

PRODUCT DATA SHEET

Sika® Sigunit® SA 540

(formerly MasterRoc® SA 540)

Alkali-free, high performance powder accelerator for dry-mix shotcrete

DESCRIPTION

Sika® Sigunit® SA 540 is a high performance alkali-free, non caustic and non toxic accelerator for the use in dry-mix shotcrete processes. It is a powder additive whose dos-age can be varied to the desired setting and hardening times.

USES

Sika® Sigunit® SA 540 is suitable for all applications, where high early strength, high final strength and large thick-ness are required.

- For temporary and permanent rock support
- For Final lining (one pass lining)
- For repair works
- In tunnels
- In mining

CHARACTERISTICS / ADVANTAGES

The quick setting properties allow:

- Overhead layer thicknesses of 100-150 mm in a single application.
- Rapid work progress

The unique formula

- Provides good early strength development.
- Limits the decrease of final strength
- Improves durability as compared to mixes with traditional accelerators

The non-caustic and nontoxic nature of the product:

- Prevents skin burns and provides an improved working environment.
- Reduces required handling precautions and hence improves economy.
- Reduces salt content in leaching water.

PRODUCT INFORMATION

Packaging	20 kg bag
Appearance / Colour	White Powder
Shelf Life	6 months from date of production if stored in unopened, undamaged and original sealed packaging.
Storage Conditions	Store under cover out of direct sunlight and protect from extremes of temperature. keep the temperature between 5 °C and 35 °C. In tropical climates the product must be stored in an air-conditioned environment.
Bulk Density	500 – 700 kg/ m ³
Total Chloride Ion Content	< 0.1%

APPLICATION INFORMATION

Recommended Dosage	Depending on the required setting time and early strength requirements dosage of Sika® Sigunit® SA 540 will normally be in the range of 2-6% of cement weight. Over dosing, in excess of 10% will lead to lower final
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strengths. On site trails are recommended prior to use.

Consumption

The consumption of Sika® Sigunit® SA 540 depends on the temperature of concrete, air, substrate and reactivity of the cement being used.

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

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

The substrate must be clean and free from loose particles and only lightly sprinkled.

MIXING

The minimum cement content with the use of Sika® Sigunit® SA 540 is 350 kg/m³ preferably it should be 400kg/m³. Sika® Sigunit® SA 540 is added to the mix immediately prior to use.

APPLICATION

Sensitivity to cement

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

Type: Sika® Sigunit® SA 540 is sensitive to the type of cement. With some cements the obtained setting characteristics can be too slow. This sensitivity can be compensated by lowering the W/C ratio. We recommend the use of OPC (Ordinary Portland Cement) or RHPC (Rapid Hardening Portland Cement) which will normally give faster setting characteristics than Blended Cements or SRC (Sulphate Resistant Cement). In any case, it is strongly recommended to do preliminary tests to check the setting time and the 24 hour strength characteristics of the cement type used in the project.

Evaluation of setting and 24 hour strength characteristics:

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

Remarks: if the setting times are poor, the 24 hour strength is usually good. With a slow setting it is possible to apply 50-70mm on the vertical and 30- 50mm over-head.

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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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