

# TDM plus

## Trass drainage mortar



Capillary-optimised/passivated trass cement-bound ready-mixed mortar for laying paving stones and concrete or natural stone slabs

- considerable reduction of water absorption compared to conventional drainage mortars
- against rising moisture
- water-permeable
- frost-resistant
- compressive strength:  $\geq 20 \text{ N/mm}^2$
- water-permeability:  $\geq 1000 \text{ l/m}^2/\text{h}$



### APPLICATIONS

- for the production of bound, water-permeable bedding layers for the subsequent laying of slabs and pavers
- suitable for usage categories N1 and N2 in accordance with ZTV Wegebau (Additional Technical Terms of Contract for Road Construction)
- for external use

### PROPERTIES

- special grading curve combined with an optimised binding agent technology enables water-permeable and bonded base courses to be produced with a cavity content of 15-20 %
- with optimised capillary action: considerable reduction of the capillary water absorption compared to conventional drainage mortars
- with original tubag trass
- good workability

### COMPOSITION

- cement in accordance with DIN EN 197-1
- trass in accordance with DIN 51043
- mineral additives according to DIN EN 13139
- additives for regulating and improving workability and product properties

### SUBSTRATE

- |                            |  |
|----------------------------|--|
| <b>Suitable substrates</b> | <ul style="list-style-type: none"><li>■ Base courses made of free-draining concrete or asphalt, crushed stone or gravel base courses</li><li>■ depending on the load according to ZTV Wegebau</li></ul>  |
| <b>Properties/tests</b>    | <ul style="list-style-type: none"><li>■ The substrate must be load-bearing in accordance with the load.</li><li>■ The drainage capacity of the superstructure must be ensured.</li></ul>   |
| <b>Pretreatment</b>        | <ul style="list-style-type: none"><li>■ In case of impermeable substrates, e.g. concrete base courses, an additional drainage level is to be provided (e.g. with a drainage mat suitable for drainage mortar).</li><li>■ The quick-mix MDF flexible sealing slurry, for example, is suitable for waterproofing the concrete base course.</li></ul> |

### PROCESSING

<b>Temperature</b>	<ul style="list-style-type: none"><li>■ Do not process or allow to dry out at air, material or substrate temperatures below +5°C, or if there is a risk of exposure to night frost, or at temperatures above +30°C, or in direct sunlight, or on heated up surfaces, and/or in windy conditions.</li></ul>
<b>Mixing / Preparation / Processing</b>	<ul style="list-style-type: none"><li>■ Mix dry mortar to the right consistency with clean water in a continuous, drum or compulsory mixer.</li><li>■ consistency: earth-moist</li><li>■ Always mix in the full contents of bagged products.</li><li>■ The right consistency is reached when a ball formed from the bedding mortar does not crumble and a slight sheen appears on the surface.</li></ul>
<b>Processing</b>	<ul style="list-style-type: none"><li>■ The bedding mortar must be compacted by approx. 25 % by knocking in the stones or tiles.</li><li>■ With large formats, it may be necessary to pre-compact the mortar, e.g. by pressing on it.</li><li>■ For a good adhesive bond, before setting, a bonding slurry (e.g. tubag TNH-flex or TNH-rapid) should be applied to the back of the stone or slab.</li><li>■ The laying process is done wet-in-wet.</li></ul>
<b>Processing / Working time</b>	<ul style="list-style-type: none"><li>■ Dried out mortar is identified from the fact that the surface turns whitish. In this state the mortar must no longer be processed.</li><li>■ The processing time will be extended at low temperatures and/or high air humidity and shortened at high temperatures and/or low air humidity.</li></ul>
<b>Drying / Hardening</b>	<ul style="list-style-type: none"><li>■ Protect the fresh mortar from drying out too quickly and from unfavourable weather conditions such as frost, draughts, direct sunlight and direct exposure to driving rain if necessary by hanging with foil.</li><li>■ Effective measures are the use of damp geotextiles as a protection against sunshine as well as hanging up a film as a protection against driving rain.</li></ul>
<b>Cleaning the tools</b>	<ul style="list-style-type: none"><li>■ Clean all tools and equipment with water immediately after use.</li></ul>
<b>Notes</b>	<ul style="list-style-type: none"><li>■ In case of very irregular profiling on the back (e.g. polygonal tiles), the tiles can be laid on the skimmed drainage layer with tubag trass mortar for natural stone Vario FX after approx. 3 days.</li><li>■ The joints should remain largely free of mortar.</li><li>■ Hydraulically bonded beddings in usage category N1 must have a layer thickness of at least 6 cm, in usage category N2 at least 10 cm.</li></ul>

### PACKAGING

- 40 kg/bag
- loose in silo

### STORAGE

- Store sacks appropriately and in dry conditions on pallets.

### QUANTITY REQUIRED / YIELD

- consumption: approx. 16 kg/m<sup>2</sup> per cm layer thickness
- yield: app. 24 l fresh mortar per 40 kg/bag
- yield: app. 600 l fresh mortar per t

### TECHNICAL DATA

<b>Water requirement</b>	approx. 2,8 l per 40 kg/bag
<b>Grain</b>	1,5 – 4 mm
<b>Compressive strength</b>	≥ 20 N/mm <sup>2</sup>
<b>Flexural strength</b>	approx. 3.5 N/mm <sup>2</sup>
<b>Water permeability</b>	> 1,000 l/m <sup>2</sup> /h (tested without pressure on a 3 cm-thick mortar board)

All data are average values that were determined under laboratory conditions according to relevant test standards and application tests. Deviations are possible under practical conditions.

### SAFETY AND DISPOSAL INSTRUCTIONS

<b>Safety</b>	<ul style="list-style-type: none"><li>■ This product produces an alkaline reaction when it comes into contact with moisture/water. Therefore ensure that skin and eyes are protected. If it should come into contact with the skin or eyes, rinse them thoroughly with water. See a doctor immediately if it comes into contact with the eyes.</li><li>■ Further information can be found in the safety data sheet at <a href="http://www.tubag.de">www.tubag.de</a>.</li></ul>
<b>GISCODE</b>	<ul style="list-style-type: none"><li>■ ZP1 (products containing cement, low-chromate)</li></ul>
<b>Disposal</b>	<ul style="list-style-type: none"><li>■ Dispose of the material in accordance with the official regulations.</li><li>■ Completely empty and recycle the packaging.</li><li>■ Dispose of hardened product in accordance with the local regulations. Do not allow to enter the sewer system. Dispose of the hardened product in the same way as concrete waste and slurries. Waste code according to the Ordinance on the European Waste Catalogue depending on the origin: 17 01 01 (concrete) or 10 13 14 (concreteste and concrete slurries).</li></ul>

### GENERAL INFORMATION

This information sheet provides only general recommendations. Should you have any queries relating to a specific application, please contact our technical sales advisor or call our hotline: +49 541 601-601. Since natural raw materials are used, the values and properties described may vary somewhat. All of the details given are based on our current knowledge and experience and on the assumption that the materials are professionally applied and used for their normal purpose. All of the details are non-binding and do not release users from their duty to undertake their own tests to ensure suitability for the intended application. Due to the effects of different weather, processing and construction site conditions, no guarantee can be given for the general validity of all details. We reserve the right to make changes as a result of further development of the product and applications engineering. The general rules for construction engineering, the valid standards and guidelines, and the technical working guidelines must be observed. The publication of this technical data sheet renders all previous editions of this data sheet void. Please obtain the latest information from our website.