MALEKI
GREEN BUILDING PRODUCTS

Maleki-FEC 370

Fine flowing screed **Item-No.: 1429**

Self-leveling, fine flowing screed. Hardens tension-relieved with a layer thickness of 5 – 70 mm.

Technical data

Product type	CT-C40-F7 according to DIN EN 13813	**Mixing ratio**	4.4 – 4.5 l water per 25 kg powder
Grain size	0 – 2 mm	**Strength** Compressive strength Flexural strength	 ≥ 40 N/mm² ≥ 7 N/mm²
Processing temperature	Min. +2 °C, max. +35 °C	**Processing time at 20°C**	approx. 30 min
Application thickness Bonded screed On insulation layer On separating layer	 5 – 70 mm 25 – 70 mm 20 – 70 mm	**Consumption**	approx. 1.7 kg / m² and mm layer thickness
Loadability Walkable Light load Fully loadable Fully loadable in exterior areas	Curing at 20°C after 4 hours 1 day 4 days 7 days	**Density** Bulk density Fresh mortar density	 approx. 1.3 kg/dm³ approx. 2.0 kg/dm³

Properties

- Eco-Binder technology
- environmentally friendly
- mineral
- very low emission EMICODE EC 1 PLUS
- fast curing and tension-relieved
- flowable
- easy application
- also processible by machine

Range of usage

- for indoor and outdoor use
- used to smoothen rough and uneven concrete and screed surfaces
- installation of heated and unheated screed constructions
- installation of floating screeds, screeds on separating layers and bonded screeds
- walkable and ready for covering at an early stage
- applicable in layer thicknesses of 5 – 70 mm

Product systems

- Industrial Flooring System
- Lithokor Design floor
- Acid protection
- General use: Substrate preparation for Maleki products

Substrates

- Concrete
- Cement and calcium sulfate-based screed, heated and non-heated
- Asphalt screed
- Magnesia screed
- Dry screed

Preparation of substrate

General 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.

Bonded screed

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-

Maleki GmbH • Carl-Stolcke-Str. 1, D-49090 Osnabrück • Tel +49 541 20 24 799-0 • info@malekigmbh.com • www.malekigmbh.com

blasting is recommended. Due to roughening the surface, the adhesion for the subsequent layer can be improved.
Already existing cracks must be repaired professionally. Crack patterns with a crack depth and width up to a maximum of 5 mm can be covered with Maleki-FS 440. Cracks over 5 mm width and depth and deep ruptures must be filled with Maleki-VM 530. In general, only crack patterns that are no longer subject to movement can be filled 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 dried for 2 hours after priming with Maleki-TG 110. By priming the surface, the absorbency of the substrate is adjusted. This avoids 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.
Maleki-TG 110 is not used as a primer for coating mastic asphalt surfaces. The suitability of each surface must always be checked individually. This must be agreed with customer service. After checking the absorbency, a suitable surface can be slightly pre-wetted before application, if necessary.

Screed on insulation / separating layers

The insulation boards must be laid professionally, with offset joints and without cavities. The insulation boards used must be suitable for use as floor or screed insulation and for the selected floor structure. The insulation layer must be covered with a suitable separating layer (PE foil). The foil should be laid and glued with an overlap of 10 cm without folds. The foil is then also glued to the edge insulation strip to prevent the fresh mortar from running behind.

Heated screed

For heated screed constructions, the respective underfloor heating system must be installed professionally and be suitable for the intended use. A leakage test of the entire system must be carried out before starting the screed work.

Mixing and application

General information

Do not use special screed additives or other binders for mixing.
The coating has to be protected from too quick drying (solar radiation, draft), frost and rain for the 1st 24 hours. Do not cover the finished surface with foils or other materials.

Manual mixing

For small areas or for thin-layer applications, Maleki-FEC 370 can also be mixed manually.
Mix the material by using a mixing machine. First, add 4.4 – 4.5 liters of water per 25 kg powder material into the mixing container. Then, pour Maleki-FEC 370 inside while stirring. For manual applications the hand-held mixer BSM 2882 by Baier Tools and the Collomix mixing paddle KR 140 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-FEC 370 onto the respective surface and distribute the material with a suitable rake to the intended thickness. Thereby the required layer thickness depends on the surface quality of the substrate which has to be coated.
The fresh surface is finished directly with a dapple bar suitable for the respective room. If the layer thickness is below the tube diameter of the respective dapple bar, the surface can also be finished with a surface scraper. Therefore, the mortar surface is also processed with short dipping movements. In case of applications on separating layers or on underfloor heating systems, the use of pin levelers or toothed scrapers should be avoided.

Machine processing – medium sized areas

Mix the material by using a commercial compulsory mixer. It is recommended to use the mixer WM Jetmix 125/180 by Werner Mader GmbH.
First, add the required amount of water of 4.4 – 4.5 L per 25 kg powder material into the mixing container. Then, add Maleki-FEC 370. Add the required amount of powder stepwise to avoid formation of lumps. After adding all components, the fresh mortar is mixed intensively for at least 3 minutes until the material has reached the desired consistency. At the beginning of the mixing process the mortar is creamier than at the end of the recommended mixing time. To avoid overdosing of mixing water, additional amounts of water should only be added at the end of the mixing process. Should it be necessary to add water, the fresh mortar must be mixed for a further minute.
After mixing the mortar has to be poured out seamlessly. Distribute the material with a suitable trowel or rake to the intended thickness. It is recommended to use the mortar pump WM Variojet FU by Werner Mader GmbH for larger areas. For this purpose, the pump is operated in the standard version with the KP 20 feed screw.
The selection and preparation of all necessary accessories should be coordinated with the manufacturer. The suitability of other mortar pumps and the adjustment in accordance with the used mixing system must be checked prior to application.

Machine processing – large areas

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

- > 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 ''System Installation Manual for industrial floors'' or the ''Lithokor Installation Manual for design floors''.

Maleki GmbH • Carl-Stolcke-Str. 1, D-49090 Osnabrück • Tel +49 541 20 24 799-0 • info@malekigmbh.com • www.malekigmbh.com

Tools and cleaning

Hand-held mixer or mixing device, stirrer, compulsory mixer, trowel, pin leveler, and suitable footwear.
All equipment should be washed clean and dried before and after application.

Covering with subsequent coatings

When used as a levelling layer without further treatment of the surface, a final topcoat must always be applied afterwards. For subsequent covering of Maleki-FEC 370 the dried mortar must be ready for covering. For laying of ceramic coverings, a residual moisture of ≤ 2.0 CM-% (unheated) or a residual moisture of ≤ 1.8 CM-% (heated) must be achieved. For laying of vapor-proof or moisture-sensitive coverings (e.g. Parquet, PVC, etc.) a residual moisture of ≤ 3.0 CM-% must be achieved. The respective residual moisture must be determined using the CM method.
For subsequent coating with products of the Maleki-IFS line the mortar has to cure at least 24 hours before the substrate can be primed with Maleki-TG 110.
All stated waiting times depend on the respective ambient conditions and the application thickness. The following conditions can lead to an extension of the stated waiting times:

- Low temperatures, especially below 10°C
- Permanently high relative humidity

Use as a wear layer

For the use of Maleki-FEC 370 as a basic final coat for light to medium loads, a suitable surface protection system must be applied 24 hours after application see table below). Please refer to the respective data sheets for more information about the used products.

Application	Protection system	Quantity [g/m²]
- Outdoor areas - Permanent water load and higher mech. load - Increase of chem. resistance	Maleki-DW 100 + Maleki-LL 100	50 – 80 15 – 30
- Focus on stain protection and easy cleaning - Increase of chem. resistance - Light mech. load	Maleki-VS 930	150 – 200 (one layer) Up to 300 (two-layer)

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). This information only applies for Maleki-FEC 370. For the subsequent laying of other coverings on the screed, please refer to the respective manufacturer instructions.

Packaging and shelf-life

25 kg paper bag
For larger quantities from approx. 24 tons, the material can also be delivered in bag bags. The desired form of delivery must be clarified in advance with the customer service.
Original packing is storable for 9 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-FEC 370	Item-No. 1429
Maleki-TG 110	Item-No. 1110
Maleki-DW 100	Item-No. 1815
Maleki-LL 100	Item-No. 1810
Maleki-VS 930	Item-No. 1828

Safety notes

There is no mandatory hazard labeling for Maleki-FEC 370. 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-FEC 370 and subsequently reworking it with other coverings, 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 8.1
Assessing and preparing substrates in old and new buildings.

TKB-Technical Briefing Note 8
Assessing and preparing substrates for flooring and parquet work.

TKB-Technical Briefing Note 14
Rapid screeds and cement screeds with screed additives.

Maleki GmbH • Carl-Stolcke-Str. 1, D-49090 Osnabrück • Tel +49 541 20 24 799-0 • info@malekigmbh.com • www.malekigmbh.com

VDPM data sheet: Cement flow screed

Maleki data sheets

Technical data sheets of all listed system products

System Installation Manual – Maleki-Industrial Flooring System

Notes

Ensure constant water addition during application to maintain a uniform product quality.

CE

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

23

No. 1429 EN

EN 13813

EN 13813 CT-C40-F7

Self-leveling, fine flow screed. Hardens tension-relieved with a layer thickness of 5 – 70 mm.

Fire behavior	A1
Compressive strength	C40
Flexural strength	F7
Release of corrosive substances	CT

Maleki GmbH • Carl-Stolcke-Str. 1, D-49090 Osnabrück • Tel +49 541 20 24 799-0 • info@malekigmbh.com • www.malekigmbh.com