Disboxid 420 E.MI Primer

Transparent, 2-component liquid epoxy resin for priming mineral floor spaces. Emission-minimised, tested for harmful substances and supervised. Particularly suitable for moisture sensitive substrates.

Product Description

Field of Application

Due to the emission-minimised formula, tested for harmful substances, the product is particularly suitable for all “delicate/sensitive” areas, as e.g. lounges, hospitals, nurseries and play schools, schools, etc.
Permanent strong adhesion, even with strong temperature and moisture variations, if combined with Disboxid 421 E.MI Coat and other Disbon top coats.

Used as a primer, scratch-filler and mortar coating on mineral substrates under floor coatings in e.g.
– production areas and warehouses
– offices, lounges and selling rooms.

Suitable as binder for Disboxid 946 Mörtelquarz (mortar quartz) for the setting-up of highly wear-resistant industrial coatings, concave fillets and for reprofiling of spallings.
Suitable as a smooth or slip-resistant (anti-skid) sealer.
For filling cracks.
Suitable as green concrete protection, avoiding extremely fast drying.
Priming surfacer within the car park (parking garage) system Disboxid OS 8 E.MI II

Tested & approved according to AgBB testing criteria for VOC emissions from building material that is used for interior work. The criteria of AgBB (**A** usschuss zur **g** esundheitlichen **B** ewertung von **B** auprodukten / 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

- Emission-minimised.
- Tested for harmful substances.
- Approved by the German Institute for Structural Engineering.
- Free from benzyl alcohol and alkyl phenol.
- Good penetration to the substrate.
- Excellent anchorage in concrete.
- Free from substances detrimental to proper enamel wetting.

Material Base / Vehicle

Low-viscous, 2-component liquid epoxy resin, total solid according to Deutsche Bauchemie.

Packaging/Package Size

1 kg, 5 kg, 10 kg combined tin container,
25 kg packaging (Base material: 17.5 kg tin hobbock, hardener: 7.5 kg tin bucket)

Colours

Transparent

The primer can be pigmented with Disboxid 980 NEFA®POX pigment paste.
Discolouration and chalking effects may occur with weathering and UV light exposure. The colourants in e.g. coffee, red wine or leaves (organic dyestuffs) and various chemicals, e.g. disinfectants, acids, etc., may cause discolouration. Proper functioning of the coating will not be affected by these changes.

Storage

Keep in a cool, dry and frost-free place.
Tightly closed original containers have a minimum shelf life of 2 years. If temperatures are low, the material should be stored at approx. 20 °C before application.

Technical Data

Density:	approx. 1.1 g/cm³
Dry film thickness:	approx. 90 µm/100 g/m²
Abrasion to Taber (CS 10/1000 U/1000 g):	approx. 43 mg/30 cm²
Pendulum hardness to König:	approx. 197 seconds
Compression strength:	approx. 89 N/mm²

Application

Suitable Substrates

Concrete and cement screed.
The substrates must be dry, sound, dimensionally stable, solid and free from all substances that may prevent good adhesion, e.g. loose/brittle materials, dust, oils, fats/greases or rubber abrasion (skid marks).
Cementitious flow mortars, ameliorated with synthetic resin, must be checked for compatibility by trials on site, if necessary.
The average adhesive tensile (pull-off) strength of substrates must be 1.5 N/mm², with a minimum individual value of 1.0 N/mm².
If used as priming surfacer according to OS8 the average adhesive tensile strength of substrates must be 2.0 N/mm², with a minimum individual value of 1.5 N/mm².
Substrates must have achieved their equilibrium moisture content (EMC):
Concrete and cement-based composition floor (screed): max. 4 % by weight (CM method)
Testing method for the above mentioned values as per DAfStb, repair guideline part 3.

Other types of substrates or proceedings require a special advisory service by Disbon.

Substrate Preparation

Prepare the existing cement-based substrate very thoroughly by shot-blasting with solid shot/grit (shot peening), avoiding dust due to simultaneous suction-cleaning.
The degree of removing layers of lower adherence is depending on pressure, type and amount of shotblasting medium.
Grinding is only permissible for small (border) areas, except for the preparation using diamond grinding technique to remove layers of lower adherence.
In Germany: Follow BEB-Arbeitsblatt KH-0/U* and BEB-Arbeitsblatt KH3*, as well as Table 2.5 of the Guideline "Richtline Schutz und Instandsetzung von Betonbauteilen, Teil 2 des "Deutschen Ausschuß für Stahlbeton" / Protection & Repair of concrete elements, part 2 of "German Committeee for reinforced concrete".
Repair spallings and defects with Disbocret® PCC or Disboxid EP mortars, filling them flush with the surface.
All material with silicone content cannot be used in the surrounding area (ambiance) before and during work, in order to avoid defects in the surface (loss of adhesion).
Primed substrates containing fibres (steel or synthetic fibres) must be intermediately grinded and then primed (covered) again, to avoid a moisture absorbing effect of fibres.

* Bundesverband Estrich und Belag e.V., 53842 Troisdorf-Oberlar, GERMANY
(German Federal Association Screed and Coating)

Preparation of Material

Add the hardener to the base material and stir intensively with a low-speed electric paddle mixer (max. 400 rpm). Pour the mixture into another clean container and continue stirring.
For pigmentation add the pigmented paste to the base material (1 plastic bag of Disboxid 980 NEFA® POX-Farbpaste for 25 kg of Disboxid 420 E.MI Primer) and stir up.

Mixing Ratio

Base material : hardener = 7 : 3 parts by weight

Method of Application

Depending on the application with a rubber wiper/squeegee, sealer brush, medium pile paint roller or smoothing trowel.

Surface Coating System

Priming Coat
Pour the mixed material onto the surface to be primed and spread evenly with a rubber wiper/ squeegee in back pull technique, filling all pores. Then treat the surface with a medium pile roller to avoid the forming of glossy areas. Strongly absorbent substrates (absorbing all priming resin, no closed film is formed) must be primed again to fill all pores.
The priming film must be recoated within 24 hours. For longer waiting times scatter the freshly applied priming coat slightly with quartz sand (particle beside particle).
For flow mortars & coatings scatter the surface with an overflow of quartz sand Disboxid 943 Einstreuquarz.
For mortar coats use Disboxid 944 Einstreuquarz. For top coats: Follow Technical Information.
Coats with a layer/coating thickness of < 1 mm cannot be sand-treated. The priming coat (without sand coat) must be recoated within 24 hours.

Sealing
Material is applied in 1 – 2 work steps/operations as described above. For slip-resistant sealing the first freshly applied coat is strewn/scattered with quartz sand Disboxid 943/944 Einstreuquarz according to the desired roughness, or with other suitable materials, e.g. Durop, granite chips or silicon carbide.

Scratch Filler Application
Substrates up to 1 mm of surface roughness (measured as per sand surface procedure)
Prepare a filler mixture consisting of
Disboxid 420 E.MI Primer: 1 part by weight
Disboxid 942 Mischquarz: 1.5 parts by weight

Substrates with more than 1 mm of surface roughness (measured as per sand surface procedure)
Prepare a filler mixture consisting of
Disboxid 420 E.MI Primer: 1 part by weight
Quartz sand: 1.5 parts by weight (mixture of Disboxid 942 + Disboxid 943 in 1:1 ratio).

Pour the filler mixture onto the thoroughly primed surface and spread evenly with a smoothing trowel (use steel-made squeegee, max. 60 cm wide), drawing sharply above the surface to level unevenness. Then remove all bubbles/blistering (deaerate) using a spiked roller. Treat the finished scratch filler surface with quartz sand according to requirements.

Levelling Coat
Prepare a filler mixture consisting of
Disboxid 420 E.MI Primer: 1 part by weight
Disboxid 942 Mischquarz: 1 part by weight
Pour the filler mixture onto the thoroughly primed surface and spread evenly with a notched hard rubber wiper/squeegee (triangular notching, 4 mm). Leave to stand for approx. 10 minutes, then remove all blistering working crosswise with a spiked roller.
This levelling coat should not be sand-treated!

Mortar Coat
Prime the floor space as described above. Prepare a mortar mixture of
Disboxid 420 E.MI Primer: 1 part by weight
Disboxid 946 Mörtelquarz: 10 parts by weight
The binder in the 5 kg packaging is matched to be mixed with two 25 kg bags of Mörtelquarz. Fill the Mörtelquarz (quartz sand for mortars) in a compulsory mixer and add the mixed binder into the running machine. Mix intensively for 3 minutes.
Apply the mortar wet-on-wet onto the fresh priming coat or on the hardened, quartz sand treated priming coat. Compress and finally smoothen with a plastic or a stainless steel trowel. The mortar sub-floor-coating first must be levelled on a levelling straight-edge.
To obtain a fluid-sealing or slip-resistant surface, the coating must be sealed, as described under point 2.
Prime the mortar coating before a possible revision with Disboxid 420 E.MI Primer, adding approx. 2 % by weight of set-up agent Disboxid 952 Stellmittel, filling all pore*s.*

Concave Fillets (Radius: 5 cm)
Prime the floor space as described above. Prepare a mortar mixture of
Disboxid 420 E.MI Primer: 1 part by weight
Disboxid 946 Mörtelquarz: 10 parts by weight
Create a fillet with a radius of 5 cm using suitable tool, e.g. fillet trowel.

Protection of Green Concrete
The material should be applied at an early stage, reducing the loss of water, avoiding prematurely drying of the concrete. Point in time for application: When concrete with a water-cement value of < 0.55 wc is walkable (at 20 °C already in a few hours), without showing footprints.
The material can only be applied on surfaces being float treated and therefore free from adhesion diminishing cement slurry. The surface must not show a seamless water film (puddles).

Note: Do not use a power trowel for concrete.

Roughen the surface before material application, using a steel or synthetic bristle brush (Piassava) to remove all eventually remaining cement slurry and for a better capillary permeability by opening the pores.
Apply the material with a rubber slider/wiper onto the surface (back pull). Respect a waiting time of approx. 10 to 15 minutes at 20 °C, then spread the material evenly with a roller (cross-coat).
Apply the maximum quantity of Disboxid 420 E.MI Primer that can be absorbed by the substrate, depending on the concrete quality. The forming of material agglomeration must be avoided.
Check applied material thoroughly for being pore-free and fill all remaining pores in a second work step, if necessary. Then scatter the surface with an overflow of quartz sand Disboxid 943 Einstreuquarz.

Consumption

Priming Coat	Approx. 200 - 400 g/m²
Top Sealing	Approx. 200 - 400 g/m² per coat
Scratch Filler Application *for semi-rough, even substrates* *Surface roughness to 1 mm:*	
Disboxid 420 E.MI Primer Disboxid 942 Mischquarz	Approx. 660 g/mm/m² Approx. 1 kg/mm/m²
For roughly textured, uneven substrates *Surface roughness from 1 mm:*	
Disboxid 420 E.MI Primer Disboxid 942 Mischquarz Disboxid 943 Einstreuquarz	Approx. 660 g/mm/m² Approx. 500 g/mm/m² Approx. 500 g/mm/m²
Levelling Coat *for high-quality surfaces:*	
Disboxid 420 E.MI Primer Disboxid 942 Mischquarz	Approx. 800 g/m² Approx. 800 g/m²
Concave Fillets	
Disboxid 420 E.MI Primer Disboxid 946 Mörtelquarz	Approx. 150 g/m Approx. 1.5 kg/m
Mortar Floor Coating*	
Disboxid 420 E.MI Primer Disboxid 946 Mörtelquarz	Approx. 190 g/mm/m² Approx. 1.9 kg/mm/m²
Green Concrete Protection	
Disboxid 420 E.MI Primer Disboxid 943 Einstreuquarz	Approx. 30 - 600 g/m² Approx. 1 kg/m²

The exact rate of consumption is best established by a trial coating on site.

* Partial repairs of balcony floor spaces are realizable. Due to different extensions of epoxy mortar and concrete, the complete surface treatment must be avoided, otherwise cracking may occur.

Workability

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

Application Conditions

Material, ambient air and substrate temperature:
Min. 10 °C, max. 30 °C during application and drying.
Relative humidity must not exceed 80 %. Substrate temperature should always be min. 3 °C above the dew point temperature.

Waiting Time

The waiting time between work steps/operations should be at least 12 hours and max. 24 hours at 20 °C. After longer breaks, the surface of the preceding work step/coating must be roughened (grinded), when it has not been scattered/strewn with quartz sand before. Higher temperatures shorten and lower temperatures extend the waiting time.

Note: When the material is used as a green mortar protection, it must be coated at 20 °C after 2 days with a thin film coat (sealer, rolled coat) and after 5 days with a thick film coating system (flow coat and mortar, quartz sand treatment coat).

Drying/Drying Time

At 20 °C and 60 % relative humidity, walkable after approx. 12 hours. Ready for mechanical stress after approx. 3 days, fully hardened and mechanically loadable after approx. 7 days.
Time period is correspondingly longer at low temperatures. Protect the coat from moisture during the hardening process (approx. 12 hours at 20 °C) to avoid irregularities in the surface and diminished adhesion.

Tool Cleaning

Immediately after use or during longer breaks with thinner Disboxid 419.

Advice

German Certificates	1-1244 General Technical Approval for the use in habitable rooms, Z-156.605-640, German Institute for Structural Engineering, Berlin 1-1245 Resistance to moisture (rising damp) from the reverse side, Dr. Robert-Murjahn-Institute GmbH, Ober-Ramstadt 1-1286 Testing of the fire behavior (Bfl s1) according to DIN EN 13501-1, Testing Institute Hoch, Fladungen
Special Risks (Hazard Note) / Safety Advice (Status as at Date of Publication)	**Restricted to professional users.** *Base material (Component A):* Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Toxic to aquatic life with long lasting effects. Do not get in eyes, on skin, or on clothing. Avoid release to the environment. Use personal protective equipment as required. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Contains: bisphenol-A-(epichlorhydrin) and epoxy resin (number average molecular weight <= 700), bisphenol F-(epichlorhydrin), alkyl glycidyl ether. Contains epoxy constituents. May produce an allergic reaction. *Hardener (Component B):* Harmful if swallowed or if inhaled. Causes severe skin burns and eye damage. May cause damage to organs through prolonged or repeated exposure. Harmful to aquatic life with long lasting efects. Do not get in eyes, on skin, or on clothing. Avoid release to the environment. Use personal protective equipment as required. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Contains: 1,5-Pentanediamine, 2-methyl-, reaction products with 2-ethyl-1,4-butanediamine and glycidyl tolyl ether, polyoxypropylenediamine.
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 paid to removing wastage from site in compliance with standard construction site procedures. In Germany: Only completely empty containers should be handed in for recycling. Liquid and hardened materials which contain organic solvents or other hazardous substances shall be disposed of as paint waste. Uncured product residues are special /hazardous waste.
EU limit value for the VOC content	of this product (category A/j): max. 500 g/l (2010). This product contains max. 1 g/l VOC.
Giscode	RE 1 (Germany)
Further Details	See Material Safety Data Sheet (MSDS). Follow the application instructions while applying our materials.

CE Labelling

CE
Disbon GmbH Roßdörfer Straße 50, D-64372 Ober-Ramstadt **08**[1)] **1119** DIS-420-010265 EN 1504-2:2004
Protective coating product - Coating EN 1504-2: ZA.1d, ZA.1f und ZA.1g
Disboxid PHS-System OS 8 E.MI II

Linear shrinking	< 0.3 %
Compressive strength	Class I
Abrasion resistance[1)]	Mass lost
Permeability to CO_2	S_D > 50 m
Water vapour permeability	Class III
Capillary absorbtion of water and water permeability	w < 0.1 kg/m² x $h^{0,5}$
Thermal shock resistance	> 2.0 (1.5) N/mm²
Resistance to strong chemical attack	Hardness loss < 50%
Impact strength	Class I
Pull-off test to determine the adhesive strength	≥ 2.0 (1.5) N/mm²
Reaction to fire	Class B_{fl}- s1
Grip	Class III

[1)] In addition the requirements of EN 13813 must be fulfilled for OS8.
[2)] Parenthesized value is the lowest permissible single/individual value.

EN 1504-2
CE labelling is based on EN 1504-2 “Products and systems for protection and repair of concrete loadbearing structures – Part 2: Protective coating systems for concrete surfaces”, defining the requirements for surface protection procedures. Products matching the above mentioned standards are to be labelled with the CE mark on the container. 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.

CE

Disbon GmbH
Roßdörfer Straße 50, D-64372 Ober-Ramstadt

08

DIS-420-010265
EN 13813:2002

Synthetic screed/synthetic coating for interior use
EN 13813:SR-B_{fl} s1-B1,5-AR1-IR4

Reaction to fire	B_{fl}-s1
Release of corrosive substances	SR
Wear resistance	≤ AR1
Adhesive tensile strength	≥ B1.5
Impact strength	≥ IR4

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.

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