

Maleki-DS 220

One-component waterproofing

Item-No.: 1314

One-component mineral waterproofing slurry. For the preparation of a waterproof coating on concrete and other cementitious substrates.

Technical data

Number of coats	2 layers	Mixing ratio	l water per 25 kg powder
		Cove with sand	2.9 – 3.0 L
		Creamy	3.75 – 4.25 L
		Slurry	4.5 – 4.75 L
Compressive strength	approx. 35 N/mm ²	Flexural strength	approx. 7.5 N/mm ²
Processing temperature	Min. +5 °C, max. +35 °C	Processing time at 20°C	approx. 45 min
Single layer thickness	2 mm	Consumption	approx. 2 kg / m ² and mm layer thickness
Total application thickness	max. 4 mm		
Loadability (mech.)	Curing at 20°C	Density	
Walkable	1 day	Bulk density	approx. 1.3 kg/dm ³
Light load	1 day	Fresh mortar density	approx. 1.9 kg/dm ³
Fully loadable	7 days		

Properties

- Eco-Binder technology
- environmentally friendly
- mineral
- very low emission EMICODE EC 1^{PLUS}
- high resistance to salt water and chemicals
- resistant to sulfate according to DIN 4030, exposure class XA2
- suitable for drinking water according to DVGW W 270 and W 347
- waterproof up to 5.0 bar after 28 days
- waterproof up to 1.5 bar after just 7 days
- in case of negative water load, waterproof up to 0.3 bar depending on substrate
- durable at early stage
- also processible by machine

Range of usage

- ideal for waterproofings of drinking water reservoirs
- for waterproofing of building constructions in interior and exterior areas, as well as in permanently wet and under water areas against:
- soil moisture
- non-pressing ground and seeping water
- pressing water

Product systems

- Sewer renovation
- Interior basement waterproofing
- Maleki-CP OS 8 (Car park coating)
- General use: Rigid waterproofing for Maleki products

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.

Deep ruptures in the floor must be closed beforehand with Maleki-VM 530. Breakouts on the wall can be filled with sand filled material. Therefore, Maleki-DS 220 is pre-mixed 1:1 with sand of the grading curve 0.1 - 0.4 mm. Afterwards the mortar is mixed with 3.25 L water per 25 kg sand/powder mix. Alternatively, the ruptures can be filled with Maleki-DS 240. The surface should be permanently vibration-free and crack-free. Already existing cracks must be repaired professionally. The adhesive strength of the substrate must be at least 1.5 N/mm.

Application of waterproofings for areas with water under pressure is only possible on concrete surfaces.

Pre-wet absorbent surfaces like concrete, cement plaster, sand-lime brick (fully joined with cement mortar), brick, heavy concrete and hollow block masonry walls. Pre-wetting according to moisture content of the substrate until the surface is matt damp. Avoid puddles. In case of pressing water or acute

leakages the substrate must be pre-filled before application of Maleki-DS 220. Therefore, the specific spots are treated or filled with water stop cement to ensure sufficient curing of the subsequent waterproofing.

In case of internal waterproofings against negative water pressure, the substrate must provide a sufficient bonding strength. Use Maleki-TG 110 as primer for highly absorbent substrates. Observe drying times of the primer. Please refer to the technical data sheet of Maleki-TG 110 for more information.

Mixing and application

Normal application

Mix the material by using a mixing machine. First, add 3.75 – 4.25 liters of water per 25 kg powder material into the mixing container. Then, pour the powder 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 KR 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. Mix only as much material as can be applied within 45 minutes.

Maleki-DS 220 is applied in two layers. The single layer thickness for each layer is about 2 mm. The maximum thickness of the whole coating is 4 mm.

It is recommended to apply both layers one after another. Therefore, the first layer must be cured sufficiently. In case of residual moisture in the mortar it is not necessary to pre-wet the substrate for the second layer. As soon as the mortar surface shows dry spots or is completely dried at a later stage, the surface must be pre-wetted (see section for substrate preparation).

For optimal adhesion and for complete filling of the substrate to be coated the first layer is applied by fulling with a brush. Therefore, the material is mixed as a slurry. The surface should be at least matt damp. The second coating is applied by trowel. Please refer to the table above for the required mixing ratio for each procedure. For the use of Maleki-DS 220 as an intermediate layer the waterproofing can be rubbed off with a brush to roughen the surface for the subsequent coating.

Do not apply other products or coatings between application of single layers. If grinding or polishing work is necessary to achieve a smoother surface, all steps should be performed after sufficient curing of the second layer. 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.

Subsequent coatings (Ceramic coverings, self-leveling compounds, gypsum-based mortars and other mineral coatings) should only be applied after sufficient curing of Maleki-DS 220. The minimum waiting time is usually 24 hours. For applications in higher layer thicknesses above 4 mm, we recommend Maleki-DS 240. In general, the same application conditions apply. Please refer to the technical data sheet of Maleki-DS 240 for more information.

Rounding of edge areas

For rounding of wall-floor or wall-wall transitions Maleki-DS 220 is prepared as a cove. First, the mortar is mixed with 4.5 – 4.75 liters of water per 25 kg powder material (mixing procedure described above). Slightly pre-wet the surface on both sides of the specific edge. Afterwards apply Maleki-DS 220 (application by brush) as a bonding slurry for complete covering. The subsequent application of the cove is done wet-in-wet. Therefore, Maleki-DS 220 is first mixed with quartz sand (Grain size: 0.1 – 0.4 mm). Afterwards the material is mixed with 2.9 – 3.0 water per 25 kg powder material. The fresh mortar is applied above the edge and initially levelled off with a trowel. The material is then finished with a round trowel. The side length of the cove should be around 2 – 4 cm. The resulting edges are smoothed with a trowel and any excess material is removed. For a clean transition, the edge areas of the cove are finally smoothed with a slightly moistened brush to equalize the surface with the bonding slurry. For waterproofing purposes all cove areas must be fully covered with one additional layer of Maleki-DS 220.

Observe a rigid connection between the specific substrates during application of coves. Both substrates should be fully cured and free of swelling and shrinkage.

In case of floating or unbonded screeds the cove should only be connected to the ground. Prevent wall connections by installing edge joints. The gap must be filled with a permanently elastic compound.

Post-processing and coating protection

For the use of Maleki-DS 220 as a final coat it is recommended to apply a suitable surface protection system. To achieve a higher abrasion resistance or chemical resistance we recommend a combined application of Maleki-DW 100 and Maleki-LL 100. Please refer to the respective data sheets for more information.

Consumption details

Exposure group	Min. layer thickness [mm]	Consumption [kg/m ²]
Soil moisture & non- pressing water	2.0	approx. 4.0
Pressing water (max. 5.0 bar)	3.0	approx. 6.0

Tools and cleaning

Hand-held mixer, stirrer, brush, trowel and rounded trowel. All equipment should be washed clean and dried before and after application.

Packaging and shelf-life

25 kg paper bag

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

Technical data sheet

TM DS 220_en - Version 2.5
Revision: 21.02.2025

Maleki-DS 220	Item-No. 1314
Maleki-DS 240	Item-No. 1329
Maleki-TG 110	Item-No. 1110
Maleki-DW 100	Item-No. 1815
Maleki-LL 100	Item-No. 1810

Safety notes

There is no mandatory hazard labeling for Maleki-DS 220. 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-DS 220 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:

DIN 18195:2017-07

Waterproofing of buildings – Vocabulary

DIN 18336:2019-09

German construction contract procedures (VOB) – Part C: General technical specifications in construction contracts (ATV) – Waterproofing

DGfM Fact sheet for waterproofing of masonry

DVGW W 300-4 – Technical Rule – Fact sheet

Drinking water tanks; Part 4: Materials, lining and coating systems – Principles and quality management on the construction site

Notes

Because of different properties of the substrates and the environment we cannot guarantee a uniform coloring. The appearance should be tested on a separate location if required. Therefore, this product is not suitable for decorative purposes.

Do not apply Maleki-DS 220 on frozen substrates or in freezing conditions and do not apply during rain. Use structural measures such as expansion joints to prevent formation of cracks in buildings. An appropriate flexible or permanently elastic sealant must be used to waterproof joints. Usually, the waterproofing is carried out on the water-facing side (positive stress). If an internal waterproofing of buildings is required (negative stress) - in particular, for renovation of existing buildings - the building structure must be able to withstand the water pressure.

The selection of a suitable waterproofing depends on the water load, the composition of the ground and the structural design. All these factors should be taken into account before starting work.

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 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.

