

PFN

Paving grout

Trass cement-bonded paving stone grout mortar for natural and concrete paving

- easy and efficient to use thanks to Easy Clean Technology (ECT)
- impermeable
- compressive strength: $\geq 30 \text{ N/mm}^2$



APPLICATIONS

- suitable for use-category N3 according to ZTV Wegebau (extra technical requirements for road building)
- for surfaces with heavy traffic loads
- for new joints and repair
- for the decorative design of terraces, squares and paths
- auch in der Städtegestaltung und Landschaftsarchitektur

PROPERTIES

- erfüllt die Anforderungen des Merkblattes FGSV MF P geb. 618/2 Pflasterfugenmörtel Typ B
- erfüllt die Anforderungen der ZTV Wegebau
- highly free-flowing
- self-compacting
- polymer-modified
- low shrinkage tendency
- low tension curing thanks to original tubag trass
- single-component
- impermeable after hardening
- good workability
- high frost and de-icing salt-resistance
- suitable for road sweeping machines

COLOURS

- light grey, anthracite, beige

COMPOSITION

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

SUBSTRATE

- Properties/tests**
- In the case of paving the joint depth must be double the joint width, or at least 30 mm for surfaces which will not be subjected to traffic.
 - Terrace surfaces made of ceramic and fine stoneware which are laid using the bonded construction method, are an exception. In this case the minimum joint depth is approx. 20 mm.
 - For surfaces which will be subjected to traffic, the joint depth must be at least two thirds the height of the stone, or at least 40 mm.
 - Required minimum joint width: 5 mm
 - For large format tiles we recommend at least 5 mm or 1 % of the longest tile side as the joint width.
 - Maximum joint width: 25 mm

- Pretreatment**
- The required joint depth should be created by blowing or scoring out the joint. The paving surface should then be cleaned dry.
 - Depending on the absorption behaviour the paving surface should be wetted thoroughly several times. However, there should be no standing water in the joints when applying the paving stone grout mortar.
 - If necessary, apply tubag FHI over the entire surface of the pavement 24 hours before the jointing work to minimise binder residues (for application see TM tubag FHI).

PROCESSING

- Temperature**
- 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.

- Mixing / Preparation / Processing**
- When mixing manually, first place the quantity of water specified in the technical data in a clean container and then sprinkle in dry mortar. Use clean tap water.
 - Use a suitable agitator to mix the material until smooth and free of lumps. Leave to develop for a moment and then mix again.
 - consistency: light free-flowing
 - When machine-processing: Adjust the amount of water accordingly to obtain a workable consistency.
 - Do not mix with other products and/or other substances.

PROCESSING

Processing	<ul style="list-style-type: none"> ■ Grouting is done by slurring with a rubber squeegee. ■ Introduce the grout mortar diagonally to the run of the joints under slight pressure using a rubber squeegee so that the joints are filled completely, densely and deeply. ■ Only the smallest possible amounts may remain on the stone surface, otherwise cleaning the surface becomes more difficult. ■ If the paving units have bevelled edges, the level of the grout after cleaning must be no higher than the bottom edge of the bevel. ■ The paving surface is to be cleaned as soon as the joint surface has hardened. ■ The hardening level is to be tested by pressing one's thumb in. ■ Mortar residue on the stone surface must not start to dry at this stage. ■ Depending on the absorbency, surface design and processing temperature, the paving surface can be cleaned as follows: <ul style="list-style-type: none"> ■ Spraying off: Depending on the absorbency, surface design and processing temperature, the hardening time is approx. 1 to 3 hours. Wash off the paving area clean with a water hose (spray nozzle) and a hard brush diagonally to the joint. Care must be taken that the grout mortar is not washed out of the joint. If the mortar tends to wash out, the required hardening level has not yet been reached. Repeat the washing off process until the residual film has been completely removed. If necessary, remove remaining contamination with a high pressure washer once completely hardened. ■ Washing off: Depending on the absorbency, surface design and processing temperature, the hardening time is approx. 30 to 90 minutes. Wash off the paving area clean with a sponge float diagonally to the joint. Care must be taken that the grout mortar is not washed out of the joint. If the mortar tends to wash out, the required hardening level has not yet been reached. Change the water used for washing regularly. Repeat the washing off process until the residual film has been completely removed. If necessary, remove remaining contamination with a high pressure washer once completely hardened.
Processing / Working time	<ul style="list-style-type: none"> ■ approx. 15 minutes ■ The stated times apply for a temperature of +20°C and relative humidity of 65%. ■ The processing time will be extended at low temperatures and/or high air humidity and shortened at high temperatures and/or low air humidity. ■ Mortar that has already started to harden must never be thinned down with additional water, remixed or applied.
Drying / Hardening	<ul style="list-style-type: none"> ■ 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. ■ The paving surface can be walked on after approx. 3 hours and fully loaded after approx. 28 days. ■ Timings relate to +20°C and 65% relative humidity.
Cleaning the tools	<ul style="list-style-type: none"> ■ Clean all tools and equipment with water immediately after use.
Notes	<ul style="list-style-type: none"> ■ Optically related areas must be prepared with material from the same production batch to prevent colour differences. ■ In order to achieve an optimum appearance, we recommend that you first grout a sample area paved with the type of paving units in question.

PACKAGING

- 25 kg/sack

STORAGE

- Store sacks appropriately and in dry conditions on pallets.
- We recommend that the product be used within 12 months of the date of manufacture.

QUANTITY REQUIRED / YIELD

- yield: app. 16 l fresh mortar per 25 kg/sack
- Depending on the paving stone format, joint depth and joint width, different consumption rates result.

TECHNICAL DATA

Water requirement	approx. 5.5 l per 25 kg/sack
Processing consistency	easy flowing
Grain	0 – 1,25 mm
Compressive strength	≥ 30 N/mm ²
Joint width	5 – 30 mm
Joint depth	≥ 30 mm, exception: terrace coverings of ceramic and porcelain stoneware in bonded construction: ≥ 20 mm
Processing time	approx. 15 minutes
Walkability	after approx. 3 hours
Resilience	after approx. 28 days

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

Safety	<ul style="list-style-type: none"> ■ 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. ■ Further information can be found in the safety data sheet at www.tubag.de.
GISCODE	<ul style="list-style-type: none"> ■ ZP1 (products containing cement, low-chromate)
Disposal	<ul style="list-style-type: none"> ■ Completely empty and recycle the packaging. ■ Dispose of the material in accordance with the official regulations. ■ 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).

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.