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NANTEN HM BIO ESD

Product description

2-component, solvent-free, trowel-applied epoxy coating for electrostatic discharge (ESD) protected areas.

- Used as a primer, binder for the trowel-applied mortar, and topcoat in Nanten HM ESD coating systems
- Excellent electrical properties, including personnel charge generation (Vb). Meets the requirements of standard IEC EN 61340-5-1 for conductive flooring.

Applications

- Electronics industry
- Pharmaceutical industry
- Production and assembly areas in the chemical industry
- IT server rooms
- Areas where static electricity causes problems

Instructions

Base requirements and coating conditions

The concrete strength class must be at least C25/30 with a wear resistance class of 3. The relative humidity of the concrete must be below 95%, and the surface temperature must be at least +3°C above the dew point. During application and curing, the temperature of the air, surface, and coating must remain above +15°C, and the relative humidity of the air must be below 80%. Always ensure the suitability of the coating for the intended substrate.

New concrete floor

Cement laitance and any uncured cement must be removed by surface grinding or shot blasting. All loose and adhesion-reducing material must be removed, and the surface must be thoroughly vacuumed to remove all cement dust.

Old concrete floor

Cement laitance and deteriorated concrete must be removed by grinding or shot blasting. All loose and adhesion-reducing material must be removed, and the surface must be thoroughly vacuumed. Dirty floors should be washed and rinsed with a synthetic detergent before any further surface preparation. Any existing old paint film must be completely removed from the substrate.

Patching

Small holes and cracks are cleaned and filled with an epoxy putty made of, for example, HM Bio Epoxy and fine filler sand.

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Priming treatment 1

Priming is done with Nanten HM Bio Epoxy. On damp concrete substrates with a relative humidity above 95%, a moisture-tolerant primer such as Nanten M Primer must be used. The primer must seal all pores in the concrete to form a dense and continuous film on the surface. Copper tapes used for grounding are installed on the cured surface of HM Epoxy. The actual priming step of the ESD system is carried out using conductive Nanten ESD Primer according to instructions.

Priming treatment 2

Conductive priming layer with Nanten ESD Primer. Apply at a minimum rate of 0.3 l/m^2 to ensure functionality. Broadcast ESD sand “spikes” onto the primer.

Mixing

Pre-mix Part A and Part B of HM ESD Epoxy in their own containers. Estimate the required amount of mixture based on the size of the area to be treated and the working time of the product. Combine the components in the correct ratio and mix with a low-speed mixer for approximately two minutes, avoiding air entrapment in the mixture. Add 50% conductive Nanten ESD sand and 50% color sand while mixing. Continue mixing for about one minute. Mixing of the binder and filler sand can also be done using a pan mixer or concrete mixer.

Mixing ratio

Part A: 2 parts by volume, Part B: 1 part by volume
Filler sand: 50% ESD sand and the remaining filler sand as selected

Coverage

At 4 mm film thickness
Resin consumption approx. 1.3 l/m^2
For priming: 0.2–0.3 l/m^2; the second priming layer is applied with Nanten ESD Primer
Resin consumption for top coating: 0.20–0.25 l/m^2

Coating

The mixed material is poured onto the floor in a continuous bead and spread with a notched trowel to the desired thickness. After spreading, the material is compacted manually with a steel trowel or mechanically to achieve a smooth surface.

Top coating

Once cured, the compacted trowel-applied coating must be sealed with thinned Nanten HM ESD Epoxy. We recommend applying two thin coats to achieve a hygienic and easy-to-maintain surface. Excessively thick topcoat layers may impair the conductive properties of the floor.

Coved skirtings

Coved skirtings are formed using the epoxy trowel mortar, stiffened with thickening fiber (Sylothix) to facilitate application. The skirtings are typically formed to a height of 100 mm.

Waste handling

Storage and handling of waste
See the separate storage and disposal instructions https://www.fescon.fi/en/material-bank

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Technical information

Colour	The color of the coating is determined by the conductive sand (black) and the selected color sand or color sand blend
Package size	Part A in a 10 l metal container, Part B in a 5 l plastic container, or both in 200 l drums
Storage	+5°C...+25°C, maximum shelf life 6 months. Store in a warm environment, sealed in original containers.
Mixing time	Approximately two minutes
Density	Approx. 1.1 kg/l
Usage temperature	+15°C...+25°C
Usage time	Poured onto the floor: approx. 20–30 minutes. Working time decreases as temperature rises.
Drying time	Touch-dry in 7 h (+25°C) and 14 h (+15°C). Resists light traffic after approx. 12 h (+25°C) and > 24 h (+15°C). Fully cured in 7 days.
Adhesion strength	>1.5 N/mm^2
Reaction to fire	Bfl-S1
Relative air humidity	Below 80% during application and curing of the coating
Chemical resistance	Class II
Thinner	The resin is not diluted for trowel application. For top coating, HM ESD Epoxy is diluted 30–40 vol-% with Nanten A Epoxy Thinner.
Method of application	Applied with a notched trowel and finished with a steel trowel or mechanically with a power trowel. For priming and top coating, use a suitable roller.
VOC content	25 g/l (ready-to-use mixture)EU VOC 2004/42/EC (Cat A/j) max. 500 g/l (2010)
GWP A1 raw material	5.33
GWP A2 transport	0.205
GWP A3 manufacturing	0.409
GWP A1-A3	5.95
GWP A4 transport	0.0315
GWP A5 assembly	0.121
GWP unit	kg CO2e/kg

Remember to consult the Maintenance Instructions for Coated Floors and the product Safety Data Sheet on our website at www.fescon.fi, or request a copy by calling +358 9 274 7970. Although the technical details provided in

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this product description are based on our best knowledge and experience, the information above should always be regarded as indicative. The user is responsible for verifying the suitability of the product for the intended application. If the instructions are not followed, the user assumes full responsibility for any resulting damage or consequences. Limitation of liability, product use notes and restrictions: Please familiarize yourself with Fescon Oy's general terms of delivery and the design and work instructions related to the product.