

Maleki-DFS 410

Design floor

Item-No.: 1415

White or colored, self-leveling design floor. Hardens fast and tension-relieved with a layer thickness of 1 – 30 mm.



Technical data

Product type	CT-C40-F10-A12 according to DIN EN 13813	Mixing ratio	6.0 L per 25 kg powder
Abrasion resistance according to Böhme	A12	Strength	Compressive strength approx. 40 N/mm ² Flexural strength approx. 10 N/mm ²
Processing temperature	Min. +2 °C, max. +35 °C	Processing time at 20°C	approx. 35 min
Application thickness	1 – 30 mm Ground depressions up to 40 mm	Consumption	approx. 1.8 kg / m ² and mm layer thickness
Loadability	Curing at 20°C after 4 hours	Density	Bulk density approx. 1.1 kg/dm ³ Fresh mortar density approx. 2.0 kg/dm ³
Walkable	1 day		
Light load	4 days		
Fully loadable			

Properties

- Eco-Binder technology
- environmentally friendly
- mineral
- very low emission EMICODE EC 1^{PLUS}
- decorative white/colored surface
- fast curing and tension-relieved
- high flowability
- high abrasion resistance
- easy application
- also processible by machine

Range of usage

- for indoor use
- for revision of concrete and screed
- quick usable final coating
- applicable in layer thicknesses of 1 – 30 mm, partially up to 40 mm
- for larger areas a layer thickness of approx. 3 – 5 mm is recommended
- for application of DS 2 and DS 3 design leveling compounds according to TKB-Technical Briefing Note 19 of the German Adhesives Association (Industrieverband Klebstoffe e.V.)

Product systems

- Lithokor Design floor

Substrates

- Concrete
- Cement and calcium sulfate-based screed, heated and non-heated
- Self-leveling compounds, floor filling compounds
- Dry screed
- Adhering ceramic coverings

Preparation of substrate

Prior to coating, ensure that the surface is stable and has sufficient surface tensile strength. The surface should also be ready for coating, dry or matt damp, clean and free from all kinds of debris. Mechanical surface preparation e.g. shot-blasting is recommended. Due to roughening the surface, the adhesion for the subsequent layer can be improved.

Already existing cracks must be repaired professionally. Cracks with a crack depth and crack width up to 5 mm can be filed with Maleki-FS 440. Cracks which are over 5 mm wide / deep and deeper ruptures must be filled with Maleki-VM 530. In general, only crack patterns that are no longer subject to movement can be repaired force-locked with the products mentioned.

The surface should be permanently vibration-free and crack-free. Therefore, new concrete or screed should have a minimum age of 28 days. The adhesive strength of the substrate must be at least 1.5 N/mm².

The substrate has to be dry for priming, and dried for 2 hours after priming with Maleki-TG 110. By priming the surface, the absorbency of the substrate is adjusted. This avoids the rising of air bubbles during the subsequent coating. In order to

guarantee this on critical undergrounds, a test area of 1m² should be created. Apply a further layer of primer if necessary. The coating work on the primer has to be finished within 6 hours. Please refer to the technical data sheet of Maleki-TG 110 for more information.

The edge joint must be prepared with a suitable expansion strip. Thereby attention must be paid to a clean adhesion to avoid material flowing below or behind the expansion strip. Expansion joints must be adopted. After finishing all coating works, all joints have to be filled with a permanently elastic compound. Transitions and closing edges should be protected against over-flow by installing end rails.

For coatings on tiled floors the surface has to be pre-leveled with Maleki-IFS 410. For this purpose, Maleki-IFS 410 is applied by a toothed spatula or a screed rake. The layer thickness above the tile surface should be at least 1 mm. The joint profile has to be fully covered. After curing time of approximately 6 hours the surface can be primed with Maleki-TG 110. The application of the primer with all respective waiting times has to be handled according to the normal substrate preparation. Due to the application on tiled floors attention should be paid to a crack-free underground. Already existing cracks can also be filled with Maleki-FS 440 (s. section for crack repair). However, loose tiles and tiles over cavities must be removed.

For simultaneous work on various substrates with changing absorbencies the surface has to be pre-leveled to maintain a uniform coloring of the mortar. For this purpose, Maleki-IFS 410 is applied by a toothed spatula or a screed rake on the primed surface. The layer thickness should be 1 mm above floor level. All further procedures for application of the actual coating are done according to the coating of tiled floors.

Mixing and application

Unpigmented mortar

Mix the material by using a mixing machine. First, add 6.0 liters of water per 25 kg powder material into the mixing container. Then, pour Maleki-IFS 410 inside while stirring. For manual applications the hand-held mixer BSM 2882 by Baier Tools and the Collomix mixing paddle DLX 152 HF are recommended. By using the respective mixing paddle, a proper thread adapter must be used. For mixing of partial quantities in smaller containers the mixing paddle DLX 90 S for drilling machines is recommended. The material has to be mixed intensely for 2 minutes, left to set for 2 minutes, and then mixed again for 1 more minute. Single mixing batches must be mixed fast and uniform. The material has to be poured out seamlessly within the workability time. With manual processing an aeration time of up to 5 minutes has to be maintained between the end of the mixing time and application of the material. This minimizes rising of air bubbles within the poured material.

After mixing, apply Maleki-IFS 410 onto the primed surface and distribute it with a pin leveler to the intended thickness. In order to avoid processing marks in the fresh surface use a surface scraper to smoothen the surface.

For optimal leveling of the fresh mortar and to maintain the flatness tolerances according to DIN 18202 it is recommended to use a layer thickness of approximately 3 – 5 mm for larger areas. Thereby the required layer thickness depends on the surface quality of the substrate which has to be coated.

For further removal of any pouring streaks and minor undulations, a fine spiked roller (metal roller) can be used for unpigmented and single-colored floors. Therefore, the fresh surface is treated with a spiked roller in a crosswise motion. Do not walk in the spiked surface. Consider the spikes to be long enough for the respective layer thickness.

The coating has to be protected from too quick drying (solar radiation, draft) for the 1st 24 hours. Do not cover the finished surface with foils or other materials.

Pigmented mortar

The respective pigment is added to the mixing water in the desired dosage (see table below). The pigment has to be mixed intensively for 1 minute. In case of single colored floors all further steps are carried out as described above. At this point do not use a conventional trowel to maintain a uniform surface. For floors with two or more colors conventional tools (Screed rake, spiked roller, etc.) should not be used due to the possible influence on the design concept. Without using these tools, the fresh mortar has to be distributed with a suitable trowel or a surface scraper. An aeration time of up to 5 minutes has to be maintained between the end of the mixing time and application of the material.

By using liquid pigment preparations, the used amount of water can be reduced down to 5.75 L to ensure a uniform color distribution. For a cloudier finish (not possible with all pigments) use the standard amount of water as stated in the table.

Prior to application of the mortar the coloring and the desired visual appearance should be checked on a separate test area. The water amount has to be adjusted accordingly. It is recommended to use Maleki-Pigments for application of IFS-products. For other pigments and preparations no certain appearance or quality can be guaranteed. The usability of each pigment and the suitability for the desired finish have to be clarified with the customer service in advance.

For more information on the approximate appearance of the mortar with selected Maleki pigments, please refer to the "Lithokor Color Chart".

For the generally expected appearance of mineral self-leveling compounds please refer to the fact sheet "Self-leveling compounds in decorative areas".

Pigment	Max. dosage per 25 kg powder
Maleki liquid pigments (black)	80 g
Maleki liquid pigments (other colors)	500 g
Maleki powder pigments (black)	150 g
Other pigments (Oxide basis)	500 g

Application on larger areas

It is recommended to use bigger mixing devices or mixing pumps for larger areas:

- > 50 m²: Mobile mixing station Giant 120 by Baier Tools.
- > 300 m²: Continuous mixing pump duo-mix 2000 by

m-tec or comparable machine with dual mixing system.

For an even better result, a separate mixing and conveying system is recommended (mixer D20 and pump P20 from m-tec). For more information about the listed machines and the respective application please refer to the current "Lithokor Installation Manual for design floors".

Tools and cleaning

Hand-held mixer or mixing device, stirrer, trowel, pin leveler, surface scraper and spiked shoes.

All equipment should be washed clean and dried before and after application

Post-processing and coating protection

All waiting times mentioned above are dependent on the respective ambient conditions and the coating thickness used. All values given are valid for 20°C and for the recommended layer thickness of 3 – 5 mm.

The following conditions may lead to an extension of the indicated waiting times:

- Low temperatures below 10°C
- Permanently high relative humidity
- Installation in high layer thickness above 10 mm

In general, after a drying time of at least 24 hours, all surfaces created with Maleki-DFS 430 must be completely sealed with Maleki-VS 930. Please refer to technical data sheet of Maleki-VS 930 for more information.

Heated floor constructions

For applications on heated floor constructions the underfloor heating system must be downregulated to approx. 20°C at least 3 days before application. 48 hours after application the flow temperature can be increased stepwise to the desired value (increase of 5°C per day).

Packaging and shelf-life

25 kg paper bag

Original packing is storable for 12 months in dry and controlled temperate areas (not below 0 °C, recommended 10 – 25 °C). Reseal opened containers immediately and use within a very short time.

Associated products

Maleki-VM 530	Item-No. 1442
Maleki-FS 440	Item-No. 1413
Maleki-TG 110	Item-No. 1110
Maleki-IFS 410	Item-No. 1415
Maleki-VS 930	Item-No. 1828

Safety notes

There is no mandatory hazard labeling for Maleki-IFS 410. Avoid inhaling dust when opening packaging. Protect skin and eyes during the mixing process. Please refer to the Material Safety Data Sheet which can be requested on www.malekigmbh.com

for further information on safety during transportation, storage, handling and disposal. Follow instructions on the packaging.

Relevant regulations and fact sheets

When applying Maleki-IFS 410 the following regulations and fact sheets must generally be observed, unless otherwise specified in this technical data sheet:

General

DIN 18202:2019-07

Tolerances in building construction – Buildings

DIN EN 13318:2000-12

Screed material and floor screeds – Definitions

DIN EN 13813: 2003-01

Screed material and floor screed – Screed materials – Properties and requirements

BEB-Work and information sheet 8.8

"Design screeds" – Notes on planning, execution and properties of designed mineral floors.

BEB-Work and information sheet 8.9

Notes on describing the surface quality and assessing the execution of designed mineral floors.

BEB-Work and information sheet 8.10

Instructions for the protection of the surface and for cleaning and care of designed mineral surfaces.

TKB-Technical Briefing Note 9

Technical specification and installation of floor levelling compounds.

TKB-Technical Briefing Note 19

Floors made of mineral design/ decorative levelling compounds. Requirements, execution and classification.

Maleki data sheets

Lithokor Color Chart

Fact sheet Self-leveling compounds in decorative areas

Lithokor Installation Manual for design floors

Notes

Some minor color differences are inevitable due to different production batches. This should be taken into account while performing work. It is necessary to work on designated sections with the same batch (see label) if a uniform color is desired. Due to different water addition during application or changing working techniques light color shading in the coating surface can occur. Please take note that this coating is a mineral product. Product colors are not fully conformed to the RAL-Map and therefore they should only be seen as estimated classifications.

In case of extreme climatic conditions at the limits of the recommended application temperatures (+2 - 35°C), it is recommended to apply a small test quantity to check the workability time under the given conditions.

The content of this technical data sheet corresponds to the latest development and our applications experience. All information is based on ideal conditions and therefore does not apply for every application purpose. Due to different materials, substrates and different actual site conditions no warranty is given for

Technical data sheet

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the customer's application. In particular, we assume no liability based on this information or any verbal statements. The only exception is when we can be blamed for the case of intent or gross negligence. In that case the customer has to prove that he has transmitted all required information completely and in a timely manner for a proper and promising evaluation by Maleki GmbH. Any further details regarding the application of our products have to be confirmed in writing by Maleki GmbH. The customer must test the product's suitability for the intended application and purpose. We reserve the right to change the product specifications due to the ongoing development. Apart from that our general terms and conditions are valid. This data sheet supersedes all earlier technical data on this product. The technical data sheet can be requested on www.malekigmbh.com.



Maleki GmbH

Carl-Stolcke-Straße 1
D - 49090 Osnabrück
Fon. +49 541 2024799-0
Fax +49 541 2024799-9

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No. 1415 EN

EN 13813

EN 13813 CT-C40-F10-A12

White or colored, self-leveling design floor.
Hardens fast and tension-relieved with a
layer thickness of 1 – 30 mm.

Fire behavior	A2
Compressive strength	C40
Flexural strength	F10
Release of corrosive substances	CT