

# MorTec DRAIN

## Two-part thin-layer epoxy resin drainage mortar

### DESCRIPTION

MorTec® DRAIN is a thin-layer, two-part epoxy resin drainage mortar for use in combination with AquaDrain® EK surface drainage system for solid bed fixing of natural stone and ceramic coverings on balconies, patios, terraces and roof terraces. For full application advice, please refer to Part A Technical Design Guide or contact the BAL TECHNICAL ADVISORY AND SPECIFICATION SERVICE .

### Product Properties and Benefits

- MorTec® DRAIN reduces the required height construction by at least 25mm compared to cement-based drainage mortar systems. This makes it ideal for renovation work or if necessary construction height it lacking.
- Assists rapid-drainage and speeds of drying of natural stone avoiding water or frost damage.
- Lime-free meaning no efflorescence.
- For lightweight constructions and low door height connections less than 50mm with AquaDrain® EK 8mm sheets and AquaDrain® TM and AquaDrain® FLEX drain grates.

### Minimum thickness of covering:

- Natural Stone: min 20mm
- For larger format ceramics and porcelain: min 10mm.



### PRODUCT INFORMATION

**Composition:** MorTec® DRAIN-EP epoxy resin binder and MorTec® DRAIN-DK 2-3mm kiln-dried and pre-mixed special filter quartz aggregate according to EN 12904.

**Pack sizes:** 1kg and 2kg knead bags with separator 25kg bag.

**Substrate Requirements:** Pressure-resistant; for thermal insulation: EPS 035 DAA dh/XPS), min. 200 k/Pa with roof terrace insulation. Only 120 kPa with a 30mm screed.

**Suitable substrates:** Ground-contact patios, roof terraces, loggias, unsupported cantilevered balconies, outdoor steps. Old ceramic tile coverings / old coatings.

**Fall:** min 1%

**Seal:** All types of sealing can be used, except for bitumen welded sheets. BAL TANK-IT is suitable is not used on roof terrace.

**Height of structure when laid on AquaDrain® EK 8mm sheets:**

From approx. 43mm (tiles), 52mm (natural stone), for larger formats from 60mm (natural stone).

**System Profiles:** ProFin® DP11 with facing plate BL24 or DP30 as the finish. Alternatively ProFin® V22 when roofing membrane is existent

**System Drain Grate:** AquaDrain® TM.

**Rainproof after:** 3 hours.

Drying time: 12 hours.

**Working time:** 40 minutes, lower or higher temperature may lead to longer/shorter times.

**Full loading capacity:** 7 days.

**Working temperature:** min 5°C to max 30°C. Relative humidity MUST NOT exceed 80%.

**Mix:** 1kg part epoxy resin binder to 25kg parts quartz aggregate

## FUNCTION

When installed on the 8mm AquaDrain® EK (sheets) capillary passive drainage systems, drainage performance is significantly increased.

The full system - MorTec® drain on AquaDrain® EK 8mm plate with AquaDrain® TM drain grate -creates a low construction height to connect with low door connections and conforming to DIN 18195 and flat roof directive.

The MorTec® drain system on AquaDrain® drainage meets the demands / recommendations of the German tile and natural stone federation (FFN) "Exterior coverings" and "external stairs" and the German Natural Stone Association (DNV) "1.4 floor-coverings, exterior".

Weight savings of the whole system amounts to over 60% over conventional cementitious screeds.

## Substrates

- Should have a gradient > 1%.
- The minimum slope information may differ with top coats and / or when use requires a higher gradient.
- Must be solid, firm and not resilient or compressible.
- For Slope situations <1.00%. See the BAL TECHNICAL DATA SHEET on AquaDrain® EK.
- For height differences, sealing height of >2mm are not permitted.
- Bitumen is not suitable as a base due to overlapping joints and the low weight per unit area of MorTec® drain system. Please contact the BAL TECHNICAL ADVISORY AND SPECIFICATION SERVICE for further information.
- On waterproofing of balconies / terraces / roof terraces, seals should conform to DIN 18 195 Part 10, e.g. of PE membrane with thickness > 0.2 mm or thermal fleece <150 g / m<sup>2</sup> are required.
- Insulation, on which the drain system for MorTec® is used, should generally have a minimum compressive strength of 120 k/Pa exhibit (see table).

## APPLICATION

### a) Passive capillary surface drainage with AquaDrain® EK 8mm sheets.

1. AquaDrain® EK sheets are laid on suitable substrates with the mesh side up, preferably with the drainage channels pointing in the direction of the main fall.
2. The overlapping mesh covers the joints between the lengths, ensuring that none of the single-grain mortar can enter the drainage channels.

3. Other joint areas are covered and adhered with the self-adhesive AquaDrain® SK joint tape.

4. To join all adjacent construction elements, AquaDrain® EK is to be laid with a 10 mm expansion joint. To ensure freedom of movement of the subsequent covering structure and to protect against the entry of mortar behind/underneath the surface drainage, the AquaDrain® Edge Insulation edge insulation strip with self-adhesive foot is to be applied to AquaDrain® EK. The perforation of the self-adhesive foot ensures permeability, so that seepage water is transferred to the surface drainage.

Further instructions:

While work is being carried out, the drainage mats are to be protected in the areas of transport pathways etc. with planks/walk boards.

For more information please refer to the BAL TECHNICAL DATA SHEET on AquaDrain® EK TDS and Part B – Installation Guide.

### b) Open edge areas

Should be bordered with the ProFin® drain gravel stropps or respective ProFin® DP drain edge profiles. The 2 in 1 edge profile consists of:

1. The base profile, fixed to the substrate and pegged.
2. The push-on facing panels, height variable dependent on surface finishes and mounting heights. At low heights, the ProFin® DP11 base profile plus the BL 24 facing plate is suitable.

### Required thickness of MorTec® DRAIN screed function in according with the type and design of thermal barriers:

Compressive strength of thermal insulation	Layer thickness of MorTec® DRAIN screed		Type of thermal insulation	
	25mm	30mm	Loose	Bonded
120 k/Pa		X		X
200 k/Pa	X			X

### c) Drain Mortar

- The resin components (a) and hardener (b) are present in the mix bag with screw cap. Remove the separation rod and mix the two components vigorously by kneading the bag for 2-3 minutes. Mix until a uniform colour is obtained. Puddles on the sealing layer should not exceed a depth of 4mm.
- Add the premixed epoxy filler to the MorTec® DRAIN aggregate in a mixer and mix for 1-2 mins. Small quantities of up to 25kg can also be mixed in a bucket with a paddle mixer. The finished mixture can now be poured onto the prepared surface for the creation of the screed.
- Use a jig to level the screed right to the top of the ProFin® BL push-on panels

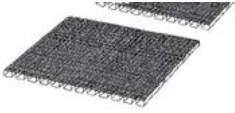

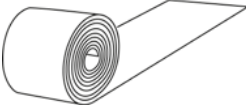
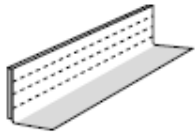



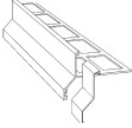






Always drain as much of the mortar mix as you can in the allocated installation time.

- Ensure that expansion joints in the floor surface and rising components are congruent to the upper layer movement joints. Field expansion joints should be installed every 3m. Thicker MorTec® drain layers >30mm, as well as dark and large-format coverings require shorter distances between joints. A safe movement joint between the drainage mat and including the finished coating is also achieved with AquaDrain® Edge insulation strip.
- Sloped screeds of 25-50 mm are also acceptable, such as ramps at up to 6% gradient (from a 3% gradient, a slip guard should be necessary).

**d) (Ceramic, natural cast stone) Laying of floor coverings.**

- Fixing on the floor covering can begin immediately after the screed has hardened. Use a recommended BAL rapid-setting tile adhesive such as BAL RAPIDSET FLEXIBLE FIBRE, BAL RAPIDSET FLEXIBLE or BAL STONE AND TILE PTB. Tiles should be back buttered.
- For best possible water drainage, ensure that the joints are fully free from tile adhesive.

**OPTIONAL SYSTEM COMPONENTS**

<p><b>AquaDrain® EK drainage sheet (8mm)</b></p> 	<p><b>DiProTec® AB-KV sealing tape</b></p> 	<p><b>AquaDrain® SK joint tape</b></p> 	<p><b>AquaDrain® Edge insulation tape</b></p> 
<p><b>AquaDrain® TM drain grates</b></p> 	<p><b>ProRin® BR guttering</b></p> 	<p><b>ProFin® DP edge profile and BL facing plate</b></p> 	<p><b>ProFin® V22/55 drip/drain edge profile</b></p> 
<p><b>BAL Tank-it</b></p> 	<p><b>MorTec® DRAIN</b></p> 	<p><b>BAL Rapidset Flexible Fibre</b></p> 	<p><b>BAL Micromax2 Grout</b></p> 
<p><b>BAL Micromax Sealant</b></p> 	<p><b>MorTec® SOFT silicone sealant</b></p> 	<p><b>N.B</b> Please consult BAL Technical Advisory and Specification Service (TAS) or a member of the BAL specification support team for a full and comprehensive product specification to meet your project requirements.</p>	

## **HEALTH & SAFETY INFORMATION / GOOD PRACTICE ADVICE**

For detailed information and safety guidance, please refer to Product Material Safety Data Sheet [MSDS].

## **TECHNICAL ADVISORY SERVICE**

For free expert guidance on use of this product, or any aspect of tiling, contact the BAL TECHNICAL ADVISORY AND SPECIFICATION SERVICE on Tel: 01782 591120 or 0845 600 1 222 or Fax: 01782 591121.

## **SHELF LIFE**

12 months under normal dry conditions. Protect from frost and damp.

## **6 YEAR GUARANTEE**

Since 1990, GUTJAHR has been the only manufacturer to offer extended warranties for its drainage systems, e.g. 6 years for balconies, patios and outdoor steps with AquaDrain® drainage.

*Contact BAL Marketing Department for full details.*

## **CONDITIONS OF SALE**

Sold subject to the Company's Conditions of Sale. *Available on request.*

*For sales and technical queries, contact:*

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NOTE: BAL reserves the right to update instructions, technical data and other information at any time without notice.

