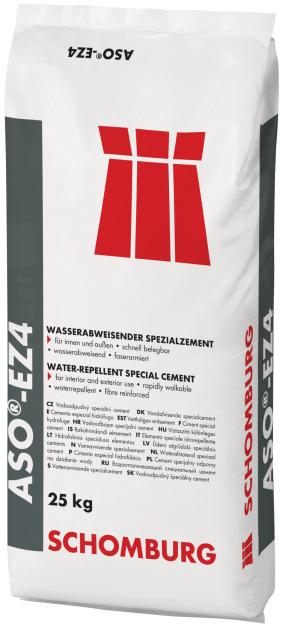
ASO®-EZ4

Binder for water-repellent, accelerated cement-based screeds



Material number	Contents	Unit of quantity	Packaging	Colour
205527001	25	KG	Bag	Cement grey

Product features

- Cementitious binder
- Water-repellent
- Quality up to CT-C50-F6-A9 in accordance with DIN EN 13813
- Rapid setting

Advantages

- Increased safety thanks to water-repellent properties
- rapid construction progress
- No efflorescence

Areas of application

- As binders for creating water-repellent cement-based screeds
- As binders for creating accelerated screeds
- As binders for creating drainage and single grain screeds
- For damp, wet areas, swimming pools and balconies, terraces
- Heated and unheated design
- For interior and exterior use

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Technical Data

Material properties

Base material	Special cement, additives
Consistency	Powdered
Heating, screed after	after 3 days
Strengths	A strength greater than C35– F5 is achieved at a mix ratio of 1: 4 parts by weight, using aggregate in accordance with DIN 4226 and a grading curve between A8 and B8 close to B8.

Mixing

Mix ratio, component A	1 weight proportion
Mix ratio, aggregate	from 4 weight proportion to 5 weight proportion
Mixing time	approx. 4 - 6 minutes
Water addition	from 8.25 l to 10 l

Application

Substrate temperature	from 5 °C to 25 °C
Mixing method, machines, tools	Forced paddle mixer
Foot traffic after	approx. 6 hours
Ready for covering with tiles	approx. 3 days
Pot life (drainage mortar)	approx. 20 - 40 minutes
Pot life	approx. 40 - 60 minutes
Application temperature	from 5 °C to 25 °C
Hardening time / full resilience	approx. 7 days

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Material consumption

Material consumption rate according to the area of application

approx. consumption, kg/m²		
Mix ratio, parts by weight		
Screed thickness, cm	1: 4**)	1: 5**)
1	4.1	3.4
4	16.3	13.6
5	20.4	17.0
6	24.4	20.4
**) 1 : 4 parts by weight, equates to approx. 1 : 2.7 parts by volume, 1: 5 parts by weight, equates to approx. 1 : 3.3 parts by volume		

Minimum nominal thickness in accordance with DIN 18560

Minimum nominal thickness per DIN 18560	
under tiles	45 mm on insulation or separating layer
under parquet, carpet, linoleum or PVC	35 mm on insulation or separating layer
general	10 mm bonded

Application technology

Machine application

ASO®-EZ4 can be mechanically applied. For precise information, see the additional Technical Information No. 43.

Suitable covering

- Ceramic tiles and boards
- Natural stone facings
- Artificial stone coverings

Substrate preparation

Measures for substrate preparation

The substrate must correspond to the payloads associated with the load-bearing capacities in accordance with DIN EN1991-1-1.

Usage

Application

1. Observe the water addition and avoid excess water!
2. Mixing, application, and processing must be completed in immediate sequence.
3. The dimensions of surfaces must be such that the application can be completed within this pot life.
4. Higher temperatures shorten the pot life. Lower temperatures increase the application and hardening times.
5. With bonded screeds, first brush ASOCRET-HB-FLEX into the prepared, e.g. abraded concrete substrate.
6. Apply the screed to the wet slurry coat. The relevant guidelines for cement-based screeds according to DIN18560 and DIN 18353 apply for processing.

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Mixing recommendations for mixing and conveying machines

1. In conventional mixing and conveying machines with a 220 l mixing vessel, e.g. Estrich-Boy from Brinkmann, a total 200kg of aggregate is mixed with 50 kg ASO®-EZ4. This equates to a mixing vessel level of approx. 80% - as recommended by the machine manufacturers in general.
2. Half-fill the mixing drum with aggregate with a grain size 0/8 (approx. 15 scoops of 7 kg each), add approx. 5–6 l water and 50 kg ASO®-EZ4. Mix for approx. 2 minutes for a plastic consistency.
3. Add the remaining aggregate to the mixing drum and then the remaining water.
4. Depending on the aggregate moisture, a total of approx. 10-20 l water is required. The latter value relates to dry aggregate. In general, aggregate with a grain of 0–8 has a moisture content of approx. 4%, therefore 8 l of water is already contained in 200 kg of aggregate but the quantities do fluctuate.
5. It is imperative to comply with the total mixing time of 4 minutes, as all components are only decomposed after this time and the final consistency is formed.

Mixing recommendation for mortar

1. Mix ASO-EZ4 at a mix ratio: 1: 3 parts by volume (equates to approx. 1: 4.5 parts by weight) with aggregate (Ø 0–4 mm) in a suitable forced paddle mixer.
2. The mixing time is at least 4 minutes!
3. Protect the fresh screed to prevent it drying out too rapidly (e.g. due to heat or draughts).
4. Tiles are ready for laying after 3 days if the following prerequisites are met: * Mix ratio of 1:4 parts by weight * Dry aggregate (DIN 4226; grading curve A8 - B8 close to B8; constant grading) * Water addition of 17 litres on 50 kg ASO-EZ4 * Ambient and substrate temperature: +23 °C * Relative humidity of 50% * Layer thickness of 5 cm
5. A moisture measurement must be carried out using the CM method to check the moisture content. In the case of screeds that are required to satisfy a certain screed quality in accordance with DINEN13813, a performance test is necessary. This must be performed before starting the work.

Mixing drainage mortar

1. Fill ASO-EZ4 and the aggregate into a suitable screed mixer at a mix ratio of 1:1 parts by volume.
2. Add water and mix for 4 to 5 minutes depending on the screed mixer, until a viscous mortar is achieved.
3. Add the remaining 2 parts by volume of aggregate and mix until a homogeneous, semi-dry consistency is reached. The consistency is correct once the mortar falls apart again after rolling it into a ball. Drainage mortar that has been mixed too damp loses its drainage capability, as the voids between the grains are closed with binder paste!
4. Lay natural stone, concrete or ceramic boards properly in the drainage mortar.

Instructions for mixing drainage mortar

1. ASO-EZ4 is mixed at a ratio of: 1:3 parts by volume (equates to approx. 1: 4 parts by weight) with the aggregate (without fine grain parts) in a suitable screed mixer. Double-crushed chips with grain sizes of ø 2/5 mm, ø 5/8 mm, ø 8/12 mm, or pea shingle with ø 4/8 mm are used as the aggregate. Choose the aggregate based on the required mortar bed thickness and availability.
2. The water addition must be varied based on the aggregate moisture. When using dry aggregates, approx. 30–36 weight % of water are required based on the ASO-EZ4 addition. Example: 7.5–9 l of water per 25 kg of ASO-EZ4. The low water requirements of the aggregates used result in very low w/c ratios. The pot life reduces to around 20–40 minutes when producing drainage mortar. Only add water to the fresh mortar until a semi-dry consistency is reached.
3. The minimum thickness for the mortar bed must be predetermined to the expected payloads depending on the aggregate used and the overall structure. Ensure that the foundation has sufficient drainage.

Drainage screed on a separating layer on load-bearing concrete slabs

1. Apply a drainage mat to the waterproofed and bearing substrate.
2. Insert the drainage mortar with a semi-dry consistency and compact slightly. Insert the edge profiles and strike off to the intended height level. Minimum film thickness: 5 cm but at least 5 times the largest grain used. Ensure that the drainage layer has sufficient drainage! Adequate falls (at least 1 - 2%) must be provided in the application substrate and on the covering surface.
3. Insert the boards that have been coated with ASOCRET-HB-FLEX on the rear into the freshly applied mortar bed and tap them in.
4. Grout with CRISTALLFUGE-PLUS, CRISTALLFUGE-FLEX or CRISTALLFUGE-HF after at least 3 days depending on the covering.

Laying tiles and boards on hardened drainage screed

1. Lay the natural stone or ceramic covering in the thin or medium bed on the drainage screed that has been scraped off to the intended height level, rubbed down slightly, smoothed and hardened. Apply with CRISTALLIT-FLEX, CRISTALLIT-MULTI-FLEX or LIGHTFLEX, which must all be hardened with UNIFLEX-F.
2. After the thin/medium mortar bed has hardened, grout with CRISTALLFUGE-PLUS, CRISTALLFUGE-FLEX or CRISTALLFUGE-HF.

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Cleaning tools

Clean tools thoroughly with water after use.

Storage conditions

Storage

Store in a cool and dry place. Min. 12 months in the original canister. Promptly use opened canister.

Disposal

Product leftovers can be disposed of in accordance with disposal code AVV 17 01 01.

Notes

- All values given in the TM apply at +23 °C and 50% relative humidity.
- Do not add any additives and substances!
- Observe the technical data sheets of the products mentioned before starting work.
- A moisture measurement must be carried out using the CM method to assess whether it is ready to receive.
- Low temperatures, high humidity and heavy layer thicknesses delay hardening, drying and extend the time until ready to receive tiles. (Also see the BEB data sheet "Building climate preconditions for drying screeds"). Tests showed that the crystalline binding of the mixing water is slower at low temperatures (+5 to +10 °C), meaning that the screed was only ready to receive tiles after a longer period of time!
- Water that is pressed out of the surface of the screed indicates excessive water or aggregate addition (more than 3.3:1 volume parts, equates to approx. 5:1 parts by weight), an incorrect grading curve or inadequate mixing. A consequence of this will be a crumbling surface!
- The quality of the aggregate used partly affects the properties of the screed produced. The aggregate must not contain any harmful and staining components. Aggregate in accordance with DIN 4226 should be used with a constant grading curve between A and B (close to B) according to DIN 1045. If aggregates with other grain distributions are used, a greater quantity of binder may be required. Aggregates with a grading curve between B and C according to DIN 1045 require a higher proportion of ASO®-EZ4. The grain size distributions that should be used with different layer thicknesses are available in the "Layer thickness in accordance with grading curve" table.
- If the surface of the screed cannot be closed sufficiently when rubbed, this indicates that the proportion of fines in the aggregate is too low. A higher quantity of ASO®-SEB is required to replace the missing proportion of fine grain!
- The installation location must be ventilated. However, draughts and direct solar radiation should be avoided during application and the hardening process. The indoor temperature and floor temperature must be at least +5 °C during application, and during the following week! Air dehumidifiers may not be used during the first 3 days!
- If the selected mixing time is too short or mixing is not sufficiently intense, this is not guaranteed to disperse all constituents sufficiently. The screed will not be ready to receive tiles and boards quickly, and it will no longer exhibit a high strength!
- Border, field, structural movement joints and movement joints should be carried over to or installed at the designated location; suitable means, e.g. edge strips, should be used to detach them! Crack control joints should be cut in up to a third of the introduced layer thickness!
- Instead of ASOCRET-HB-FLEX, bonding slurry made of ASOPLAST-MZ at a ratio of 1: 1-2 can be diluted with water and screed mortar made of 1 RT ASO®-EZ4 and 2 RT aggregate Ø 0–4 mm can be used!
- We recommend the ASO®-EZ4-PLUS pre-blended dry mortar to lay tiles, boards and pool edging stones in a thick layer.
- If more water is added than required to achieve the stiff or stiff plastic consistency, the excess water cannot be bound and must evaporate. The screed will then be ready to receive tiles later!
- ASO®-EZ4 already contains fibres. If additional fibres are added, this can cause the screed to be ready to receive tiles later!
- For use in areas with inadequate aggregate quality or where storage of the mortar components is not possible or desirable, the ASO®-SEM / ASO®-EZ4-PLUS pre-blended dry mortars are available!
- If moisture rises from the substrate, effective waterproofing is essential prior to laying the screed! This does not apply in conjunction with coatings in the drainage mortar on an unbound cementitious base layer.

Planning, inspection of substrates and building site circumstances, laying, grouting and subsequent care of the work must be done in accordance with the relevant DIN standards and recognised rules of technology (e.g. the ZDB sheets of the Zentralverband Deutsches Baugewerbe e.V.) in the latest version.

Observe applicable safety data sheet!

GISCODE: ZP1

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