN 13529	-	Class II
Resistance to severe chemical attack, Group 9: aqueous solutions of organic acids up to 10% (test liquid: acetic acid 10%), EN 13529	-	Class I
Resistance to severe chemical attack, Group 10: inorganic acids up to 20% and acid hydrolysis salts in aqueous solution (pH < 6) except hydrofluoric acid and oxidizing acids and their salts (test liquid: 20% sulphuric acid), EN 13529	-	Class I
Resistance to severe chemical attack, Group 10: inorganic acids up to 20% and acid hydrolysis salts in aqueous solution (pH < 6) except hydrofluoric acid and oxidizing acids and their salts (test liquid: hydrochloric acid 37%), EN 13529	-	Class I
Resistance to severe chemical attack, Group 11: inorganic bases and their alkaline hydrolysis salts in aqueous solution (pH > 8) except ammonium solutions and oxidising solutions of salts (test liquid: 20% sodium hydroxide), EN 13529	-	Class II
Resistance to severe chemical attack, Group 12: solutions of non-oxidizing inorganic salts with pH = 6 – 8 (20% sodium chloride test liquid), EN 13529	-	Class II
Impact resistance (class), measured on MC coated concrete samples (0.40) according to EN 1766, EN ISO 6272-1	N•m	> 4 (Class I)

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► **CHEMICAL RESISTANCE EN ISO 2812-3** (Evaluation of the results of chemical resistance tests: 1 = disintegration of the product, 5 = no alteration. For the complete scale see Tab. 1, Appendix A)

	value
Hydrochloric acid 37% in water	- 5
Sulfuric acid 30% in water	- 5
Phosphoric acid 20% in water	- 3
Acetic acid 10% in water	- 5
Ammonia 15% in water	- 5
Soda (sodium hydroxide) 50% in water	- 5
Soda (sodium hydroxide) 30% in water	- 5
Hydrogen peroxide 3.5% (12 volumes)	- 4
Mixture of acetic acid (1%) and hydrogen peroxide (0.5%) in water	- 4
Denatured ethyl alcohol	- 2
Cyclohexane	- 5
Solvesso 100	- 1
Ethyl acetate	- 1
Technical acetone	- 1
Diesel oil	- 5
Green petrol	- 5

Product storage

- 24 months in the original packaging closed, in a dry, covered environment, protected from sunlight and at a temperature between +10°C and +34°C.
- Protect the product against frost.

Packages

VARIANT	PACKAGING	ADR	PACK / PALLET	COMPONENTS	NOTE
RAL 7040	(A+B) - 9 kg	SI'	-	A = 6 kg (steel pail) B = 3 kg (tin can)	
TIER 1 COLOUR	(A+B) - 9 kg	SI'	-	A = 6 kg (steel pail) B = 3 kg (tin can)	
TIER 2 COLOUR	(A+B) - 9 kg	SI'	-	A = 6 kg (steel pail) B = 3 kg (tin can)	
TIER 3 COLOUR	(A+B) - 9 kg	SI'	-	A = 6 kg (steel pail) B = 3 kg (tin can)	
TIER 4 COLOUR	(A+B) - 9 kg	SI'	-	A = 6 kg (steel pail) B = 3 kg (tin can)	

ADR legend:

NO = NON DANGEROUS goods

P* = DANGEROUS goods packed in limited quantities (packaged as per Chap. 3.4 ADR)

SI = DANGEROUS goods

LEGAL NOTES

Any advice concerning the methods of use of our products reflects the current state of knowledge and does not imply any guarantee and/or responsibility as to the outcome of the application. Consequently, the customer must verify the product's suitability for the intended use and purposes by testing the product in advance. The Internet website www.nordresine.com contains the latest revision of this technical sheet: in case of any doubts, verify the date of revision (where missing, use the date of issue) by consulting the "PRODUCTS" section.

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EDITION

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