

TZM 20

Trass cement mortar



Masonry and bedding mortar for natural stone

Standard masonry mortar M20 acc. EN 998-2
NM IIIa according to DIN 20000-412

- compressive strength: ≥ 20 N/mm²
- high strength for heavy loads



APPLICATIONS

- for laying natural stone slabs, steps and paving stones
- for producing bedding mortar for natural stone slabs and steps, for ceramic tiles
- for producing masonry mortar for all masonry blocks, e.g. bricks, lime sandstones, lightweight concrete stones, pumice stones and natural stones
- for the creation of load-bearing and non-load-bearing masonry
- for external and interior use

PROPERTIES

- meets the requirements of the installation guidelines issued by the German natural stone association (DNV), the industrial association Altmühltaler Kalksteine and the data sheets issued by the Central Association of the German Building Trade (ZDB)
- reduced risk of lime efflorescence
- low-stress hardening characteristics
- high strength for heavy loads
- adjusted water retention properties
- weather and frost resistant after hardening
- mineral
- easy to process
- good adhesion on stone

COMPOSITION

- cement in accordance with DIN EN 197-1
- trass in accordance with DIN 51043
- graded stone aggregates in accordance with DIN 13139
- additives for regulating and improving workability and product properties

SUBSTRATE

Properties/tests	■ Masonry and substrates must be firm, load-bearing, frost-free and free of adhesion-reducing residues.
Pretreatment	<ul style="list-style-type: none">■ Coats of paint and other separating layers are to be removed.■ The stones being laid are to be pre-wet depending on their absorbency.■ When using as a bedding mortar, the substrate must be pre-wetted or pre-treated with slurry.■ The specifications of DIN 18332, DIN 18352 and DIN 20000-412 are to be taken into account.

PROCESSING

Temperature	<ul style="list-style-type: none">■ 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	<ul style="list-style-type: none">■ When machine-processing: Adjust the amount of water accordingly to obtain a workable consistency.■ Using a flow mixer, gravity mixer or compulsory mixer, mix the dry mortar with clean water for no longer than 2 to 3 minutes to achieve the correct consistency.■ 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 rest for a moment and then mix again, adding more water, if required, to achieve the right consistency for applying.■ Do not mix with other products and/or other substances.
Processing	<ul style="list-style-type: none">■ Apply the desired layer thickness of mortar to the masonry using a trowel. Set the masonry units in place and scrape off any protruding mortar. Ensure full and flush-jointing of the units. All mortar pockets must be filled.■ In the case of visible masonry, allow joints to stiffen and smooth with a jointing iron, hose or something similar. Then clean the masonry immediately.■ When using as a bedding mortar, apply tubag TNH-flex trass bonding slurry for natural stone to the back of the covering. The laying process is done wet-in-wet over the whole area.■ Only close the joints once the bedding mortar has dried out.
Processing / Working time	<ul style="list-style-type: none">■ Approx. 2 to 3 hours■ Mortar that has already started to harden must never be thinned down with additional water, remixed or applied.■ The stated times apply for a temperature of +20°C and relative humidity of 65%.
Drying / Hardening	<ul style="list-style-type: none">■ The fresh masonry work must be protected from unfavourable weather conditions such as very high and very low temperatures, frost, draughts, direct sunlight and driving rain (by covering with a plastic sheet, for example).
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">■ Trass-based mortars reduce the risk of lime efflorescence and prevent capillary water transport due to their density. Trass-based mortars harden slower to match the job. That makes it easier to relieve uneven tensions as desired and helps to prevent joints that are too hard, which are undesirable particularly with natural stone masonry and stonemasonry work.

PACKAGING

- 25 kg/sack
- loose in silo

STORAGE

- Store sacks appropriately and in dry conditions on pallets.

QUANTITY REQUIRED / YIELD

- consumption: approx. 33.5 kg/m² for 2 thin format blocks
- yield: app. 16 l fresh mortar per 25 kg/sack
- yield: app. 640 l fresh mortar per t

TECHNICAL DATA

Product type	Standard masonry mortar
Compressive strength class	M20 according to DIN EN 998-2
Mortar group	NM IIIa according to DIN 20000-412
Grain	0 – 4 mm
Water requirement	approx. 4.0 l per 25 kg/sack
Bond strength / Adhesive shear strength	≥ 0.12 N/mm ²
Chloride content	≤ 0.1 % by weight
Fire behaviour	A1 (non-flammable) in accordance with EN 13501
Water vapour permeability μ	15/35 (table value EN 1745)
Thermal conductivity $\lambda_{10,dry,mat.}$ for P=50%	≤ 0.82 W/(mK) (table value EN 1745)
Thermal conductivity $\lambda_{10,dry,mat.}$ for P=90%	≤ 0.89 W/(mK) (table value EN 1745)
Durability (frost resistance)	On the basis of available experience, suitable for highly aggressive environments in accordance with EN 998-2 Annex B

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 (concreteste 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.