

PRODUCT DATA SHEET

Sika® Sigunit®-59 AF

Powdery alkali-free setting accelerator for shotcrete



DESCRIPTION

Sika® Sigunit®-59 AF is an alkali-free setting accelerator for dry-mix shotcrete in powder form.

USES

Sika® Sigunit®-59 AF is especially formulated for use as setting accelerator in Portland and Portland composite 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

FEATURES

The benefits of Sika® Sigunit®-59 AF include, but are not limited to the following:

- Very effective in Portland and Portland composite cement based systems, such as CEM II/B-M (S-T)
- Low dosage
- Fast 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
- Sika® Sigunit®-59 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

CERTIFICATES AND TEST REPORTS

Confirms to the requirements of EN 934-5, Table 2 (Non-alkaline sprayed concrete accelerator)

PRODUCT INFORMATION

Composition	Mineral based, alkali-free powder
Packaging	20 kg bags, 800 kg on pallet; 1000 kg BigBag
Appearance and colour	White powder
Shelf life	24 months shelf life from date of production if stored dry and properly in undamaged, unopened, original sealed packaging.
Storage conditions	Dry storage at temperatures up to 30 °C. Protect from direct sunlight.
Bulk density	Approx. 0.90 g/cm ³
pH-Value	Approx. 3 (100g/l H ₂ O)

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Total chloride ion content ≤ 0.10 %

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 Sika® Sigunit®-59 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. Support from our Technical Services Department is recommended.

APPLICATION INFORMATION

Recommended dosage

Typical dosage in the range of 2 to 6 % of the binder weight. The maximum dosage should not exceed 6 % of the binder weight. The water-binder ratio should be below 0.5 to ensure durability and ultimate strength required. The addition of water-reducing additives (Sika® ViscoCrete® Powder) is recommended. Note: Preliminary testing is required to determine the exact dosage for your specific conditions. Please contact our Technical Services Department for more information and advice

Compatibility

Sika® Sigunit®-59 AF may be combined with Sika ViscoCrete Powders for water reduction. Important: Always conduct trials before combining products in specific mix designs and contact our Technical Services Department for any additional information and advice concerning specific combinations with other products.

Dispensing

Sika® Sigunit®-59 AF is added to the dry mix in the drymix mortar plant. Alternatively, it can be added to the dry mortar/concrete premix at the construction site prior to feeding the spray equipment (rotor machine).

BASIS OF PRODUCT DATA

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

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and

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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The information, and, in particular, the recommendations relating to the application and end-use of Sika

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