TECHNICAL DATA SHEET

MARBOPOX EP bedding mortar EP-D

Water-permeable, fast hardening epoxy resin drainage mortar according to DIN EN 13813
SR-C20-F7- B1,5

Application areas:

For bedding natural stone pavers and concrete blocks (old or new pavers) as well as plates in indoor and outdoor areas.
For thin-layer structure.
For quick repairs, wherever a fast, drainable mortar is required due to process/time constraints.

Surface reinforcements up to use category N 2 in accordance with ZTV-Wegebau
N1: Walkable, surfaces pavements not intended for motor vehicles and comparable uses outside of road traffic areas (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 entrances, car parking spaces, paths in green areas). Note: not suitable for vehicles with high point loads, e.g. industrial trucks, forklifts, lift trucks, lifting platforms.

- For floor
- For indoors and outdoors

Properties:

- Synthetic resin bonded
- Solvent-free
- Very good adhesion to the substrate
- Low layer thicknesses
- Drainable
- Hardens without shrinkage
- High early and final strength
- High frost/ de-icing salt resistance
- Discoloration-inhibiting
- Ageing and volume resistant
- Resistant to water, seawater and wastewater as well as numerous
- alkalis, diluted acids, salt solutions
- Resistant to mineral oils, lubricants and fuels as well as many solvents

Material basis:

- Epoxy resin, quartz sand

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Ein Unternehmen der Knauf-Gruppe

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Technical data:	Aggregate size	0,6 to 3,2 mm
	Mixing ratio	1 kg Epoxy resin* - 25 kg Multi Drain GranulationDK
	Processing temperature	+8°C to +30°C
	Processing time	ca. 60 minutes
	Layer thickness as screed	See table
	Layer thickness compacted (ca. 1 cm slump/ from 7 cm multi-layer with intermediate compaction)	5 cm - For traffic, apply a bonded base course. 10 cm - For traffic and unbound base course (according to ZTV-Weggebau, agree separately)
	Walkable	after ca. 8 hours
	Ready for laying as screed	after ca. 8 hours
	Compressive strength	≥. 20 N/mm²
	Bending tensile strength	≥ 7 N/mm²
	Through-hardened	after ca. 7 days
	Adhesion bridge to be used	Pavement binder PFB GaLaVarioFlex GVF MARBOPOX GM3
	Water permeability value	ca. 540 x 10^{-6} m/s
	E-module (dynamic)	ca. 10,4 GPa
	E-module (stat.)	ca. 10,5 GPa

Substrate preparation:

When laying in a solid bond, substrates must be solid and load-bearing. Loose, friable or separating layers as well as separating substances such as oil, grease, rubber abrasion, paint residues or similar must be removed by suitable measures such as blasting, if necessary.
Drainage of the superstructure must be ensured.
The superstructure must correspond to the expected loads.
For traffic loads, the requirements of ZTV Wegebau must be observed.
The drainage of the superstructure must be ensured and secured against rising damp.
If the base layer is dense (e.g. concrete), additional drainage (drainage mats with mesh lamination, e.g. Gutjahr AquaDrain® EK) is required with sealing underneath the bedding.
As a primer, the epoxy resin is applied without the addition of filling materials. In other respects, the DBV data sheet "Application of reactive resins in concrete construction, Part 2: Substrates" applies.
An appropriately dimensioned flex strip must be attached to vertical components in order to avoid internal stresses. Movement joints from the substructure must be transferred to the superstructure. Depending on the size and geometry of the surface, movement joints must be included.

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Working:	Pour the hardener (component B) into the resin (component A) and make sure, that the hardener component runs out completely. Then mix the total mixture very thoroughly with a mechanical stirrer at a maximum of 300 rpm. It is essential to stir thoroughly from the bottom and sides so that the hardener is also distributed vertically. Stir until the mixture is homogeneous (ca. 5 minutes). After mixing, pour 25 kg of Multi Drain Granulation DK into a clean vessel, add the binder and stir again thoroughly. Apply the bedding mortar manually. The drainage mortar can be applied wet-on-wet as long as the primer is still adhesive. If longer waiting times cannot be avoided, the fresh primer must be sprinkled with quartz sand QS 0.2 to 0.7 mm to ensure adequate clamping of the mortar layer. Unbound sprinkling material must be completely removed by vacuuming after the primer has hardened. The primed surface must be protected against impurities. For dimensionally accurate paving, the desired layer thickness can be adjusted with pull-off gauges. The fresh drainage mortar must be pre-compacted in the case of slabs. in the case of stones, compaction is achieved by hammer-setting. Calculate a slump of ca. 1 cm. In all cases, one of the adhesion promoters mentioned (see Technical Data) must be used for bonding between the covering element and the bedding. For thickening, Stellmittel 222 may be added. Mixed mortar must be applied within the specified working time. When used as a bonded screed, prime the substrate with epoxy resin. The ready-mixed screed mortar is then spread fresh in fresh, compacted and levelled with a straightedge. The surface is then smoothed with a smoothing trowel. Protect against moisture and dirt until jointing. **Note for heated floor constructions:** ore laying the covering, the functional heating of heated floor constructions is used to check their functionality. The heating engineer can thus prove that his work is free of defects. Since epoxy resin screeds do not have to dry, heating up in the sense of heating for covering is not necessary. Nevertheless, the heating screed must be thermally loaded as follows before covering (following the interface coordination for heated floor constructions of the Bundesverband Flächenheizung e.V.) in order to relieve stresses: Heating up to 25 °C can be done after 2 days. Hold this preliminary temperature for 3 days, then increase it to the maximum preliminary temperature of 45 °C, hold it for another 3 days and then heat down to room temperature in 10 °C steps.
Cleaning:	It is recommended to clean the working equipment with suitable solvents after completion and also during processing from time to time.
Material consumption:	• Ca. 16 kg/m²/cm layer thickness
Yield:	• 26 kg MARBOPOX EP Bedding mortar EP-D yields ca. 16 liters fresh mortar
Packaging:	• 1 kg can MARBOPOX GM3 * • 25 kg sack Multi Drain granulation DK

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Storage:	• Cool and dry • Unopened containers, if stored properly, at least 24 months from date of manufacture. • Process opened can immediately
Waste management:	Hardened product residues, i.e. after mixing with the corresponding amount of A-component/B-component: Commercial waste (observe local regulations). For non-hardened product residues: waste code 08 04 09. Component A Giscode RE 1 and Component B Giscode RE 1.
Safety note:	• Contains epoxy-containing compounds - Observe safety data sheet. • The safety instructions on the container must be read and observed before use • Observe possible employment restrictions in accordance with the maternity protection guideline directive or the youth employment protection law as well as accident prevention regulations and information from the employers' liability insurance associations. BG Chemie: BG Rule 227 " Working with epoxy resins" Employer's liability insurance association for the construction industry "Practical guide for working with epoxy resins". • For the safe handling of epoxy resins and hardeners, we generally recommend observing the following data sheets: BG Rule BGR 227, Activities involving epoxy resins (published by the Workers' Compensation Board of the Chemical Industry). Furthermore, the essential physical, safety-related, toxicological and ecotoxicological data can be found in the specific safety data sheets. • In non-hardened state, the components must not penetrate into the sewage system, waters or soil. • May cause sensitization by skin contact. • Harmful to aquatic organisms, may cause long-term adverse effects in waters. • Irritating to eyes and skin. • Wear suitable protective gloves and clothing • Keep out of the reach of children • For professional users only • Additional information: see safety data sheet
Note:	• The technical data refer to +20 °C and 50 % relative humidity. Low temperatures delay the chemical reactions; this extends the processing, recoatability, walkability and full hardening times. At the same time, the higher viscosity increases consumption. High temperatures accelerate the chemical reactions, so that the above times are shortened accordingly. • For complete hardening of the reaction plastic, the average temperature of the substrate must be above the specified minimum temperature. • When processing reactive plastics, in addition to the ambient temperature, the temperature of the substrate is of particular importance. • When exposed to UV radiation, a certain color change and chalking must generally be expected for epoxy resins • For the work to be performed, the relevant recommendations, guidelines, standards and regulations as well as the generally accepted rules of technology must be observed.

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Note:

- For the application of screeds, DIN 18560 and DIN 18353 as well as the other relevant standards, guidelines and accepted rules of technology apply, as far as this technical data sheet does not contain any other specifications
- ** Due to the low screed thicknesses, this is a special construction, which must be agreed separately and in writing with the client.
- For traffic loads, the requirements of the RStO must be observed.
- In cases of doubt, create trial areas.

Layer thicknesses DIN 18560 examples		Perpendicular payloads		Compressibility of the insulation layer [mm]	Nominal screed thickness or pipe overlap		
		Single load [kN]	Area loads [kN/m²]		[mm]	Insulation Thickness ≤ 40 mm	As special construction **
On insulation layer	Living spaces		≤ 2 ≤ 2	≤ 5 ≤ 2	≥ 35 -	≥ 30 -	- ≥ 25 mm(1)
	Office spaces	≤ 2	≤ 3	≤ 5	≥ 50	≥ 45	-
	Meeting rooms	≤ 3	≤ 4	≤ 3	≥ 55	≥ 50	-
	Exhibition rooms	≤ 4	≤ 5	≤ 3	≥ 65	≥ 55	-
Separation layer	Living spaces	≤ 1	≤ 2	-	≥ 30	-	≥ 25 mm(1)
	Office spaces	≤ 2	≤ 3	-	≥ 35	-	-
	Meeting rooms	≤ 3	≤ 4	-	≥ 40	-	-
	Exhibition rooms	≤ 4	≤ 5	-	≥ 45	-	-
Bonded screed		Depending on substructure		-	≥ 15	-	-
On drainage web		Depending on substructure		-	≥ 25	-	-
According to ZTV Wegebau at N1				-	≥ 60	-	-
According to ZTV-Wegebau for N2 on unbound base course				-	≥ 100	-	-

For layer thicknesses > 70 mm, intermediate compaction is necessary.

(1) Maximum field size 25 m² or 5 m edge length.

For heated floor constructions, a pipe cover of at least 30 mm must be maintained.

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