

# TNM-Vario FX

## Medium-bed trass mortar for natural stone



Patented flexible medium-bed mortar with supporting grain for discoloration-sensitive natural stone slabs

- mortar bed thickness 5 to 35 mm



### APPLICATIONS

- especially suitable for heavy slabs with extremely deep fluting with high inherent weight and for slabs of varying thickness
- and on uneven subsurfaces
- for laying fine stoneware and natural stone pavements susceptible to discolouration according to DIN 18352 and DIN 18332
- for laying limestone slabs (Solnhofen, Jura marble, travertine), quartzite, granite, basalt, porcelain stoneware
- for floor coverings on terraces, balconies, staircases, stair landings, window sills, underfloor heating systems (heated screeds)
- particularly suitable for laying large format coverings
- for interior and external use

### PROPERTIES

- meets the requirements of DIN 18352 and DIN 18332
- high stability due to special supporting grain
- particularly good load-bearing capacity in combed bed
- with original tubag trass, particularly safe from efflorescence and staining on natural stone pavements and ceramic tiles as well as for an optimised hardening process
- mineral
- high bonding strength
- smooth and easy to process
- excellent water retention
- good contact adhesion
- frost-resistant and water-resistant after hardening
- hydraulically curing and hardening
- flexible

### COMPOSITION

- cement in accordance with DIN EN 197-1
- trass in accordance with DIN 51043
- graded stone aggregates in accordance with DIN 13139
- special supporting grain according to EN 13055
- additives for regulating and improving workability and product properties

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### SUBSTRATE

#### Suitable substrates

- Concrete, at least 6 months old
- Lightweight concrete
- Aerated concrete
- Cement and calcium sulphate screeds, heated and unheated

#### Properties/tests

- The substrate must be dry, firm, load-bearing, dimensionally stable, clean and free of adhesion-reducing contamination.
- The requirements of DIN 18560 and DIN EN 13813 are to be observed.
- At the time of laying, cement screeds must have a residual moisture  $\leq 2.0$  CM % (unheated) or  $\leq 1.8$  CM % (heated).
- At the time of laying, calcium sulphate screeds must have a residual moisture  $\leq 0.5$  CM % (unheated) or  $\leq 0.3$  CM % (heated).

#### Pretreatment

- Carefully remove adhesion-reducing layers and contamination, e.g. sinter layers, binding agent accumulations, loose paint coatings, adhesive residue or dust.
- The substrate is to be cleaned beforehand. No residue from cleaning agents must stick on the substrate.
- The substrate must be primed to seal the pores in order to regulate the absorbency.
- Primers must be allowed to dry completely.
- Prime mineral substrates with strasser PRIM DTG-P Dispersion Depth Primer Premium or strasser PRIM UG-P Universal Primer Premium.
- Prime highly absorbent, mineral substrates with strasser PRIM DTG-P Dispersionstiefengrund premium.
- For time-critical work, prime mineral substrates with strasser PRIM DTG-T Dispersionstiefengrund Turbo (can be covered or recoated after approx. 15 minutes).
- Calcium sulphate screeds are to be sanded, vacuumed and pre-treated if necessary with strasser PRIM EG epoxy primer in one layer or with strasser PRIM ESA epoxy-resin protection coat in two layers and sanded off with strasser PLUS GQS coarse silica sand. Once hardened, remove excess, loose sand thoroughly.

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### PROCESSING

<b>Temperature</b>	<ul style="list-style-type: none"><li>■ Can be processed in case of air, material and substrate temperatures between +5°C and +30°C. Do not apply in case of direct sunshine or strong winds.</li></ul>
<b>Mixing / Preparation / Processing</b>	<ul style="list-style-type: none"><li>■ Observe specified amount of water. Use a clean stirring container and clean tap water for stirring.</li><li>■ Mix material homogeneously and without lumps with a suitable agitator, allow to cure for approx. 5 minutes and stir again.</li><li>■ Do not mix with other products and/or other substances.</li></ul>
<b>Processing</b>	<ul style="list-style-type: none"><li>■ Apply the scratch coat to the substrate with the smooth side of the notched trowel. Then comb on the mortar and push the tiles/coverings into the applied mortar bed under pressure and position them.</li><li>■ Once the skin starts to form on the surface of the combed on adhesive bed, no more coverings can be laid.</li></ul>
<b>Processing / Working time</b>	<ul style="list-style-type: none"><li>■ approx. 3 hours</li><li>■ Mortar that has already started to harden must never be thinned down with additional water, remixed or applied.</li><li>■ Timings relate to +23°C and 65% relative 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>■ The installation area can be loaded after 7 to 14 days depending on usage.</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>■ When laying coverings outdoors or on floor surfaces with high traffic loads as well as for large formats (<math>\geq 60</math> cm edge length, <math>\geq 0.25</math> m<sup>2</sup> base area), the buttering-floating method should be used. By applying the adhesive to the substrate and additionally to the back of the covering, an almost void-free installation is ensured.</li><li>■ When laying tiles on heated screeds, DIN EN 1264-4 applies.</li></ul>

### PACKAGING

- 25 kg/sack

### STORAGE

- Store sacks appropriately and in dry conditions on pallets.

### QUANTITY REQUIRED / YIELD

- consumption: approx. 1.3 kg/m<sup>2</sup> per mm layer thickness

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### TECHNICAL DATA

<b>Water requirement</b>	approx. 6.5 l per 25 kg/sack
<b>Grain</b>	0 – 1,5 mm
<b>Compressive strength</b>	≥ 10 N/mm <sup>2</sup>
<b>Adhesive bed thickness</b>	5 - 35 mm
<b>Maturation time</b>	approx. 5 minutes
<b>Adhesive open time</b>	approx. 15 minutes
<b>Walkability</b>	after approx. 24 hours
<b>Grouting</b>	after approx. 24 hours
<b>Resilience</b>	after approx. 7 to 14 days
<b>Colour</b>	light grey, natural white

All data are average values which have been obtained under laboratory conditions in accordance with relevant test standards and application trials at +23°C and 65% relative humidity. 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 (concretewaste 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. 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.