



Technical Data Sheet

ASO®-SEB

Art. no. 2 06544

Rapid setting binder for screeds with fast readiness to receive tiles

- Rapid-setting
- Long working time
- Walkable after 1 day with tiles*)
- For interior and exterior areas
- Can be heated after 3 days in accordance with accepted rules of the technology

Areas of use:

ASO-SEB is an optimised drying, fast-hardening cement to manufacture cement-based screeds with early readiness to receive and high strength. Is suitable as a wearing surface or substrate for tiles, boards, textile coverings, parquet, or PVC. The general guidelines for cement-based screeds according to DIN 18560 and DIN 18353 apply for processing. The substrate must correspond to the payloads associated with the load-bearing capacities in accordance with DIN EN 1991-1-1. With ASO-SEB it is possible to produce cement-based screeds with the minimum quality CT-C25-F4 per DIN EN 13813 by working in accordance with these processing instructions. In areas exposed to water with wear class A0, A, B0, C in accordance with the ZDB data sheet [* 1], or the water impact classes W0-I to W3-1 in accordance with DIN 18534, screed produced with ASO-SEB is applicable for use if a suitable SCHOMBURG bonded waterproof system has been applied. In swimming pools, wear class B in accordance with the ZDB data sheet [* 1], or the water impact classes W1-B to W3-B per DIN 18535, we recommend using screed produced from ASO-EZ4/ASO-EZ4-PLUS.

[*] Refer to notes

Technical data:

Basis: Special cement, additives
 Colour: cement grey
 Mixing ratio: ASO-SEB : Aggregate
 1 : 4 to 1 : 5 parts by weight
 Water addition: depending on the moisture in the aggregate used up to approx. 30 weight % in relation to the ASO-SEB

addition; the value applies when using dry aggregate

Mixing method: Forced paddle mixer

Bulk density of fresh mortar: approx. 2.1 kg/dm³ depending on aggregate used

Storage: dry, 6 months in the original unopened container, promptly use opened container

Application/substrate temperature: +5 °C to +30 °C

Packaging: 25-kg container

Cleaning: Clean tools and equipment with water immediately after use

Foot traffic after*): approx. 24 hours

Withstands loads after*): approx. 7 days

Pot life*): approx. 45 minutes

*) The specifications apply for +23 °C and 50% relative humidity; higher temperatures shorten, lower temperatures extend the time cited.

Consumption, kg/m² ASO-SEB:

Mix ratio, parts by weight		
Screed thickness, cm	1 : 4**)	1 : 5**)
1	3.3	2.5
4	13.3	9.9
5	16.7	12.3
6	20.0	14.8

***) 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 per DIN 18560:

under tiles	45 mm on insulation or separating layer
under parquet, carpet, linoleum or PVC	45 mm on insulation or separating layer
general	10 mm bonded

Application:

To mix, we recommend using the EstrichBoy screed mixer from Brinkmann with 65 mm hose diameter or other conventional screed mixers, e.g. PFT, the Putzmeister Mixokret or similar. Observe the moisture in the aggregate and avoid excess water! The pot life at +20 °C is approx. 45 minutes. Mixing, application, and processing must be completed in immediate sequence. The dimensions of surfaces must be such that the application can be completed within this pot life. Higher temperatures shorten, lower temperatures extend the application and hardening times. With bonded screeds, first brush ASOCRET-HB-FLEX into the prepared - e.g. abraded - concrete substrate. Apply the screed to the wet slurry coat. The general guidelines for cement-based screeds according to DIN 18560 and DIN 18353 apply for processing.

Mixing recommendations for mixing and conveying machines:

In conventional mixing and conveying machines with a 220 l mixing vessel, e.g. the Putzmeister Mixokret, a total 200kg of aggregate is mixed with 50 kg ASO-SEB. This equates to a mixing vessel level of approx. 80% - as recommended by the machine manufacturers in general.

Proceed as follows here:

First, half-fill the mixing drum with aggregate with a grain size 0/8 (approx. 15 scoops of 7 kg each), add approx. 7.5 l water and 50 kg ASO-SEB. Then top up the mixing drum with the remaining aggregate (a further 15 scoops of 7 kg each, depending on the mix ratio) and then add the remaining water until a damp earth consistency has been obtained. Depending on the aggregate moisture, a total of approx. 7.5-15 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. The total mixing time is approx. 2-3 min.

Mixing recommendation for mortar:

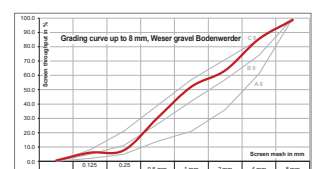
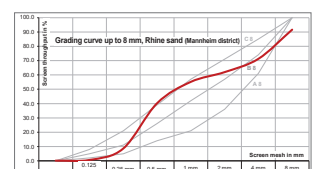
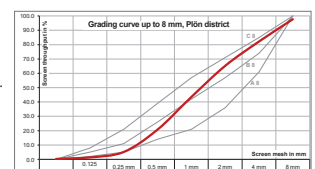
Mix ASO-SEB with mix ratio:

1 : 3 parts by volume (equates to approx. 1 : 4.5 parts by weight) with aggregate (grain 0-4 mm Ø) in a suitable forced paddle mixer.

Minimum mixing time 2 minutes!

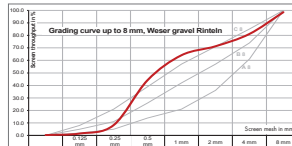
Protect the fresh screed from drying out too rapidly, e.g. through heat or draughts. With a mix ratio of 1 : 4 parts by weight and the use of dry aggregates in accordance with DIN 4226 and a grading curve between A8-B8 close to B8 with a constant grain composition, with a water addition of 15 litres to 50 kg ASO-SEB, an ambient and substrate temperature of +23 °C, a relative humidity of 50% and a layer thickness of 5 cm, readiness for laying with tiles is established after one day. With other floor coverings, check the readiness to receive tiles by performing a moisture measurement in accordance with the CM method. In the case of screeds that are required to satisfy a certain screen quality in accordance with DIN EN 13813, a suitability test is necessary. This must be performed before starting the work.

The adjacent diagrams show typical grading curves for aggregates frequently used for screed production. These are aggregates rich with fine parts, which require a greater quantity of water and binding agent in comparison to the optimum grading curve between A8-B8 close to B8. However, in accordance with investigations by the institute for building material testing and flooring research ("IBF"), use of such aggregates stands at almost 70% nationwide. Such aggregates are generally good to apply and smooth, but they require a greater quantity of water and binding agent in order to achieve similar strengths as with optimum grains.



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Our investigations with the adjacent typical representatives of aggregates rich with fine parts have shown that ASO-SEB in conjunction with grading curves around C8 and above can be used to produce good screeds if the formula is correspondingly adjusted (binding agent and added water).



In the following, the orientating strengths in accordance with prEN 13892-2 have been determined with the aggregates with damp earth consistency. Under construction site conditions, the strength class is generally reduced by one class.			
Aggregate 0-8 mm	Mixing ratio	Strength class ***)	
Plön district	1:4	after 24 h	CT-C35-F5
		after 48 h	CT-C40-F5
	1:5	after 7 d	CT-C40-F6
		after 28 d	CT-C50-F7
Rhine sand, Mannheim district	1:4	after 24 h	CT-C20-F4
		after 48 h	CT-C35-F6
	1:5	after 7 d	CT-C40-F7
		after 28 d	CT-C40-F7
Weser gravel, Bodenwerder/Rinteln	1:4	after 24 h	CT-C30-F5
		after 48 h	CT-C40-F5
	1:5	after 7 d	CT-C40-F7
		after 28 d	CT-C50-F7
***) Information applies to +23 °C and 50% relative humidity			

Important instructions:

- For use in areas with inadequate aggregate quality or where storage of the mortar components is not possible or desirable, it is possible to use the pre-blended dry mortar ASO-SEM, ASO-EZ4-PLUS, ASO-EZ-light!
- A moisture measurement should be carried out with the CM equipment to assess the produced screed for readiness to receive tiles. The following limit values should be complied with:

Maximum moisture content of the screed, determined with the CM device			
Top layer		heated	unheated
Vapour barrier covering		1.8 %	2.0 %
Textile covering	Water vapour inhibiting	1.8 %	2.5 %
	Water vapour permeable	2.0 %	3.0 %
Parquet		1.8 %	2.0 %
Laminate floor		1.8 %	2.0 %
Ceramic tiles or natural / artificial stone at +23 °C, 50% r.h.	Thick layer	2.5 %	2.5 %
	Thin-bed	2.5 %	2.5 %
The CM measurement must be completed in accordance with the current working instructions FBH-AD from the technical information "Interface coordination with heated floor constructions".			

- 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 quickly, and it will no longer exhibit a high strength!
- Low temperatures, high humidity and heavy layer thicknesses delay hardening, drying and extend the time until ready to receive tiles and boards. (See also BEB data sheet "Building climate preconditions for drying screeds"). Tests showed that the crystalline binding of the 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

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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 is partly decisive for the properties of the screed produced with it. Aggregate in accordance with DIN 4226 should be used with a constant grading curve between A and B close to B per 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 per DIN 1045 require a higher proportion of ASO-SEB. The grain size distributions that should be used with different layer thicknesses can be found in the following table:

Grading curve	Minimum layer thickness	Maximum layer thickness
0-4 mm	10 mm	approx. 40 mm
0-8 mm	25 mm	approx. 80 mm
0-16 mm	50 mm	approx. 160 mm

- ASO-SEB can crystalline bind approx. 25% of its weight to water. Water quantities that exceed this volume must evaporate and therefore delay the readiness to receive tiles and boards!
- If the surface of the screed cannot be sufficiently closed when rubbed, this indicates that the proportion of fine grain in the aggregate is too low. A higher quantity of ASO-SEB is required to replace the missing proportion of fine grain!
- With rising moisture from the substrate, effective waterproofing is essential prior to laying the screed!
- The installation location needs to 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!
- Do not add any other cement or binder!

- Border, field, building separation 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!

- Do not add any additives and substances!
- The technical data sheets for the listed products must be observed!

- The current relevant regulations are to be observed! So, for example:

DIN 18157
DIN 18352
DIN 18531
DIN 18534
DIN 18535
DIN 18560
DIN EN 13813
DIN 1055
DIN 1045
DIN 4226

The BEB data sheets, issued by the Bundesverband Estrich und Belag e.V. [Federal association for screed and covering]

The technical information "Interface coordination with heated floor constructions"

The ZDB data sheets, issued by the Fachverband des deutschen Fliesengewerbes [professional association of the German tile trade]:

[* 1] "Bonded waterproof systems"

[* 3] "Movement joints in cladding and coverings made of tiles and boards"

[* 5] "Ceramic tiles and boards, natural stone and synthetic stone on cement-based floor constructions with insulation layers"

[* 6] "Ceramic tiles and boards, natural stone and synthetic stone on heated, cement-based floor constructions"

Observe valid safety data sheet!

GISCODE: RE 2