

PRODUCT DATA SHEET

Sigunit[®]-49 AF

POWDERY ALKALI-FREE SETTING ACCELERATOR FOR SHOTCRETE



DESCRIPTION

Sigunit[®]-49 AF is an alkali-free setting accelerator for dry-mix shotcrete in powder form.

USES

Sigunit[®]-49 AF is especially formulated for use as setting accelerator in Portland cement based mortars and concrete. The product is particularly suitable for:

- Applications, where high initial strength is needed and/or the shotcrete must play a supporting role in the early stage
- Dry-mix shotcrete for tunnel repairs, heading stabilization in tunneling, slope and trench stabilization, etc.
- Processing in thin-flow process

CHARACTERISTICS / ADVANTAGES

The benefits of Sigunit[®]-49 AF include, but are not limited to the following:

- Accelerated cement setting
- High early strength development of shotcrete
- Lower rebound during application
- Improved bond of shotcrete to rock and concrete, making overhead spraying easier
- Minimum strength loss in the accelerated concrete
- Sigunit[®]-49 AF is non corrosive to steel reinforcement
- Alkali-free, which eliminates any adverse effects from additional alkali in the spray dust
- No additional surface and ground water pollution by leached-out alkali

APPROVALS / STANDARDS

Non-alkaline sprayed concrete set accelerating admixture according to EN 934-5:2007. Declaration of Performance 60489541 and provided with the CE Mark.

PRODUCT INFORMATION

Chemical base	Mineral based, alkali-free
Packaging	25 kg bag
Appearance / Colour	Beige powder
Shelf life	12 months shelf life from date of production if stored properly in undamaged, unopened, original sealed packaging.
Storage conditions	Dry storage at temperatures up to 30 °C. Protect from direct sunlight.
Bulk Density	1.1 ± 0.1 g/cm ³
Total Chloride Ion Content	≤ 0.1 %
Equivalent Sodium Oxide	≤ 1.0 %

TECHNICAL INFORMATION

Specific Advice

The acceleration effect is dependent on the cement (content, type and age), the shotcrete and substrate temperatures, layer thicknesses and the spray process. In dry spraying, the quantity of mixing water is an important criterion, also relevant for the accelerating effects of Sigunit®-49 AF.

When applying shotcrete in thicker layers, make sure that the temperature of the basic concrete is not below +15 °C. Lower temperatures require a higher dosage of the accelerator.

The water-binder ratio shall be below 0.5 to ensure durability and ultimate strength required. If applied in drymix shotcrete, the addition of powdery water-reducing additives (Sika® ViscoCrete® Powder) is recommended.

If applied in earth-moist concrete, Sika® additives and admixtures like SikaTard® and SikaFume® are recommended for improving the basic concrete mix.

Note:

- Preliminary testing is required to determine the exact dosage for the specific condition. Please contact Sika Technical Service for more information and advice.
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APPLICATION INFORMATION

Recommended Dosage

Typical dosage in the range of 4 to 7 % of the binder weight. The maximum dosage shall not exceed 7 % of the binder weight.

Compatibility

Sigunit®-49 AF may be combined with many other Sika® products like Sika® ViscoCrete®, SikaTard® and SikaFume®.

Note:

- Always conduct trials before combining products in specific mix designs and contact Sika Technical Service for any additional information and advice concerning specific combinations with other products.
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DISPENSING

Sigunit®-49 AF is added to the dry mix in the drymix mortar plant. Alternatively, it can be added to the dry and/or earth-moist mortar/concrete pre-mix at the construction site prior to feeding the spray equipment (rotor machine).

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. 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.

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.

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.

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.

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