

Nanten HM BIO Epoksy



Ecological high-quality bio-based epoxy resin made of natural renewable materials for use in grindable render compounds

PRODUCT TYPE

Nanten HM BIO Epoxy is an ecological 2-component bio-based epoxy for wear resistant grindable render compounds both for old and new concrete floors. Also suitable as a primer and varnish of BIO Epoxy products. The coating contains very low levels of volatile organic compounds (VOC), while the content of fast renewing raw materials is 67%. The surface is hygienic, easy to clean and contains no components promoting the growth of bacteria, and no biocides. The epoxy membrane is suitable for use in LEED building projects

APPLICATION

Production and storage facilities in foodstuff industry, which are exposed to heavy use, such as professional kitchens, hospitals, laboratories, clean rooms, schools, day-care centres, supermarkets, warehouses and other areas which are liable to environmental certificate. LEED and BREEAM projects aiming to follow sustainable development principles, use products that impose less load to the environment and reduce the carbon footprint during the whole life span of the building. According to LEED 2012, the certificate can be acquired also for renovation sites.

PROPERTIES (LEED)

With the use of Nanten BIO Epoxy products, the LEED classification of the building can be improved in the following areas:

Indoor Environmental Quality: IEQ Credit 4.2

Low-Emitting Materials-Paints & Coatings

Materials and Resources: MR Credit 6

Rapidly Renewable Materials

The coating has good resistance to greases, oils, fuels, salts, detergents and temporarily to mild acids and alkali. In areas exposed to thermal shock/vapour washing, the thickness of the grindable coating should be 6 mm at minimum. Resilience class BC5-Mec and BC5-Chem (by 54/BLY 12).

TECHNICAL DATA

Green Value: Natural materials account for 67%, fast renewing biological raw materials account for 67%. Volatile organic compounds, VOC 25 g/l, LEED requirement < 100 g/l.

67 %	25 g/l
67 %	< 100 g/l
Natural Renewable	VOC LEED

Colours

Colour of the coating comes from Nanten colour sand or sand mixture, see the Nanten colour chart.

Gloss level Full gloss.

Material consumption

Resin consumption approx. 1.3 l/m², 3-4 mm grindable coating

In primer 0.2 – 0.3 l/m²

In varnish 0.35 – 0.45 l/m²

Mixing ratio

(Part A) resin 2 parts by volume and (Part B) hardener 1 part by volume.

Package

Part A in a 10 l tin container, part B in a 5 l plastic container or both in a 200 l barrel.

Application time (+ 20°C)

Approx. 20 - 30 minutes when poured on the floor. Curing time becomes shorter with higher temperatures.

Drying time

Dry to touch 7 h (+ 25°C) and 14 h (+ 15°C).

Dry, durable to light traffic in approx. 12 h (+ 25°C) and 24 h (+ 15°C). Fully cured in approx. 7 days.

Application method

Spread with a variable trowel and finish with a steel trowel or mechanically with a grinding machine. For priming and varnishing use the appropriate roller.

Dilution

Dilution for priming 10 - 30 vol. -% with Nanten A Epoxy Thinner. For grinding render the resin is not diluted. Dilution for varnishing 20 - 40 vol. -% with Nanten A Epoxy Thinner.

Cleaning of tools

Tools can be cleaned with e.g. ethyl acetate.

Storage

+ 5°C ...+ 25°C, max. storage time 6 months. Store in a warm room, in tightly sealed original containers.

TECHNICAL PROPERTIES

Membrane thickness

Selected according to use intensity of the premise, usually 4 - 6 mm.

Density (+ 25°C) Mixture density 1.1 kg /l.

Solid matter content About 100% by volume.

Final hardness (+ 20 °C) Shore D 78.

Fire classification B_{FL}-s1, SFS-EN 13501-1.

VOC (calculated)

Nanten HM BIO Grindable Render application mixture VOC 25 g /l. LEED IEQ 4.2 requirement < 100 g /l, 2011. EU VOC 2004/42/ EC (cat A/j) max. 500 g /l (2010).

DIRECTIONS FOR USE

Surface requirements and application conditions Concrete strength class should be at least C25/C30 and wear resistance class 3. Concrete relative humidity should be below 95% and surface temperature at least 3°C above dew point. Air, surface and coating temperature should be over + 15 °C and relative humidity below 80% during the drying of the coating.

Surface preparation

New concrete floor

Remove laitance and any non-cured cement by surface grinding, shot-blasting or milling. All loose material which lowers adhesion should be cleared away and cement dust carefully removed with a vacuum cleaner.

Old concrete floor

Remove laitance and deteriorated concrete by surface grinding, shot-blasting or milling. All loose material which lowers adhesion should be cleared away and cement dust carefully removed with a vacuum cleaner. Soiled floors should be washed and rinsed with synthetic detergent before any works on the substrate. Remove completely any old films of paint in the substrate.

Priming

Prime with Nanten HM BIO Epoxy. The primer should seal all the pores in the concrete and form a uniform tight and intact film on the surface. Adhesion sand is scattered on the primer surface in the course of the work.

Filling

Small hollows and cracks should be cleaned and filled with epoxy filler, such as a filler prepared with HM BIO Epoxy and fine filler sand. Larger and more extensive filling, levelling and pouring can be performed with a filling/levelling mixture made of Nanten HM BIO Epoxy and filler sand (0.1 - 0.6 mm).

Mixing of components

First stir part A and part B of HM BIO Epoxy in their own containers, calculate the required amount of prepared mixture, considering the surface area to be coated and the mixture application time. Blend the components into one another in the correct ratio and continue with a mixer at low speed for about two minutes, trying to avoid mixing any air into the mixture. Add the selected Nanten colour sand or colour sand mixture to the compound while mixing at the same time and continue for about a minute, reaching into the corners of the container.

Coating

Pour the mixed compound (HM BIO Epoxy + colour sands) to the floor in a uniform strip and spread with a variable trowel until achieving the required layer thickness.

Spread by sections, so that you can finish the surface while standing on untreated floor. After spreading, compact the compound either manually with a steel trowel or with a machine by grinding it to a level surface. Consumption with film thickness 4 mm approx. 1.3 l HM BIO Epoxy and approx. 7 kg filler sand /m²

Varnishing

After the compacted and ground coating has dried, it should be varnished with diluted Nanten HM BIO Epoxy. We recommend applying the varnish in two layers, whereby the surface will become easy to clean and hygienic.

Skirting boards / foldups


Skirting boards are made from the same grindable render, but the render is stiffened by means of thickening fibre (Sylothix) to facilitate processing. Skirting boards are normally made with 100 mm height, either straight or rounded, with an inner angle. Work should be scheduled so that the waiting time between the application of two layers would not exceed two days.

Care of the coated floor:

See www.nanten.fi/products/cleaning and care instructions.

APPLICATION SAFETY:

See www.nanten.fi/products/material safety data sheets.

		
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0809-CPR-1037		
EN 1504-2:2004		
Coating/screed		
Abrasion resistance	mass loss < 3000 mg	HM BIO Measured values 1004 mg
Capillary absorption and permeability to water	$w < 0,1 \text{ kg/m}^2 \times \text{h}^{0.5}$	0.01 kg
Impact resistance	Class III: $\geq 20 \text{ Nm}$	60 Nm
Adhesion strength by pull-off test	$\geq 2.0 \text{ N/mm}^2$	3.0 N/mm ²
Reaction to fire B(fl) - s1	B _{fl} -s1	B _{fl} -s1
* break in concrete		

Even though the technical details of the product description are based on our best knowledge and experience, the above-named information should always be regarded as indicative. The user should make sure that the product is suitable for the application. If working contrary to these instructions, the user is solely responsible for any possible resulting damages and consequences.