



Disbopox 453 Verlaufschiicht

Pigmented, self-levelling, diffusion-capable, water-thinnable, 2-component liquid epoxy resin coating for industrial floors exposed to high mechanical loads (layer thickness of 2 – 5 mm).

Product Description

Field of Application

Disbopox 453 Verlaufschiicht is emission-minimised and tested for harmful substances by the Technical Control Board TÜV and therefore is particularly suitable for sensitive areas such as lounges, hospitals, kindergartens and daycare centers, schools, etc.
 Suitable for use on mineral floors subjected to high mechanical loads in industrial and commercial areas, as e.g. storage and manufacturing areas, loading ramps.
 Particularly suitable as an abrasion-resistant anti-slip coating for floors with ground contact such as parking garages/underground parkings. As intermediate coating within the Disboxid StoneColor System for representative interior spaces.

Tested & approved according to AgBB testing criteria for VOC emissions from building material that is used for interior work. The criteria of AgBB (Ausschuss zur gesundheitlichen Bewertung von Bauprodukten; Commission for the sanitary evaluation of building material) are elaborated by the ecological and sanitary authorities for the use of building material in „delicate/sensitive“ areas, as e.g. lounges.

Material Properties

- Suitable for use on slightly (matt) moist, cement-based substrates.
- Good chemical resistant
- Water vapour permeable - suitable for unsealed floor plates with contact to the ground, and for magnesite- and anhydrite screeds
- Variable use as primer, scratch-filler, self-levelling fluid coating or layer mixed and scattered with quartz sand
- Anti-slip, safe surfaces can be achieved
- Emission-minimised and tested for harmful substances by Technical Control Board (TÜV)

Material Base / Vehicle

Water-thinnable, 2-component liquid epoxy resin.

Packaging/Package Size

10 kg plastic combi-packaging
 40 kg packaging (base material: 36 kg plastic hobbock hardener: 4 kg tin bucket)

Colours

Pebble Grey, Stone Grey, Medium Grey
 Special tints are available on request.

Exclusive colour designing is possible by the use of FloorColor collection. Discolouration and chalking effects may occur with weathering and UV light exposure. The pigmentation in, e.g. coffee, red wine or leaves (organic dyestuffs) and various chemicals, e.g. disinfectants, acids, etc., may cause discolouration. Scratch-marks may appear on the surface due to continued rubbing/sliding. The functional capability of the coating will not be affected by these changes.

Note: Varying layer thickness and non-uniform drying may cause slight colour differences for intensively tinted material.

Gloss Level

Silk-matt



Storage

Keep in a cool, dry, and frost-free place. Shelf life of the original, tightly closed packaging: Minimum 6 months. If temperatures are low, the material should be stored at 20 °C before application.

Technical Data

■ Density:	approx. 2.0 g/cm ³
■ Dry film thickness:	approx. 40 µm/100 g/m ²
■ Resistance-count for diffusion µ (H ₂ O):	approx. 6,000 (at 2 mm layer thickness)
■ Abrasion to Taber (CS 10/1000 U/1000 g):	80 mg/30 cm ²
■ Compression strength:	approx. 45 N/mm ² (MPa)

Chemical resistance

Chemical Resistance in accordance with DIN 53 168 at 20 °C:	
	7 days
Test group 1* Fuel, Super & Normal as per DIN 51600 and DIN EN 228	+
Test group 4a* All hydrocarbons incl. 2 and 3, excepting 4 a and 4 b and used motor & gear oils	+
Test group 5* Alcohols (up to max. 48% by vol. methanol), glycol ether (incl. 5b)	+ (S)
Test group 7* Organic ester and ketones (incl. 7a)	+ (S)
Test group 8* Aqueous solutions of aliphatic aldehydes up to 40%	+ (S)
Test group 9* Watery solutions of organic acids (carbon acids) up to 10% and their salts (in aqueous solution)	+/-
Test group 10* Mineral acids up to 20% and acidal hydrolysing, inorganic salts in aqueous solution (pH < 6), excepting hydrofluoric acid and acids and their salts with oxidising effect	+ (D)
Acetic acid 5% sol.	+/-
Lactic acid 10% sol.	+/-
Sulphuric acid 50% sol.	+ (D)
Nitric acid 10% sol.	+ (D)
Hydrochloric acid 30% sol.	+ (D)
Ammonia 25% sol.	+
Caustic soda 50% sol.	+
Fe ₃ chloride, saturated solution	+ (D)
Magnesium chloride, 35% sol.	+
Distilled water	+
Common salt solution, saturated	+
Premium gasoline	+
Heating and Diesel fuel	+
Cola	+ (D)
Coffee	+ (D)
Red wine	+ (D)
Lysol solution, 2 % sol.	+
Shell Diala oil	+
Skydrol (hydraulic fluid/medium/oil)	+
Transformer coolant	+
Legend: + = resistant, +/- = limited resistant D= discolouration S= slightly softening	

* Corresponding to the test principles for protection of waters as per DIBt. For liquids of hazard categories A I, A II and B of VbF (German regulation for the transport of flammable liquids) a conductive coating is required.

Application

Suitable Substrates

All interior mineral and ceramic substrates. The substrates must be dry, sound, dimensionally stable, solid, and free from all materials that may prevent good adhesion, e.g. loose materials, dust, oils, fats/greases or abraded rubber contamination (skid marks).

Check cementitious, synthetic resin improved self-levelling fluid mortars for compatibility by a trial coating, if necessary.

Wet cleaned concrete or cement screed must be surface-dry (flat/matt aspect without any glossy water film). The adhesive tensile strength of substrates must be 1.5 N/mm² on an average, with a minimum single value of 1.0 N/mm².

Equivalent-humidity must be achieved for the substrates:

Anhydrite screed max. 0.5 % by weight
 Magnesite screed 2 – 4 % by weight
 Xylo-lite screed 4 – 8 % by weight

Substrate Preparation

Prepare the substrates by suitable means, e.g. by grit blasting (shot peening) or milling, in order to meet the above mentioned requirements. Always remove unsound existing 1-component coatings and loose 2-component coatings. Vitreous surfaces and surfaces of rigid existing 2-component coatings must be cleaned, roughened (flattened) by sanding or blasting to achieve a matt surface.

Preparation of Material

Stir both components separately, then add the hardener to the base material and stir intensively with a low-speed electrical paddle (agitator; max. 400 rpm) until a homogeneous, streak-free mass is formed. Pour the mixture into another clean mixing vessel and add under constant agitation the required quantities of sand or water (see table below), until an homogeneous mixture is achieved, free of lumps.

Usage as	Packaging	Addition per Packaging
Priming coat		
<i>brush application</i>	40 kg	max. 0.8 l * water
<i>scratch filler application</i>	40 kg	max. 0.8 l * water, 8.0 kg Disboxid 942 Mischquarz
Self-levelling coating for scattering with sand	40 kg	max. 0.8 l * water, 8.0 kg Disboxid 942 Mischquarz
Repair mortar	40 kg	200 kg Disboxid 946 Mörtelquarz
Self-levelling coating	40 kg	unfilled

* The material can be adjusted to working consistency with max. 2% by weight of tap (potable) water.

Mixing Ratio

Disbopox 453 Verlaufschiicht:

Base material 9 parts by wt.
 Hardener 1 part by wt.

Priming coat

Self-levelling coating Disbopox 453 Verlaufschiicht unfilled*

Scratch filler application, self-levelling coating for scattering quartz sand

Disbopox 453 Verlaufschiicht 100 parts by wt.
 Tap water 2 parts by wt.
 Disboxid 942 Mischquarz 20 parts by wt.

Repair mortar

Disbopox 453 Verlaufschiicht 1 part by wt.
 Disboxid 946 Mischquarz 5 parts by wt.

Self-levelling coating

Disbopox 453 Verlaufschiicht unfilled

* The working consistency of the material can be adjusted by adding max. 2 % by weight of water.

Method of Application

According to the desired application with suitable sealer brush, smoothing trowel or coating knife, e.g. notched scraper made of hard rubber.

Note: If a notched scraper is used, the chosen V-notching does not lead automatically to compliance with given consumption values.

Surface Coating System

Priming Coat

Brush application for semi-coarse substrates:

Apply water-diluted material generously and intensively and in a uniform thick layer.

Scratch filler application for coarse porous substrates:

Pour the material (mixed for scratch filler application) onto the hardened, brush-applied priming coat and scrape off excess material by smoothing trowel or scraper on top of the surface.

Note:

1. Mechanically prepared, primed magnesite (Magnesium Oxychloride) screed is extremely open-porous and must be treated with a scratch filler application.
2. Ceramic pavements have very different surfaces, hence adhesion must always be checked by a trial application. Joints of ceramic materials are to be filled prior to the application of the scratch filler layer.

Alternatively Disbopox 443 EP Impregnation may be used on mineral surfaces for priming coat (flow coating by rubber scraper). Remove puddles of excess material by medium-pile roller or sealer brush. (Consumption: approx. 200 g/m²)

Repair mortar

Apply the repair mortar wet on wet onto the brush-applied priming coat and compress the material with a plastic or stainless steel trowel, then level the surface.

Finishing Coat

Self-levelling coating

After a waiting time of min. 12 hours and max. 24 hours, pour the self-levelling material onto the prepared substrate and spread evenly with a V-notched scraper/wiper (min. 8 mm notch). After waiting approx. 10 minutes deaerate the freshly applied self-levelling coating with a spiked roller.

Anti-slip coating, mixed/covered with quartz sand

After a waiting time of min. 12 hours and max. 24 hours, pour a layer of self-levelling material (mixed with quartz sand), onto the primed or filler-treated substrate and spread evenly with a V-notched (min. 8 mm notch) scraper/wiper made of hard rubber. Then scatter quartz sand Disboxid 943 (particle size 0.4 – 0.8 mm) or Disboxid 944 (particle size 0.7 – 1.2 mm) thoroughly onto the complete freshly applied layer. After hardening sweep off all excessive quartz sand and apply an intermediate and finishing coat of Disbopox 447 by roller.

Consumption

Priming coat Brush application Disbopox 453 Verlaufschiicht, diluted material	approx. 500–800 g/m ²
Scratch filler application Disbopox 453 Verlaufschiicht Disboxid 942 Mischquarz	approx. 1,040–1,200 g/mm/m ² approx. 210–240 g/mm/m ²
Repair mortar Disbopox 453 Verlaufschiicht Disboxid 946 Mörtelquarz	approx. 300 g/mm/m ² approx. 1,500 g/mm/m ²
Self-levelling coating (smooth)* Min. 2 mm, max. 5 mm wet layer thickness (min. 8 mm V-notched tool)**	
Disbopox 453 Verlaufschiicht	approx. 1,750–2,000 g/mm/m ²
Anti-slip coating (mixed & scattered with quartz sand)	
<i>Mixed material</i>	
Disbopox 453 Verlaufschiicht Disboxid 942 Mischquarz	approx. 3.0 kg/m ² approx. 600 g/m ²
<i>Covering with sand</i>	
Disboxid 943/944 Einstreuquarz	approx. 3–4 kg/m ²
<i>Finishing sealing coat**</i>	
Disbopox 442 GaragenSiegel Disbopox 447 Wasserepoxid	2 x approx. 250 g/m ²

* Consumption must not fall below 3.5 kg/m² to avoid failures of the levelling properties.

** Size of V-notch depends on abrasion resistance of scrapers, temperature, filling degree, and substrate conditions. The consumption of the finishing sealing on sprinkled coatings varies depending on temperatures, way of application, tools and different substrate materials. All values are recommendations. The exact rate of consumption has to be determined by a trial application on site.

Workability

At 20 °C and 60 % relative humidity approx. 30 minutes.
Higher temperatures shorten and lower temperatures extend the pot life.

Note: Provide for sufficient ventilation during drying and curing.

Application Conditions

Material, Atmospheric, and Substrate Temperature:

Min. 10 °C, max. 25 °C during application and drying.
Relative humidity must be between 40 % and 80 %. Values outside this range can lead to optical disturbances of the surface. Substrate temperature should always be min. 3 °C above the dew point.

Waiting Time

The waiting time between work steps should be minimum 12 hours at 20 °C. Higher temperatures shorten and lower temperatures extend this time period.

Drying/Drying Time

At 20 °C and 60 % relative humidity, walkable after approx. 12 hours, ready for mechanical loads after approx. 3 days and completely hardened after 7 days. Lower temperatures extend the drying time. During the hardening process (approx. 12 hours at 20 °C), the applied coat should be protected against moisture, as it may lead to surface faults and loss of adhesion. Ensure good ventilation to prevent shade variations due to uneven drying conditions.

Tool Cleaning

Immediately after use or during longer breaks. Clean with water or warm soapy water.

Advice

German Certificates

- 1-1269: Testing of anti-slip property R11 V4 (scattered with Disboxid 943)
Material Testing Institute Hellberg, Aldendorf
- 1-1126: Testing of anti-slip property R10
Material Testing Institute Hellberg, Lüneburg

Special Risks (Hazard Note) / Safety Advice (Status as at Date of Publication)

Product only to be used by professional applicators.

Base material:

Irritating to eyes. Keep out of the reach of children. Do not breathe fumes/aerosol. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap and water. Do not empty into drains. Wear suitable gloves and eye/face protection. In case of insufficient ventilation, wear suitable respiratory equipment.

Contains 3,6,9-triazaundecamethylenediamine. May produce an allergic reaction.

Hardener:

Irritating to eyes and skin. May cause sensitisation by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Avoid contact with skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap and water. Do not empty into drains. Wear suitable gloves and eye/face protection.

Contains epoxy constituents. Attend to information supplied by the manufacturer.

Disposal

Materials and all related packaging must be disposed of in a safe way in accordance with the full requirements of the local authorities. Particular attention should be made to removing wastage from site in compliance with standard construction site procedures. In Germany: Only completely emptied containers should be given for recycling. *Residues of material: Allow base material and hardener to cure and dispose as paints waste.*

EU limit value for the VOC content

of this product (category A/j): 140 g/l (2010). This product contains max. 30 g/l of VOC.

Giscode

RE 1

Further Details

See Material Safety Data Sheet (MSDS). Follow the application recommendation and advice for care and maintenance while applying our products.

CE Labelling

EN 13813

CE labelling is based on EN 13813 "Screed mortars, screed compounds and screeds – screed mortars and screed compounds – Properties and Requirements" defining the requirements for screed mortars being used for floor constructions in the interiors. The standard also include synthetic resin coatings and sealing.

Products matching the above mentioned standards are to be labelled with the CE mark. Additional engineer standards are effective for the use in Germany in structural safety relevant areas. Conformity is documented by the Ü sign (Überwachung = supervision) on the container. Established by documented evidence of conformity 2+ with controls and tests on the part of the manufacturer and notified bodys.

Technical Assistance

As it is impossible to list herein the wide variety of substrates and their specific problems, please request our technical assistance in case of queries. We will describe appropriate working methods, if a substrate not specified above is to be coated.

Customer Service Centre

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