NORPHEN 200 FUEL

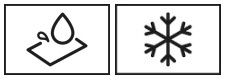
Coloured two-part epoxy enamel for coating containment areas during fuel transfer

CE RESIN COATINGS
EN 13813
DESIGNATION
SR-B2,0-AR0,5-IR4

CE CONCRETE PROTECTION
EN 1504-2 (C)
PRINCIPLES
MC-IR

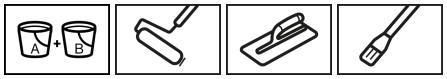
CE marking:
→ EN 13813 • Designation: SR-B2,0-AR0,5-IR4
→ EN 1504-2 (C) • Principles: MC-IR

TECHNICAL FEATURES



FIELD OF APPLICATION

APPLICATIONS



Description

NORPHEN 200 FUEL is a bi-component epoxy enamel composed of:
• component A: mixture of liquid epoxy prepolymers, pigments, additives and special fillers;
• component B: copolymerization amine.
Once completely cured NORPHEN 200 FUEL gives rise to a glossy and tenacious colored coating with excellent chemical resistance – especially towards fuel oils – and a good reactivity at low temperatures (up to +5°C).

CE Marking

► EN 13813

NORPHEN 200 FUEL 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 – AR0,5 – IR4*
• Synthetic resin (SR) based screed.
• Bond strength: 3,9 ± 0,4 MPa (B2,0).
• BCA wear resistance: 6.0 ± 0.5 microns (AR0.5).
• Impact resistance: 4 Nm (IR4).

Colour

NORPHEN 200 FUEL is available in a wide range of colors.
Nord Resine also produces colors upon specific request.
For further information, please contact the Nord Resine Technical Service at color@nordresine.com.

Field of application

NORPHEN 200 FUEL is used as a coating – with a thickness between 200 and 500 microns – of:
• floors and walls of boiler rooms;
• tanks and containment basins for diesel oils, fuel oils (BTZ, MTZ, etc.), lubricating oils, vegetable oils for non-food uses;
• tanks for the momentary containment of aromatic hydrocarbons;
• flooring of mechanical workshops;
• areas where urea solutions (e.g. AD Blue) for automotive use are handled;
• floors subjected to the action of cutting oils.

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• floors subject to spills or prolonged contact with ethylene and propylene glycol solutions.

NOTE: For internal linings of petrol tanks, ask for the product EPOXY LINER (see Data Sheet).

Advantages

• NORPHEN 200 FUEL allows the realization of multi purpose coatings with very variable thicknes.
• NORPHEN 200 FUEL shows high mechanical strength.
• NORPHEN 200 FUEL shows high chemical resistance, particularly to fuel oils and lubricants.
• NORPHEN 200 FUEL rapidly develops chemical and mechanical resistance.

General preparation of the laying surface

► Concrete surfaces
• Installation surfaces must be structurally sound, clean, free of inconsistent materials and dry.
• Depending on the state of the surface, the type of treatment to be carried out must be chosen:
→ washing with hot pressure water;
→ acid washing;
→ sanding;
→ diamond grinding;
→ shot peening.
→ scarification;
This will remove dust, dirt, grease, oil, old stickers or paints, efflorescence, rust, mold and other foreign materials.
• New floors must be seasoned for at least 28 days and have a moisture content of no more than 3.5% measured using the carbide method according to UNI 10329, DIN 18560-4 or ASTM D4944.
• If the substrate humidity is > 3.5%, depending on the humidity level, prepare the surface with:
→ SOLID;
→ W3 IMPERMEABILIZZANTE;
→ Q PRIMER + Q RASANTE;
• The coating made with NORPHEN 200 FUEL is impermeable to water vapour.
To prevent moisture from rising from the substrate and bubbles from forming under the coating, it is preferable to install a vapor barrier under the concrete.
• Any depressions and inconsistencies (thickness between 3 and 10 mm) in the floor to be covered must be filled with an epoxy mortar made with 1 part by weight of MALTA BASE + 8 parts by weight of QUARZO NATURALE MIX 0.2 – 1.5 quartz sand.

► Sheet metal or steel surfaces
• Remove rust, oxide or calamine by brushing, sanding or, if possible, sandblasting to almost white metal (HS grade 21/2 according to SIS055900-1967).
• Wipe off the dust, then clean the surface with SOLVLINE EPOXY (epoxy thinner) or nitro thinner.
• Apply of NORPHEN FONDO MA (one or two coats, see Technical Data Sheet) as soon as possible to avoid the metal reoxidation.
This is particularly important in the marine environment or where corrosive vapours are present.

Specific preparation of the laying substrate

► *as a protective anti-fuel enamel on dry substrates prepared by washing, sanding or diamond grinding*
• wait for the substrate to dry perfectly;
• remove dust perfectly;
• apply a coat of FONDO SL diluted with 40% SOLVLINE EPOXY (consumption 0.10 – 0.15 kg/m² of pure product) as a primer and adhesion promoter;
• The next day, proceed with the planned coating.
► *as a finishing of floors coated with MALTA RAPIDA or STRATOFLEX on shot peened or scarified surfaces*
→ on surfaces on which a waste dusting has been carried out: remove excess quartz, sand and vacuum;
→ on surfaces on which a self-levelling coating has been applied: wipe with a single disc machine reinforced with a light-coloured Scotch Brite type abrasive disc.

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► *as a finish for ground or sandblasted steel surfaces*
• apply two coats of NORPHEN FONDO MA (see Technical Data Sheet, consumption 0.10 – 0.15 kg/m² per coat).

Product preparation
• Stir Part A with professional low-speed mixer.
• Shake Part B.
• Pour NORPHEN 200 FUEL Part B into Part A and mix the product thoroughly with a professional mixer until you get a mixture of a homogeneous color.
• Any form of manual mixing (trowel, whisks, etc.) is to be excluded.
• In case of partial use of the package, dose components A and B of NORPHEN 200 FUEL in the precise ratios indicated on the label.
Always use a precision scale for dosing.
• The resulting mixture is ready for use.

NOTE: apply as soon as possible taking into account that the pot-life of the mixture is very short (15 ± 5 minutes at +20 C °).
Given the high reactivity of the product and the short pot-life, prepare the amount strictly necessary for the application within 10 – 15 minutes and never more than 4 – 6 kg at a time.

Product application

► *as a protective anti-fuel enamel on dry substrates prepared by washing, sanding or diamond grinding*

• Apply NORPHEN 200 FUEL with a roller or brush with a consumption of approx. 0.30 – 0.35 kg/m² in two coats.

► *as a finish for ground or sandblasted steel surfaces*

• Apply NORPHEN 200 FUEL with a roller or brush with a consumption of approx. 0.30 – 0.35 kg/m² in two coats.

► *for application as a finish on a shot peened or scarified surface and coated with MALTA RAPIDA or STRATOFLEX applied in self-levelling mode*

• Apply NORPHEN 200 FUEL with a roller or brush with a consumption of about 0.15 – 0.18 kg/m² in a single coat.

► *for application as a finish on a peened or scarified surface and coated with MALTA RAPIDA or STRATOFLEX on which waste dusting has been carried out*

• Apply NORPHEN 200 FUEL with a flexible PVC trowel Mod. L400 for a consumption of:
→ 0.70 kg/m² on a dusting of NATURAL QUARTZ 0.3 – 0.9;
→ 0.90 kg/m² on a dusting of NATURAL QUARTZ 0.7 – 1.2.

Consumption

type of application	minimum consumption	maximum consumption	u.m.	notes
Applied by roller or brush in 2 coats on dry substrates after washing, sanding or diamond grinding	0,30	0,35	kg/m²	-
Applied in 2 coats with a roller or block brush on steel surfaces (ground or sandblasted and primed)	0,3	0,35	kg/m²	-

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type of application	minimum consumption	maximum consumption	u.m.	notes
Applied with a roller or block brush in 1 coat as a protective finish for MALTA RAPIDA or STRATOFLEX coatings laid with the self-levelling method	0,15	0,18	kg/m²	-
Applied with a "mod. L400" trowel as a finish of MALTA RAPIDA or STRATOFLEX coatings sprinkled with 0,3-0,9 mm QUARTZ sand	0,70	0,70	kg/m²	-
Applied with a "mod. L400" trowel as a finish of MALTA RAPIDA or STRATOFLEX coatings sprinkled with 0,7-1,2 mm QUARTZ sand	0,90	0,90	kg/m²	

Tool cleaning

• Fresh product: cleaning with ACETONE, alcohol, epoxy thinner 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 tips for laying

• Adding solvents to NORPHEN 200 FUEL may reduce chemical resistance and final gloss.
• Overapply the next day, after 48 hours at the latest.
• Mix components A and B of NORPHEN 200 FUEL in the precise ratios provided by the manufacturer.
• The reaction speed of the system is influenced by the temperature and the amount of dough A+B produced. High temperatures and large quantities of dough shorten the useful time for the application of the mixture A + B.
• During the hottest period, keep the product containers cool and get a scale to divide the packages, as the amount of product to be prepared for each mixture will have to be small.
• If stored at temperatures below +18°C, the product may crystallize and harden.
In this case, before applying, bring the product to temperatures above +30°C and mix until perfect homogeneity is restored.
• Read the Safety Data Sheet carefully.

Technical Data

► PRODUCT IDENTIFICATION DATA		value
Density (comp. A) at 23 °C, 50%RH, EN ISO 1675	kg/L	1,19 ± 0,04
Density (comp. B) at 23 °C, 50%RH, EN ISO 1675	kg/L	1,091 ± 0,005
Density (A+B) at 23 °C, 50 %RH, EN ISO 1675	kg/L	1,17 ± 0,04
Appearance (Component A)	-	Colored liquid with characteristic odor
Appearance (Component B)	-	Straw yellow liquid with ammonia 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	15 ± 4
Application temperature	°C	+5 to +35
Surface drying time (23°C, 50%RH), EN ISO 9117-3	hours	4 ± 1
Full curing time (at 23°C, 50% RH)	days	7
Shore D hardness (A+B, maturation 7 days at +23 °C, 50 %RH), EN ISO 868	-	(77 ± 2)°
Tensile rupture load (+23°C, trial form 1 A, 20 mm/min), ISO 527-2	MPa	99 ± 15
Maximum bending load (+23°C, 80x10x4 mm trials, 10 mm/min), ISO 178	MPa	68 ± 10
UV and condensate cycle resistance, cycle A (8 hours UVA-340 at 60°C + 4 hours condensate 50°C), 168 hours total, yellowing measurement on RAL 7040, RE, ASTM D4329	-	27 ± 1
Resistance to UV and condensate cycles, cycle A (8 hours UVA-340 at 60°C + 4 hours condensate 50°C), 168 hours overall, opacification measurement on RAL 7040, Rgloss (EN ISO 2813 method), ASTM D4329	-	-80 ± 5

► TECHNICAL DATA IN ACCORDANCE WITH EN 13813		value
Bond strength, EN 13892-8	MPa	3,9 ± 0,3 (Cohesive failure in the substrate)
BCA wear resistance, wear depth, EN 13892-4	µm	6,0 ± 0,5 (Class AR0,5)
Impact resistance (class), measured on MC coated concrete samples (0.40) according to EN 1766, EN ISO 6272-1	N·m	4.0 ± 0.2 (IR4)

► 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 30% in water	-	4
Sulfuric acid 10% in water	-	4
Phosphoric acid 20% in water	-	4
Acetic acid 30% in water	-	1
Ammonia 15% in water	-	5
Soda (sodium hydroxide) 30% in water	-	5
Hydrogen peroxide 3.5% (12 volumes)	-	4 – 5
Mixture of acetic acid (1%) and hydrogen peroxide (0.5%) in water	-	4
Denatured ethyl alcohol	-	4
Technical acetone	-	4
Ethyl acetate	-	1 – 2
Methyl ethyl ketone (MEK)	-	1
Xylene	-	5
Light petroleum	-	5
Petrol	-	5
Kerosene	-	4 – 5
Diesel oil	-	5
100% ethylene glycol	-	5
Ethylene glycol 50% (aqueous solution)	-	5
Propylene glycol (all concentrations, in aqueous solution)	-	5
Cyclohexanone 99.7%	-	4

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Product storage

• 24 months in the original closed packaging, in a dry, covered environment, protected from sunlight and at a temperature between +15°C and +30°C.
• Protect the product against frost.

Packaging

VARIANT	PACKAGE	ADR	PACKAGE / PALLET	COMPONENTS	*NOTES*
RAL 7040	(A+B) - 12 kg	SI'	-	A = 8 kg (steel bucket) B = 4 kg (jerry can)	-
TIER 1 COLOUR	(A+B) - 12 kg	SI'	-	A = 8 kg (steel bucket) B = 4 kg (jerry can)	-
TIER 2 COLOUR	(A+B) - 12 kg	SI'	-	A = 8 kg (steel bucket) B = 4 kg (jerry can)	-
TIER 3 COLOUR	(A+B) - 12 kg	SI'	-	A = 8 kg (steel bucket) B = 4 kg (jerry can)	-
TIER 4 COLOUR	(A+B) - 12 kg	SI'	-	A = 8 kg (steel bucket) B = 4 kg (jerry can)	-

ADR legend:

NO = NON-DANGEROUS goods

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

Sì = 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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