

TROWEL AND MORTAR FLOORING SYSTEMS

PRODUCT

22/06/23

PRODUCT DESCRIPTION

An epoxy mortar or trowel floor is an industrial seamless flooring system, consisting of quartz sand and resin as binder and intended to withstand very high mechanical loads. However, it is also resistant to particular chemical loads. The system is made up from various different sizes of granules, so that the final structure has very small pores that are quite easy to seal.

Because the forces exerted on these floors are disseminated downwards in a conical fashion, these floors are designed to withstand pressures of up to 72 N/mm² (see section F). This flooring is therefore particularly suitable for factory halls where there is much traffic (fork-lift trucks, vehicles with caterpillar treads etc.) or where there is heavy 'pedestrian traffic' such as corridors in supermarkets and public buildings. The prime condition, however, is that the substrate underneath is strong enough.

In modern houses, mortar or trowel epoxy is often used too.

POSSIBILITIES

INTERIOR

Standard thickness 6 mm. Depending of the strenght aimed for, this can be amended. The thickness can be bigger in order to even out floor surfaces.

Depending on the aesthetic result, the floor can be finished in different ways. See the section on waterproofing layers and top coatings.

OUTDOOR

Not applicable.

HYGIENIC SPACES

Suitable for use in industrial hygiene and private rooms (toilets, bathrooms, kitchens. Can also be used for open showers, provided the necessary precautions such as waterproofing membrane (like kerdi cloth) under the primer are used and an additional sealing layer is applied.

COLOURS

More than 1000 different colours available. There is a standard choice from a selection of 54 blending colours. All colours and some sizes of granules can be mixed.



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CONDITIONS

The substrate on which the resin will be applied, should be strong enough and for the duration of application must always be clean, dry, and free of dust and grease. Further specifications are listed under the general conditions: Working with resin floors.

CONSTRUCTION

CONSTRUCTION MORTAR FLOOR								
Topcoat	PUW OR PUW-TOPCOAT NO SCRATCH 02 OR EP-TOPCOAT							
Pore-filler	EPG UV / PA-CLEAR-FILLER							
Mortar	ETF+ granulats							
Broadcast	H0,4-0,8 of 0,1-0,3							
Primer	EQC or TURBO	EQC or TURBO	EPW or ETP	EQC or EPW	EPG SPECIAAL	EQC	EQC + 5% silane	opschuren + EPW
Kind of base	Screed	Concrete	Tiles	Wood	Open quartz carpet	Closed quartz carpet	Epoxyfloor	Tiles
Condition base	<u>DRY</u>							



APPLICATION INSTRUCTIONS

PRIMER

Types :

Depending on the substrate, different primers are applied.

Concrete and screed floor

Most appropriate primer: EQC/A+B (this is a universal two component epoxy primer). If the substrate is still damp, one can opt for the primer EWS/A+B. Consumption depends on the level of suction of substrate (av. 0.200 kg/m²).

Tile floors

In most cases, it is absolutely necessary that the tiles are firmly attached and that the joints between the tiles are evened out. This can be done by applying a tile primer EPW/A+B or ETP/A+B first. The EPW/A+B is a fast-drying (30 minutes) water-based epoxy primer. However, the best possible bonding strength is obtained by ETP/A+B. For spaces that will be permanently wet, it is recommended to use ETP/A+B.

Anhydrite floor

EQC/A+B, a universal two-component epoxy primer, is the most appropriate primer for anhydrite floors.

Application

When you are using a two-component primer, mix the A and B components with a drill to produce a homogeneous mixture.

Spread the resin across the floor with a sheepskin roller

Broadcast fine sand (0.1-0.3 mm or 0.3-0.8 mm) over the layer while it is still wet.
Consumption: ± 0.100 kg/m²

NOTE

It is best to let the primer dry until it no longer sticks, but in the case of time constraints, you might not have to use sand be scattered and you can work 'wet in wet' (only for standard epoxy primer).



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The best adhesion between primer and stone carpet is obtained 12 to 24 hours after applying the primer. (Except for fast-drying primers EPW /A+B).

All these primers improve adhesion, but none are waterproof products.

MORTAR AND TROWEL COMPOUNDS:

In order to facilitate processing, it is recommended to choose 'glossed' sand. This ensures the smaller sand particles to stick less to the trowel and to allow you to spray less water onto the trowel during application. The result is that the labourer is less tired and that less trowel strokes are used for the layer.

Mix the components A and B of the binder ETF32/A with a drill to produce a homogeneous mixture.

Add the homogeneous resin to the dry mortar-trowel compound and mix it with a low-speed drill or a power mixer until all the granules are evenly wetted.

Subsequently spread the aggregate across the floor and even it out with a mason's float or a leveller bar.

These operations should be repeated until the entire surface has been laid. Then, you will have to wait at least 16 hours you can walk on the floor and apply the next layer.

Consumption

Size of quartz granules	0.4-1.2 mm	0.8-1.2mm	M3H-trowel mass
Floor thickness	6 mm	6 mm	6 mm
Weight per m ²	12	12	12
% resin added to quartz	10%	10%	10%

NOTE:

When the application is taking place, spray with some water.

When laying the floor, the quartz should always be pressed upon very well. If that does not happen, the result will be an structure which feels rough and which will require a lot more sealing substance! Adding to that, the floor will be less resistant too.



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It is best to have a 1000 Watt lamp shine on the floor during the entire process of installation and actual application. This allows verifying whether the floor is even or not, and whether it has trowel marks or ridges or not.

This should be repeated until the entire substrate is covered. After that, you will have to wait at least 16 hours before you can walk on the floor and apply the next layer.



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PORE-FILLER

EPG UV

Read technical datasheet EPG UV/a+b

PA-FILLER CLEAR

Read technical datasheet pa-filler clear

TOPCOAT

PUW

Read technical datasheet puw/a+b

PU-TOPCOAT NO SCRATCH 02

Read technical datasheet pu-topcoat no scratch 02

EP-TOPCOAT

Read technical datasheet ep-topcoat



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SKIRTING BOARDS OR VERTICAL STAIRS

Depending on personal preferences, a hollow or straight skirting can be used.

Straight skirting board

First apply a profile to the wall.

Next mix the viscous A component slowly.

Subsequently mix components A and B of the EVB/A+B using a drill

Use a paint brush and spread a small amount of binding agent across the surface that will be treated.

Mix the quartz with 8 to 10% EVB/A+B and apply it using a trowel.

For better positioning it is possible to spray the trowel with some water.

In order to prevent spilling on the newly placed mortar, this best happens one day before applying the mortar.

Hollow skirting board:

Some industries (such as food) require a hollow skirting board for hygiene and cleaning purposes.

First apply a profile to the wall.

Next mix the viscous A component slowly.

Subsequently mix components A and B of the EVB/A+B using a drill

Use a paint brush and spread a small amount of binding agent across the surface that will be treated.

Mix the quartz with 8 to 10% EVB/A+B and apply it using a hollow trowel.

For better positioning it is possible to spray the trowel with some water.

This happens at the same time of the application of the mortar.



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MORE INFORMATION ABOUT THE PRODUCTS

For an appropriate execution of the application, it is necessary to consult the most recent data sheet of each of the products used.



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TECHNICAL DATA

PRESSURE STRENGTH

(see report DE 571 603 CSTC)

Granules M3 + 10% ETF30/A+B: 49,7 N/mm²

Granule size M3 + 12% ETF30/A+B: 70,7 N/mm²

PRESSURE STRENGTH

(see report DE 571 603 CSTC)

Granules M3 + 10% ETF30/A+B: 15,2 N/mm²

ADHESION STRENGTH

Stronger than concrete. For specific information, see the datasheets of the various primers.

TEMPERATURE RESISTANCE

Operating temperature: from -40 ° C to +60° C

Long-term resistance up to + 60°C

Short-term resistance up to +100°C



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CHEMICAL RESISTANCE

(According to DIN 16524)

Name	Concentration	Result
Acetic acid	5-10%	excellent
Lactic acid	5-10%	excellent
Formic acid	5-10%	well
Wine Acid	5-10%	excellent
Hydrochloric acid	20%	excellent
Sulfuric acid	40%	excellent
Kitchen salt	20%	excellent
Caustic soda	20%	excellent
Ammonia	10%	excellent
Cement Solution	5%	excellent
Distilled water		excellent
N-Butanol		excellent
Xylol		excellent
Diesel oil		excellent
Skydrol		excellent

COMBUSTIBILITY

Classification according to European standard classification EN 13501-1:

- a. Fire behaviour: Bfl
- b. Additional classification : s1

Method used:

- a. EN ISO 9239-1:2002
 Average critical flux (kW/m²): ≥11
 Average smoke attenuation (% min) : 0.91
- b. EN ISO 11925-2:2002
 Flame spread Fs: compliant
 Ignition of the filter paper: compliant

Classification according to ASTM E648-93a:



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Average critical flux (kW/m²): 1.08

DETERMINATION OF THE BENDING STRENGTH PULL

Structure of the granules	Colour codes	Quantity epoxy	av. bending strength N/NM ²
M3	SC 150	10%	15,24
M3	SC 297	12%	22,60
M3	SC 297	14%	30,40

DETERMINATION OF THE BENDING STRENGTH

Structure of the granules	Colour codes	Quantity epoxy	av. bending strength N/NM ²
M3	SC 150	10%	49,74
M3	SC 297	12%	70,66
M3	SC 297	14%	81,40

ANTI SKID VALUE

	Pendulum/SRT		R Value nach DIN51130 (06/2004)	
	Dry	Wet	average total acceptance angle (in °)	Classification BGR 181 - 10/2003
ETF31-M3H + EPG	52	21	7,2	R9
ETF31-M3H + EPG + PUW AS80	54	31	17,6	R10
ETF31-M3H + EPG + PUW AS160	53	31	11,3	R10
Mortel Granule is M3H				



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SAFETY

Always read the security (or the MSDS) sheet of the various products used THOROUGHLY.

