



VIMEPOX FLOORING

Self-leveling two-component epoxy floor coating

Properties

VIMEPOX FLOORING is a colored two-component epoxy system without solvents. Upon addition of quartz sand (\varnothing 0-0,4mm), it forms a self-leveling resin-mortar, which is ideal for the coating of industrial concrete floors.

VIMEPOX FLOORING offers:

- Considerable adhesion on concrete, cement grout and concrete-based substrates in general.
- High mechanical tolerance: hardness combined with relative elasticity and abrasion resistance.
- Weatherproofing and chemical resistance to acids, alkalis, solvents, fuels, oils, salt-water, detergents.
- Multiple colors and surface modulation.

Applications

The **VIMEPOX FLOORING** self-leveling resin-mortar is applied as cast protective and colored decorative coating on concrete-based floorings, cement grout and mosaic floors.

VIMEPOX FLOORING fulfills the requirements for 1 mm to 5 mm coatings in regard of mechanical tolerance, according to DIN 28052-1 (Category 3a): vehicles with tight rubbers or static loads up to $7\text{N/mm}^2 = 700\text{t/m}^2$. For heavier loads, especially polyamide wheels, special tests are required.

In addition to its high chemical resistance (see table on the back external page), **VIMEPOX FLOORING** does not exhibit any toxicity or harmful substance migration to foodstuff.

Moreover, it provides the weatherproofing and non-absorbency properties, required by the 93/43 EEC communities' directive for food company floors, and facilitates the easy cleaning and disinfecting of such surfaces, keeping off any hygiene problems.

Depending on the application method, the **VIMEPOX FLOORING** coating surface may be applied as smooth or non-slip with glossy look.

* Certificate of Conformity for **VIMEPOX FLOORING** for concrete floor sealing coat in food processing and production facilities issued by the German ISEGA Research and Test Company.

Technical Data

In accordance to the report of the Institute of Compact Constructions and Construction Materials Technology, University of Karlsruhe (TH).

Composition	Two component epoxy system
Component A	Coloured epoxy resin without solvents
Component B	Clear hardener without solvents
Colors	RAL 7032, 7040, 7042 Grey RAL 1014 Beige RAL 3001, 3009 Red RAL 6019 Green Other colors upon request
Admixture ratio	A : B = 6,75 : 3,25 or 2,08 : 1 by weight
Specific gravity of mixture (A+B) (DIN EN ISO 2811-1)	1,11 kg/l
Dynamic viscosity of mixture (A+B) (DIN EN ISO 3219) at 23 ⁰ C	904 mPa·s 5 min after mix 1030 mPa·s 10 min after mix 1220 mPa·s 15 min after mix
Pot life (A+B) at 20 ⁰ C at 30 ⁰ C	>40 min ¹⁾ >20 min ¹⁾
Minimum hardening temperature	+ 8 ⁰ C
Walkability	after 24 hours at 20 ⁰ C
Final hardening time at 20 ⁰ C at 30 ⁰ C	7 days 6 days
Compressive strength (DIN EN ISO 604) (DIN EN 196-1)	32 N/mm ² >51 N/mm ² ¹⁾ – 53 N/mm ² ²⁾
Modulus of elasticity in compression (DIN EN ISO 604)	1550 N/mm ²
Flexural strength (DIN EN ISO 178) (DIN EN 196-1)	13 N/mm ² >17N/mm ² ¹⁾ – 24 N/mm ² ²⁾
Modulus of elasticity in flexure (DIN EN ISO 178)	1080 N/mm ² ¹⁾
Shore D hardness (DIN EN ISO 868)	72 ¹⁾
Adhesion strength (bonding) to concrete substrate. (DIN EN ISO 1542)	> 3 N/mm ² – concrete cohesion break ³⁾
Abrasion resistance (wear) in accordance with the Taber method (DIN EN ISO 7784-2)	35 mg after 500 circles ¹⁾ 77 mg after 1000 circles ¹⁾
Water absorbability (DIN EN ISO 62)	1,5% after 12- day immersion ⁴⁾

¹⁾ Upon addition of S 11 quartz sand in 1:2 ratio by weight.

²⁾ Upon addition of S23 quartz sand in 1:2 ratio by weight

³⁾ With or without addition of quartz sand on primed or non- primed substrate. .

⁴⁾ Without addition of quartz sand.

VIMEPOX FLOORING offers an ideal coating for professional floors like:

Food and drink industries:

- Large kitchens
- Slaughterhouses – meat-processing laboratories
- Fish-processing laboratories
- Canning industries
- Juice industries
- Milk and milk product facilities
- Wineries
- Beer factories
- Bake and confectionery laboratories

Other cases

- Chemical and pharmaceutical industries
- Small industries and storehouses
- Laboratories – workshops
- Parking lots
- Department stores
- Exhibition sites

How to use VIMEPOX FLOORING

1. Substrate

The substrate must be firm, dry and clear of dust, rust, oil and dirt in general that may obstruct bonding of the epoxy coating.

Therefore the substrate must be prepared by sand blasting, water jetting, milling or shot blasting.

However, these methods may create a harsh surface that must be filled with epoxy material, and consequently increases the consumption and cost. Surface scrubbing with a mosaic machine by using a rotating diamond disk will provide the desirable effect.

Removing the dust with a high-absorption industrial vacuum cleaner concludes the substrate preparation.

All cementitious substrates must fulfill the following fundamental criteria:

- Surface strength adhesion $\geq 1,5 \text{ N/mm}^2$
- Moisture $\leq 4\%$

These requirements need:

- Concrete strength category: at least C20/25
- Cement mortar quality: content in cement $\geq 350\text{kg/m}^3$
- Age of concrete and cement mortar >28 days

The epoxy coat must be protected against moisture and more importantly against water vapors that may attack its backside, causing detachment.

Provisions must be made to prevent such possibility, by using an appropriate vapor barrier under the concrete slate.

2. Priming

After the preparation and prior to the application of **VIMEPOX FLOORING**, porous cementitious substrates must be primed with the clear epoxy primer **VIMEPOX PRIMER-S**.

VIMEPOX FLOORING provides excellent bonding, both in primed and non-primed healthy and clean substrates.

Priming is used to seal surface pores and create a uniform, closed surface. Otherwise, the pores are filled with air, which comes upwards and creates bubbles that burst and leave undesirable little craters on the surface of the epoxy floor. Besides, the primer absorbs dust remains that could have an undesirable effect on the bonding of the epoxy coat.

The impregnation of the substrate with epoxy material may:

- improve its surface resistance
- seal capillary pores and solve the problem of minor deviations from the permissible moisture levels.

In order to achieve the desirable effect in the maximum depth, the special low-viscosity material **VIMEPOX BETON-IMP** may be used for impregnation. Otherwise use **VIMEPOX PRIMER-S** diluted with up to 15% **VIMEPOX SOLVENT**.

! Caution: If the substrate is highly absorbent, the impregnation priming must be repeated until the surface is properly sealed.

When the primer is dry, all possible substrate defects (cracks, surface (fake) joints, craters) must be puttied with epoxy mortar (**VIMEPOX FLOORING**: quartz sand

Ø 0-0,4mm = 1:2 to 1:3 or **VIMEPOX MORTAR**)

The application of the **VIMEPOX FLOORING** main coating must take place at the latest 24 hours after priming.

If this is impossible, the fresh primer must be powdered with M31 quartz sand

(Ø 0,1-0,7mm) with consumption of 1,0 –1,5 kg/m².

Upon hardening of the primer, the remaining sand must be removed with a high-absorbance vacuum cleaner.

3. Mixing

Components A (resin) and B (hardener) are packaged in different containers and in the required ratio. Therefore, no weighing is required before mixing, unless less quantity is needed than the one contained in the package.

Before mixing the two components, it is recommended to mix-homogenize the colored component A.

The mix of the two components should take place in a different clean mixing container, where the overall content of packs A and B will be emptied.

Use a slow drilling machine (up to 300 circles/min). Stirring must produce a fully homogenized mixture (about 5 min time).

Thereupon add 0-0,4mm quartz sand (we recommend the S1 quartz sand mix for smooth floors and the S23 quartz sand mix for nonslip floors), and stir until the resin-mortar reaches full homogenization.

4. Mixing ratio

The mixture ratio of **VIMEPOX FLOORING (A+B)** to quartz sand is 1:2 by weight for temperatures above 18° C.

If the temperature is lower, the viscosity of the epoxy resin is decreased, in which case you should also decrease the amounts of sand added (1:1,5 instead of 1:2) in order to avoid any self-leveling problems of the resin mortar.

5. Application

In order to apply the **VIMEPOX FLOORING** resin-mortar, you will need some special though simple tools:

- A tooth trowel with triangular teeth for laying the resin-mortar. The coat thickness depends on the height of the teeth. Instead of a trowel, you may use a floor finish scrapper that regulates the coating height.
- A spiked roll with pins for rolling the fresh epoxy coat. This way, the air trapped in the resin-mortar that could cause first bubbles and then small craters while coming up, will be set free. At the same time the resin-sand mixture of the coat is homogenized.
- Special spike slippers that allow the applicator to step on the fresh coat, especially during rolling with the spiked roller.

General Remarks

- Make sure that ambient temperature when applying the **VIMEPOX FLOORING** is at least 10-12° C (so that the substrate temperature is $\geq 8^{\circ}$ C) in order to allow appropriate hardening.
- Relative moisture must not exceed 70%. Otherwise, unfinished surface reaction of the coating may occur.

This could cause:

- Loss of polish (mat effect) and even worse:
- Creation of a non-hardened surface film that must be removed by scrubbing and water (e.g. with an electrical floor polisher and felt). The remaining mat coating will not present any strength problems.
- The direct impact of water on the fresh epoxy coating surface up to six hours after laying, may cause various effects depending on the increased ambient humidity:

discoloration or/and sticky surface. In this case, scrub and recoat the deteriorated surface.

- Moisture or debris in the underlying fresh coat may have an adverse effect on bonding of successive coats.
- In case that the waiting time between application of successive coats of **VIMEPOX FLOORING** is longer than allowed, or in case of repainting old coatings, the old surface must be scrubbed with a mosaic machine, in order to remove the surface polish. Then the new coat may be applied, without prior primer application.
- The surface of all epoxy coatings, both smooth and nonslip, is glossy by nature. If you wish a mat effect, you may remove the shine two days after the application, by scrubbing and sopping, as in non-hardened surface films.

Application Examples – Consumption

1. Smooth surface

1. Preparation of substrate (see above).
2. Priming of substrate with **VIMEPOX PRIMER-S**
Consumption: 200-300 g/m² depending on the absorbability of the substrate.
3. Application of a 1-3mm thick resin mortar layer with the tooth trowel.

Final thickness of coat [mm]	Height of teeth spatula [mm]	VIMEPOX FLOORING [kg]	Quartz sand S11 [kg]	Resin mortar [kg]
1	4	0,6	1,2	1,8
2	5,5	1,2	2,4	3,6
3	7,5	1,8	3,6	5,4

For coating thickness that exceeds 3 mm up to 6 mm, a second application of resin-mortar with possible powdering with quartz sand in-between is required (multilayer flooring).

! Caution: Bad leveling of the substrate can hardly be covered by the self-leveling one-layer resin-mortar. In this case, apply a leveling coat depending on the substrate's needs. For better results flatten the leveling coat after it is hardened, using a mosaic machine and proceed to the final coating, which may be limited to a thickness of 1,0-1,5 mm.

2. Nonslip surface

- 1-3. Follow the steps for a smooth surface.
Consumption: **VIMEPOX FLOORING (A+B)**: 1,2-1,3 kg/m²
Admixture of S23 quartz sand: 2 kg/m² (1:1,5)
4. Powdering with quartz sand, preferably Ø 0,4- 0,8 mm: 5 kg/m² or Ø 0,5- 1,0 mm or even Ø 0,8-1,2 mm for greater non-slipperiness



5. After **VIMEPOX FLOORING** is hardened, sweep and remove the remaining sand (about 1,5 kg/m²)
6. Sealing coating of the sand with floor finish scrapper and roll with
- VIMEPOX TOP COAT:** 0,7-0,8 kg/m² in one layer
or
VIMEPOX F-COAT: 0,5-0,6 kg/m² in two layers

The average thickness of the above nonslip coating is 4 mm at the most.

3. High non-slipperiness surface for ramps

A quartz sand compound is recommended for powdering, grain size: Ø 0,1-1,7mm and Ø 2,0 - 3,0 mm in 2:1 ratio.

The size of grains results to an increase of the required consumption of epoxy materials as follows:

VIMEPOX FLOORING substrate (A+B): 1,5 kg/m²
Admixture of S23 quartz sand: 2,5 kg/m²

Add 2-3% cock to **VIMEPOX FLOORING** (thixotropic agent) due to the ramp gradient.

Compound of quartz sand for powdering: 5-6 kg/m²
Sealing application of **VIMEPOX TOP COAT:** 1,4 - 1,5 kg/m² in two layers.
The average thickness of the coating is 6 mm.

Hygiene Measures – Precautions

Avoid contact of **VIMEPOX FLOORING** resin and hardener with eyes, mouth and skin. Also avoid vapor inhalation. Appliers must wear plastic gloves and protective goggles.

In case resin, the hardener or their mixture contacts the skin, wipe away with a paper napkin and rinse with soap and water (you may add 2% vinegar).

If the material gets into the eyes, rinse with plenty of water within 10-15 minutes and visit the ophthalmologist.

VIMEPOX FLOORING is completely harmless for health after hardening.

Cleaning – Storing

Clean the tools using **VIMEPOX SOLVENT** immediately after use.

The material must be stored in closed containers in places with ambient temperature higher than 10° C in winter and shady in summer.

Resistance and waterproofing against liquid chemicals

Test in accordance to DIN 28052-6: 2001-08

Liquid chemicals' group or single chemicals	Group no.	Liquid examples	Category
Petrol engine fuels according to DIN EN 228	1	Petrol	(+)
Heating petroleum EL according to DIN 51603-1 Diesel oil according to DIN EN 590, unused internal combustions engine oils, unused valvolines, saturated and aromatic hydrocarbons compounds with aromatic content <=20% by mass and ignition point >55° C	3	Heating petroleum Diesel Lubrication oils for internal combustions engines Valvolines	(+)
All hydrocarbons, used internal combustion engine oils and used valvolines, except for crude oil, benzolium and benzolium-containing compounds	5a	Toluole, xylole, paraffin, white spirit	(+)
Univalent and polyvalent alcohols (methanol of max. content up to 48% by volume), glycol ethers	7a	Ethanole, propanole, isopropanole, boutanole, glycole, red wine, beer	++
All organic esters and cetones	8	Acetone, methylo-ethylo cetone (MEK) Acetic ethylester	(+)
Aqueous solutions of organic acids (carboxylic acids) up to 10%, and their salts (in aqueous solutions)	12a	Acetic acid 10%, citric acid 10%, tartaric acid 10%, lactic acid 10%, oleic acid 10%, Orange juice, Tomato juice, edible oil	++
Organic acids (carbolic acids except for formic acid) and their salts (in aqueous solutions)	12	Acetic acid >10%	-
Inorganic acids up to 20% and inorganic salts hydrolyzed into an acidic aqueous solution (pH<6), except for hydrofluoric acid and acids with oxidizing action and their salts	13	Hydrochloric acid 20%, nitric acid 20%, phosphoric acid 20% sulfuric acid 20%	++
Inorganic bases and inorganic salts hydrolyzed into an alkaline aqueous solution (pH>8) except for ammonia and salt solutions with an oxidizing action (e.g. hypochlorides)	14	Sodium hydroxide solution 20% Potassium hydroxide solution 20%	++
Hydrochloric acid 35%			+
Sulfuric acid 30%			++
Sodium hydroxide solution 50%			++
Hypochlorous sodium (chlorine) with 14% active chlorine			++
Aqueous ammonia solution 10%			++
Aqueous solutions of inorganic non-oxidizing salt s with pH 6-8	15	Water, sea water, salt solution (sodium chloride), calcium chloride solution	++

* Assessment categories for **VIMEPOX FLOORING** coating

++ Waterproof and resistant coating for 3 months

+ Waterproof and resistant coating for 3 months, possible discoloration

(+) Waterproof and resistant coating fro at least 3 days, possible discoloration, swelling and/or reduction of surface strength

- Non-resistant coating