CE | RIVESTIMENTI IN RESINA | EN 13813 | DESIGNAZIONE | SR

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NORPHEN 300

Solvent-free, anti-mould, self-levelling epoxy coating applicable to various thicknesses for industrial floors.

CE marking:
• EN 13813 - Designation: SR

Certifications:
• EN 15457 - Anti-mould properties: 0

TECHNICAL SPECIFICATIONS

FIELD OF APPLICATION

APPLICATIONS

Description
NORPHEN 300 is a bi-component epoxy product that can be used to formulate coloured and semi-glossy coatings for concrete floors.
The product is made up of:
• component A: a mixture of liquid epoxy pre-polymers and special fillers;
• component B: co-polymerisation amine.
Coatings made with NORPHEN 300 are very easy to clean/disinfect and feature considerable hardness, resistance to abrasion and good general chemical resistance, while retaining good flexibility.
Besides this, NORPHEN 300 creates a coating with a pleasant surface appearance that is impermeable, semi-glossy, easy to clean, suited above all to environments requiring special hygienic measures (refer to the “Certifications” paragraph) and ease of maintenance.
NORPHEN 300 can be finished with other products in order to enhance its final characteristics:
► NORPHEN 200 HCR (see Technical Sheet) → epoxy coating with high chemical resistance;
► NORDPUR ESTERNI (or TIPEWALL) (see Technical Sheets) → solvent-based aliphatic polyurethane systems for improving the resistance to yellowing.

CE marking
► EN 13813
NORPHEN 300 complies with the principles envisaged in the EN 13813 standard (“Screed material and floor screeds - Screed materials: Properties and requirements”) with the following designation:
→ SR – B2.0 – AR1 – IR4
• Synthetic resin screed (SR)
• Bond strength: 3.5 MPa (B2.0)
• BCA wear resistance: 79 micron (AR1)
• Impact resistance: 4 Nm (IR4).

Certifications
► NORPHEN 300 withstands mould growth as per the UNI EN 15457 standard:
→ Class 1.

Colour
NORPHEN 300 is available in a wide range of colours and also in the neutral version (COLOURABLE), to be pigmented with the relevant EPOXY colouring pastes of the NR E COLOUR MIXING SYSTEM and with the relevant EPOXY PREMIX.
We can also make colours on specific request.

NORPHEN 300

Highly saturated colours and the various shades of white cannot be made.
For information, contact the Nord Resine Technical Service at color@nordresine.com.

Field of application
NORPHEN 300 is an exceptionally fluid product (very low viscosity) with high self-levelling power, characteristics which make it ideal for creating coatings for concrete floors.
In particular, NORPHEN 300 can be used as a:
• Coating for concrete floors with 0.2–0.3 mm thickness → applied with a trowel + roller on a substrate prepared with FONDO SL (see Technical Sheet).
• Self-levelling coating with 0.6–0.8 mm thickness → applied with a notched trowel on a substrate prepared with FONDO SL (see Technical Sheet).
• Non-slip self-levelling coating with high resistance to abrasion, for damp environments → mixed with 0.3–0.9 COLOURED QUARTZ and applied using a smooth steel trowel on the substrate prepared with FONDO SL and sprinkled with a thin layer of 0.1–0.6 NATURAL QUARTZ (see Technical Sheet).
• Top coat for multi-layer floors in food processing factories → applied with NYLON TROWEL (model L400) on a surface prepared with MALTA RAPIDA 12 or MALTA RAPIDA 13 (sprinkled until saturation).
As a top coat with high chemical resistance, it can be applied to NORPHEN 200 HCR with a roller.
• Coloured base coat for flooring styled with AQUALAMINE, glitter etc., and finished with transparent NORDPUR ESTERNI.

Advantages
• NORPHEN 300 allows for creating various types of coatings with highly variable thicknesses, applied with a roller, float or trowel.
• NORPHEN 300 is a highly inexpensive product.
• NORPHEN 300 is easy to use.
• NORPHEN 300 does not generate air bubbles during use.
• NORPHEN 300 can be further finished using high-performance finishes with extremely low costs and consumption.
• NORPHEN 300 is suitable for laying during both winter and summer.

General preparation of the laying support
NORPHEN 300 is always applied on a surface that has been prepared with FONDO SL, or with a cycle that involves a treatment for preparing the substrate to a considerable thickness by sprinkling with NATURAL or COLOURED quartz sands.
When preparing the support, you need to follow the state-of-the-art instructions for resin floors:
• Le superfici di posa devono essere strutturalmente sane, pulite, prive di materiali incoerenti e asciutte (percentuale di umidità non superiore al 3,5% misurata con il metodo al carburo secondo ASTM D4944 o UNI 10329). • In caso di umidità superiore a 3,5% o in presenza di umidità di risalita, preparare la superficie con NORDCEM PRIMER, W3 IMPERMEABILIZZANTE o Q-PRIMER + Q-RASANTE (vedi Schede Tecniche).
In case of doubts, contact the Nord Resine Technical Department (support@nordresine.com).

• Application in environments without transiting forklift trucks:
→ compressive strength of the substrate ≥ 25 MPa;
→ pull-off resistance ≥ 15 MPa.

• Application in environments with transiting forklift trucks (even with hard wheels):
→ compressive strength of the substrate ≥ 50 MPa;
→ pull-off resistance ≥ 30 MPa.

Specific preparation of the laying support
The preparation of the concrete surface (old or new) can be made via:
• acid wash;
• diamond-wheel grinding;
• shot peening;
• milling;

NORPHEN 300

depending on the application method and thickness and on the final intended use of the floor:

► Application to a low thickness (0.2–0.3 mm), smooth top coat:
• Subject the laying surface to an acid wash.
• Apply one coat of FONDO SL with a roller (consumption: roughly 0.15–0.20 kg/m²).
• Proceed with the application of NORPHEN 300 (using a roller).

► Self-levelling application with 0.6–0.8 mm thickness, smooth top coat:
• Grind the laying surface using a diamond grinder.
• Apply a skim coat with FONDO SL for a consumption of roughly 0.45 kg/m², loaded with 50% by weight of 0.1–0.3 mm NATURAL QUARTZ sand.
• Proceed with the application of NORPHEN 300 (self-levelling).

► As a top coat on multi-layer floors (MALTA RAPIDA 12, MALTA RAPIDA 13 or STRATOFLEX sprinkled with QUARTZ sand until saturated):
• Sand and vacuum the surface.
• Proceed with the application of NORPHEN 300 loaded (self-levelling).

► As a self-levelling coating (thickness 0.7 mm), loaded with the smooth top coat:
• Grind the laying surface using a diamond grinder.
• Apply, using a smooth trowel, one coat of FONDO SL loaded at 50% by weight with 0.1–0.3 NATURAL QUARTZ sand for a consumption of roughly 0.45 kg/m².
• Lightly sprinkle with 0.1–0.6 mm NATURAL QUARTZ sand for a consumption of roughly 0.8 kg/m²;
• Proceed with the application of NORPHEN 300 loaded (self-levelling).

► As a self-levelling coating (thickness 0.7 mm), loaded with the non-slip top coat:
• Grind the laying surface using a diamond grinder.
• Apply, using a smooth trowel, one coat of FONDO SL loaded at 50% by weight with 0.1–0.3 NATURAL QUARTZ sand for a consumption of roughly 0.45 kg/m².
• Lightly sprinkle with 0.1–0.6 mm NATURAL QUARTZ sand for a consumption of roughly 0.8 kg/m²;
• Proceed with the application of NORPHEN 300 loaded (self-levelling).

► As a finishing coat sprinkled with LAMINE or MICROLAMINE
• Grind the laying surface using a diamond grinder.
• Apply one coat of FONDO SL for a consumption of roughly 0.15–0.20 kg/m²;
• Proceed with the application of NORPHEN 300 (using a trowel and roller).

NOTE: in case of doubts regarding the choice of the treatment, contact the Nord Resine Technical Department (support@nordresine.com).

Preparing the product
► Non-loaded product (for low-thickness and self-levelling applications, finishing of multi-layer floors or as a base coat for LAMINE or MICROLAMINE):
• Homogenise the contents of the bucket with comp. A with a low-speed professional mixer, avoiding the incorporation of air as much as possible.
• Pour NORPHEN 300 comp. B into comp. A and mix thoroughly using a low-speed professional mixer.

► As a self-levelling coating (thickness 0.7 mm), loaded with the non-slip top coat:
• Prepare NORPHEN 300 A+B.
• Add 60% by weight on A+B of 0.3–0.9 COLOURED QUARTZ sand.
• Mix thoroughly.

► As a self-levelling coating (thickness 0.7 mm), loaded with the smooth top coat:
• Prepare NORPHEN 300 A+B.
• Add 60% by weight on A+B of 0.3–0.9 COLOURED QUARTZ sand.
• Mix thoroughly.

NORPHEN 300

Application of the product
► Application to a low thickness (0.2–0.3 mm), smooth top coat:
• Apply using a roller or, preferably, with a trowel (to spread the product) and roller (to even out the product).

► Self-levelling application with 0.6–0.8 mm thickness, smooth top coat:
• Apply with a notched trowel or spatula.

► As a top coat on multi-layer floors (MALTA RAPIDA 12, MALTA RAPIDA 13 or STRATOFLEX sprinkled with QUARTZ sand until saturated):
• Apply with NYLON TROWEL (model L400) on the surface prepared with MALTA RAPIDA 12, MALTA RAPIDA 13 or STRATOFLEX sprinkled with QUARTZ sand until saturated.

► As a self-levelling coating, loaded with the smooth top coat:
• Apply using a notched steel trowel on the substrate prepared with FONDO SL and sprinkle a thin layer of 0.1–0.6 NATURAL QUARTZ (see Technical Sheet).
• Pass over the treated surface with a spiked roller to eliminate the air trapped in the layer.

► As a self-levelling coating, loaded with the non-slip top coat:
• Apply using a smooth steel trowel on the substrate prepared with FONDO SL and sprinkle a thin layer of 0.1–0.6 NATURAL QUARTZ (see Technical Sheet).

► As a finishing coat sprinkled with LAMINE or MICROLAMINE
• Prepare NORPHEN 300 A+B (of the chosen colour depending on the colour of LAMINE) and apply it, adjusting the thickness with a smooth steel trowel and rolling the surface when wet to spread the product uniformly (consumption: 0.3–0.4 kg/m²).
• When fresh, sprinkle the surface with LAMINE or MICROLAMINE for a consumption of 0.5–0.7 kg/m².
• After hardening, remove any excess LAMINE or MICROLAMINE, gently sand with an orbital sander and vacuum the dust.
• Apply a first coat of NORDPUR ESTERNI TRASPARENTE with a soft rubber float for a consumption of around 0.25 kg/m².
• As soon as possible, apply a second coat of NORDPUR ESTERNI with a roller for a consumption of around 0.1 kg/m² for a highly glossy final surface, or NORDPUR FINISH MAT for a consumption of around 0.12 kg/m² for a matt surface.

Consumption
To create a coating around 1 mm thick, it is necessary to apply roughly 1.75 kg/m2 of product (A+B).

type of application	minimum consumption	maximum consumption	UoM	dilution
Application to a low thickness (0.2–0.3 mm), smooth finish, 1 coat	0,35	0,35	kg/m²	-
Self-levelling application with 0.6–0.8 mm thickness, smooth top coat	0,70	1,00	kg/m²	-
As a top coat on multi-layer floors (MALTA RAPIDA 12, MALTA RAPIDA 13 or STRATOFLEX sprinkled with QUARTZ sand until saturated)	1,00	1,00	kg/m²	-
As a self-levelling coating (thickness 0.7 mm), loaded, with smooth or non-slip finish	0,70	0,80	kg/m²	-
As a base coat for aesthetic finishes sprinkled with LAMINE	0,30	0,40	kg/m²	-

Cleaning of tools
• Wet product: clean with ACETONE or nitro thinner.
• Hardened product: remove mechanically, soak for at least 24 hours in ACETONE or nitro thinner, or use paint

NORPHEN 300

strippers (FLUID STRIPPER or GEL STRIPPER) or a thermal gun.

Useful application tips

• Adding solvents to NORPHEN 300 may facilitate the application easier and, up to 5% by weight, can improve the “non-slip” characteristics of the applied product.
• We do not recommend diluting NORPHEN 300 to apply a thin layer, as it can create patches with different sheen and cause flaming of the colour.
• When multiple coats are applied, coat the surface over the following day or maximum after 48 hours.
• During the cold season, low temperatures increase the viscosity of the product making it difficult to apply with a roller.
• The curing of NORPHEN 300 in cold conditions slows down the development of its mechanical properties and creates a coating with a matt appearance.
• During the cold season, transfer the product to a heated environment before applying it and guarantee curing temperatures always above +13°C.
• During the warm season, store the product’s containers in a cool environment and use a scale to divide the packages, given that a small quantity of product must be prepared for each mix.
• Mix components A and B of NORPHEN 300 is the precise ratios indicated by the manufacturer.
• Read the Safety Sheet carefully.

Technical data

► PRODUCT IDENTIFICATION DATA	UoM	value
Density (comp. A) at 23°C, 50% R.H., EN ISO 1675	kg/L	2,06 ± 0,05
Density (comp. B) at 23°C, 50% R.H., EN ISO 1675	kg/L	1,02 ± 0,04
Density (A+B) at 23°C, 50% R.H., EN ISO 1675	kg/L	1,78 ± 0,05
Appearance (Component A)	-	Coloured liquid
Appearance (Component B)	-	Straw-yellow liquid

► APPLICATION DATA AND FINAL PERFORMANCES	UoM	Value
Mix ratio by weight (A:B)	-	5,4 : 1
Pot-life, UNI EN ISO 9514	min	25 ± 5
Application temperature	°C	From +13 to +35
Surface drying time (23°C, 50% R.H.), EN ISO 9117-3	hours	12 ± 1
Full curing time (at +23°C, 50% R.H.)	days	7
Wear resistance – Taber Method, CS17 grinding wheel, 1,000 revolutions, 1 kg load, EN ISO 5470-1	mg	160 ± 20
Shore D hardness (A+B, curing for 7 days at +23°C, 50% R.H.), EN ISO 868	-	(72 ± 2)°
Surface gloss, gloss 60°, EN ISO 2813	-	85 ± 5
Resistance to UV and condensate cycles, cycle A (8 hours UVA-340 at 60°C + 4 hours condensate 50°C), for a total of 168 hours, measurement of yellowing on RAL 9002, ΔE, ASTM D4329	-	34 ± 1
Resistance to UV and condensate cycles, cycle A (8 hours UVA-340 at 60°C + 4 hours condensate 50°C), for a total of 168 hours, measurement of opacification on RAL 9002, Δgloss (EN ISO 2813 method), ASTM D4329	-	-12 ± 2
Resistance to moulds (class), EN 15457	-	Class 1

► TECHNICAL DATA IN CONFORMITY TO EN 13813	UoM	value
Bond strength, EN 13892-8	MPa	3.5 ± 0.3 (cohesive fracture of the support)
BCA wear resistance, depth of wear, EN 13892-4	µm	79 ± 9 (classe AR1)
Impact resistance (class), measured on specimens of concrete coated with MC (0.40) as per EN 1766, EN ISO 6272-1	N•m	4.0 ± 0.2 (IR4)

*** This regulation concerns work environments in which the personnel operates with safety footwear type standard (with soles conforming to the standard).

Storage of the product

NORPHEN 300

• 24 months in the closed original packaging, in a dry and covered place away from direct sunlight, at a temperature between +10°C and +34°C.
• Protect against frost.

Packages

VARIANT	PACKAGE	ADR	PACKAGES PER PALLET	COMPONENTS
RAL 7040	(A+B) da 12,8 kg	YES	-	A = 10,8 kg (fustino met.) B = 2 kg (tanica)
RAL 7040	(A+B) da 19,2 kg	YES	-	A = 16,2 kg (fustino met.) B = 3 kg (tanica)
TIER 1 COLOUR	(A+B) da 12,8 kg	YES	-	A = 10,8 kg (fustino met.) B = 2 kg (tanica)
TIER 1 COLOUR	(A+B) da 19,2 kg	YES	-	A = 16,2 kg (fustino met.) B = 3 kg (tanica)
TIER 2 COLOUR	(A+B) da 12,8 kg	YES	-	A = 10,8 kg (fustino met.) B = 2 kg (tanica)
TIER 2 COLOUR	(A+B) da 19,2 kg	YES	-	A = 16,2 kg (fustino met.) B = 3 kg (tanica)
TIER 3 COLOUR	(A+B) da 12,8 kg	YES	-	A = 10,8 kg (fustino met.) B = 2 kg (tanica)
TIER 3 COLOUR	(A+B) da 19,2 kg	YES	-	A = 16,2 kg (fustino met.) B = 3 kg (tanica)
TIER 4 COLOUR	(A+B) da 12,8 kg	YES	-	A = 10,8 kg (fustino met.) B = 2 kg (tanica)
TIER 4 COLOUR	(A+B) da 19,2 kg	YES	-	A = 16,2 kg (fustino met.) B = 3 kg (tanica)

Legenda ADR:
SI' = merce 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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