

MARBOS Stone grouting

PFM – ZE - C

Water-impermeable, quickly walkable, trass-modified joint mortar for pavement and slab coverings.
Ergonomic and efficient processing through Comfort Clean System.
For light to medium traffic load.



Application areas:



For jointing old or new paving in outdoor areas.
For jointing of paved surfaces exposed to light to heavy loads.
For natural and concrete pavements, gutters, natural and concrete stone slabs and polygonal slabs.

Suitable for load classes up to Bk 3.2 according to RStO 12 when using suitable concrete blocks, clinkers and sharp-edged slabs of natural stone (sediments).

Suitable for use category N1 to N3 according to ZTV Wegebau.

N1: Walkable surface pavements not intended for motor vehicles and comparable uses outside areas of road traffic (e.g. terraces, garden paths, paths in home garden areas, seating areas in parks).

N2: Pavements for vehicles up to 3.5 t permissible total weight outside of road traffic areas (e.g. garage driveways, carports, parking spaces, paths in green areas). Note: not suitable for vehicles with high point loads, e.g. industrial trucks, forklifts, lift trucks, lifting platforms.

N3: Trafficable surface pavements like load category 2, but with occasional traffic of vehicles up to 20 t permissible total weight with wheel loads ≤ 5 t outside of road traffic areas (e.g. care, maintenance and rescue routes as well as fire department, garage and building access roads). Joint mortar type B according to M FP geb 618/2 of the Forschungsgesellschaft Straße- und Verkehrswesen.

For joint widths from 3 mm.

- For indoors and outdoors

Properties:

- Water Fast hardening
- Self-compacting
- Quickly walkable
- High frost/de-icing salt resistance
- Highly flowable and slurryable
- Flexibilized
- Machinable
- Easy cleaning due to Comfort-Clean-System CCS

Material basis:

- Special cement
- Selected fillers and standardized aggregates
- Additives to improve the processing properties

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Technical Data:	Color	gray, dark gray, anthracite, sand
	Aggregate size	1 mm
	Joint width	3 to 30 mm
	Joint depth	> 3 cm* For traffic, jointing at full height of the stone.
	Processing temperature	+ 5 °C to + 30 °C
	Temperature resistance	– 20 °C to + 80 °C
	Water consumption per 25 kg container	ca. 4 Liter
	Mixing time	ca. 2 minutes
	Maturing time	ca. 2 minutes
	Processing time	ca. 30 minutes
	Walkability	after ca. 3 hours
	Resilient	after ca. 7 days
	Adhesive tensile strength on concrete substrate	ca. 2,2 N/mm ²
	E-module, stat.	ca. 16.400 N/mm ²
	Frost-de-icing salt resistance according to CDF	Weathering 0,246 kg/m ²
	Compressive strength after 24 hours after 7 days after 28 days	ca. 12 N/mm ² ca. 21 N/mm ² ≥ 30 N/mm ²
	Bending tensile strength after 24 hours after 7 days after 28 days	ca. 2 N/mm ² ca. 4 N/mm ² ca. 6 N/mm ²

* In the case of a deformation-resistant mortar bed and a firm bond with the stone or plate as well as foot traffic, the joint depth can also be less, but must not undercut 15 mm.

Substrate preparation:

The substrate must be load-bearing and permanently drainable to withstand the expected traffic loads.
The expected loads must be absorbed. Sagging of the pavement under load will lead to cracking.
To prevent separation layers and to ensure optimum adhesion of the paving joint mortar to the stone flanks, only paving stones that are clean on all sides are to be used.
An inadequately water-permeable superstructure accumulates the water and leads to disturbances in the setting behavior, as well as to damage of the joints when exposed to frost.
Permanent is the laying in our water-permeable bedding mortar with bonding agent. Increased cracking may occur with unbound bedding.
When used on surfaces subject to traffic, joint filling is required at full joint height.

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Substrate preparation:	<p>Pre-wet the surface to be jointed thoroughly and, if necessary, several times.</p> <p>An appropriately dimensioned flex strip must be attached to vertical components to avoid residual stresses. Movement joints from the substructure must be transferred to the superstructure.</p> <p>Depending on the size and geometry of the surface, movement joints must be provided.</p>
Working:	<p>In a clean mixing vessel, mix thoroughly and lump-free with the specified amount of clean tap water. A stirrer with ca. 600 RPM is recommended. The specified mixing and maturing time must be observed.</p> <p>The paving joint mortar can be processed, after instruction, with the mixing pumps Knauf PFT G4 and Knauf PFT Ritmo L.</p> <p>Spread the compound on the pre-wetted surface and apply to the joints with a rubber wiper or similar without air pockets.</p> <p>While setting, keep the surface damp with spray mist.</p> <p>After the material has set (material in the joint can no longer be pressed in with a finger), the surface is wetted, pre-washed with a hard broom (scrubber) and intensively rewashed after a waiting time of ca. 10 minutes. High temperatures reduce the indicated times, low temperatures extend them.</p>
Post-treatment:	<p>Appropriate post-treatment of the hardened mortar ensures flawless hardening. After cleaning, remove any water remaining on the surface to prevent staining from drying cleaning water.</p>
Material consumption:	Consumption see table
Lieferform:	<ul style="list-style-type: none"> • 25 kg paper bag - 42 pieces per pallet
Storage:	<ul style="list-style-type: none"> • Protected from weather, cool and dry on wooden racks. Seal opened containers immediately. • Unopened containers if stored properly 12 months from date of manufacture. • Low chromate according to directive No. 1907/2006 (REACH) – GHS CODE ZP 1.
Waste management:	<p>Hardened product remainders to be wasted as common rubble under code no. 17 09 04.</p>
Cleaning:	<p>Depending on the stone condition, a veil may remain after jointing. This can be removed with a suitable cement veil remover (e. g. LITHOFIN MN Zementschleier- und Rostentferner). Please check the compatibility before use, the specifications of the product manufacturer's must be observed.</p> <p>To reduce adhesion on the surface of the covering, we recommend pre-treating the surface to be jointed with an impregnation/grouting aid (e.g. LITHOFIN Basic Protection).</p> <p>The respective technical data sheets must be observed.</p> <p>Immediately clean containers, tools, etc. with water. Cleaning is only possible by mechanical means once the product has hardened.</p>
Safety note:	<ul style="list-style-type: none"> • Keep out of the reach of children. • Additional information: see safety data sheet.
Note:	<ul style="list-style-type: none"> • The technical data relates to +20 °C and 50 % rel. humidity. Lower temperatures extend the specified values, higher temperatures shorten them.

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Note:

- While the product is setting, protect it against direct sunshine, draughts, frost, driving rain as well as too high (> 30 °C) and too low (< 5 °C) temperatures.
- Do not dilute material that is already setting by means of water.
- Differences in color shade may occur, e.g. due to different moisture levels in places from substructures and joint mortar or the environment. We are unable to provide any warranty for such or similar color deviations in the created joint network
- Paving joint mortars are made from natural raw materials which are subject to natural color variations. Therefore, color differences between different containers do not constitute a reason for objection.
- Only use material from one batch on contiguous surfaces.
- In the case of chamfered paving, the joint may only be filled to the lower edge of the chamfer.
- The instructions of the covering manufacturers must be observed, in particular the installation and maintenance instructions.
- Check compatibility with light-colored stones and with artificial stones (cement- or plastic-bonded) or surface-treated stones!
- For the work to be performed, the relevant recommendations, guidelines, standard and regulations, as well as the generally accepted rules of technology must be observed.
- We recommend in particular to observe the following regulations: **DIN 18318 VOB – Part C: (ATV) – Paved surfaces and plates, edgings, ZTV-Wegebau** "Additional technical contract conditions for the construction of paths and squares outside road traffic areas"
- In case of doubt, create test surfaces.

Quality Control:

Subject to continuous internal and external monitoring.
Production and WPK are certified according to DIN EN ISO 9001.

Consumption overview: ca.- data for a joint depth of 3 cm

Format [cm]	Joint width [mm]	Consumption [kg/m ²]	Joint width [mm]	Consumption [kg/m ²]
8 – 9	3	ca. 3,6	10	ca. 11,1
10 – 11	3	ca. 2,9	10	ca. 9,2
10 – 20	3	ca. 2,3	10	ca. 7,3
14 – 17	3	ca. 2,0	10	ca. 6,4
30 – 30	3	ca. 1,0	10	ca. 3,4
40 – 40	3	ca. 0,8	10	ca. 2,6
60 – 60	3	ca. 0,5	10	ca. 1,7
80 – 40	3	ca. 0,6	10	ca. 1,9

The consumption values are approximate values that have been calculated on the basis of our experience. Depending on processing and surface condition, the actual material requirement may deviate.

During execution of work the relevant recommendations and guidelines, rules and standards, relevant technical instruction leaflets as well as the acknowledged rules of architecture and engineering have to be regarded. We do not have any influence on different weather/substrate and object conditions. Our written and spoken application/technological recommendations handed out to customers and craftsmen respectively are without obligation and do not constitute any contractual legal relationship and no lateral duty of a sales contract. All indications and recommendations of technical data sheets refer to standard purpose of use. With the publication of this technical instruction sheet, the previous ones lose their validity. This is a translation. Please refer in any case of misunderstanding the relevant German technical data sheet. Ed. 17.02.2023