

PRODUCT DATA SHEET

Sika® Sigunit® SA 545

(formerly MasterRoc® SA 545)

Alkali-free, non-caustic and non-toxic high performance powder accelerator for dry-mix sprayed concrete

DESCRIPTION

Sika® Sigunit® SA 545 is a high-performance alkali-free, non-caustic and non-toxic accelerator for use in the dry-mix sprayed concrete process. It is a powder additive whose dosage can be varied to the desired setting and hardening times.

USES

Sika® Sigunit® SA 545 is suitable for all applications where high early strength, high final strength and very thick sprayed concrete layers are required.

- For temporary and permanent ground support in tunneling and mining
- Slope stabilization
- For repair works

CHARACTERISTICS / ADVANTAGES

- Overhead layer thickness of 10-15 cm in a single-application
- Rapid work process
- Good early strength development
- Limits the decrease of final strength
- Improves durability as compared to mixes with traditional accelerators
- Provides an improved working environment
- Reduces salt content in leaching water

PRODUCT INFORMATION

Packaging	Sika® Sigunit® SA 545 is supplied in 20 kg bags.
Shelf Life	If stored dry and in tightly closed original bags, Sika® Sigunit® SA 545 has a shelf life of 12 months.
Storage Conditions	If subjected to humidity, the product loses its effectiveness. Any lumps can simply be crushed by hand. Material which is too hard must be discarded.
Appearance / Colour	White powder
Bulk Density	1030 – 1100 kg/m ³
pH-Value	4 ± 1
Total Chloride Ion Content	< 0.1%

TECHNICAL INFORMATION

Concreting Guidance

The substrate must be clean and free from loose particles and preferably damp.

It is recommended to only use fresh cement as the age of the cement can have a negative influence on the setting characteristics of the mix.

Sika® Sigunit® SA 545 is sensitive to the type of cement. With some cements the obtained setting characteristics can be too slow. This sensitivity can be compensated by reducing the water content. We recommend the use of Portland cements (PC/HPC), which normally give faster setting than blended or sulphate resistant cement types.

In any case, it is strongly recommended to carry out preliminary tests to check the setting and the 24 hour strength characteristics of the cements planned for use in a project.

Evaluation of setting and 24 hour strength characteristics:

Initial set	Final set	24h Strength	Rating
2 min.	6-8min.	18-20 MPa	Good
5 min.	8-12 min.	12-15 MPa	OK
>10 min.	>15 min.	<10 MPa	poor

Concrete Mix Design

The minimum cement content with the use of Sika® Sigunit® SA 545 is 350 kg per m³. It is normally added to the mix immediately prior to use.

A combination of Sika® Sigunit® SA 545 and SikaTard HCA 10 hydration control admixture prolongs the open time of the mix.

- Dosage: 0.4% by weight of binder of SikaTard HCA10 at ambient temperatures of >20°C.
 - At ambient temperatures between +15°C and +20°C only 0.2% by weight of binder should be used.
 - Below +15°C SikaTard HCA 10 should not be used at all.
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Consumption

The consumption of Sika® Sigunit® SA 545 also depends on the water added, temperature conditions (dry mix and ambient), cement reactivity and on required layer thickness, setting time and early strength development. The consumption is normally in the range of **4 to 8% of binder weight**. Overdosing (>10%) may result in decreased final strength.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

ECOLOGY HEALTH AND SAFETY

The same precautions as with handling and use of cementitious products should be observed.

Avoid eye and skin contact and wear rubber gloves and safety glasses. If contact occurs, rinse with plenty of water. In case of eye contact seek medical advice. For further information, refer to the Material Safety Data Sheet or contact your local Sika representative.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

Sika South Africa (Pty) Ltd

9 Hocking Place,
Westmead, 3608
South Africa
Phone +27 31 792 6500
www.sika.co.za



Product Data Sheet
Sika® Sigunit® SA 545
October 2023, Version 01.01
021401000000002023

SikaSigunitSA545-en-ZA-(10-2023)-1-1.pdf