

PRODUCT DATA SHEET

Sika® Sigunit® L-53 AF

Alkali-free shotcrete admixture

DESCRIPTION

Sika® Sigunit® L-53 AF is a high-performance liquid, alkali-free, set accelerator for shotcrete.

USES

Sika® Sigunit® L-53 AF is suitable for both dry and wet spraying processes and it is used for:

- Excavation stabilisation in tunnelling and mining
- Rock, slope and trench stabilisation
- High quality lining shotcrete

CHARACTERISTICS / ADVANTAGES

Sika® Sigunit® L-53 AF has the following characteristics and advantages:

- High early strength development
- Alkali-free
- Minimal strength loss of the accelerated concrete
- No pollution of groundwater by leached out alkalis
- Distinct reduction of rebound and dust
- Improved bond of shotcrete to substrate
- Chloride-free, no negative affect on reinforcement steel

PRODUCT INFORMATION

Chemical Base	Inorganic aluminium complexes
Packaging	200 Litre plastic drums 1000 Litre IBC Sigunit®-L53 AF must not be stored in standard steel containers.
Appearance / Colour	Liquid, yellowish
Shelf Life	Three months from date of production if stored in original, unopened, undamaged and sealed containers.
Storage Conditions	Storage at temperatures between 5°C and 30°C. Protect from direct sunlight, frost and contamination. Use clean containers when delivered in bulk. Sika® Sigunit® L-53 AF must not be stored in standard steel containers.
Density	~ 1.46 kg/L
pH-Value	~ 3.0
Conventional Dry Material Content	~ 51 %
Viscosity	≤ 120 mPa s at 20°C
Total Chloride Ion Content	≤ 0.1 %
Equivalent Sodium Oxide	≤ 1.0 %

TECHNICAL INFORMATION

Specific Advice	Sika® Sigunit® L-53 AF is added at the nozzle. Accurate and constant dosing into the concrete flow is essential.
Concrete Mix Design	The suitability of the proposed mix design must be tested in field trials before commencement of the project. High quality shotcrete requires a w/c ratio of less than 0.5 and a flow table spread of more than 500 mm. Temperature of basic mix must be higher than 15°C.
Substrate	The substrate must be clean, free of loose stones and free of water under hydrostatic pressure.

APPLICATION INFORMATION

Recommended Dosage	The correct dosage must be determined by preliminary testing. For layer thicknesses of up to 10 cm applied in one pass, the recommended accelerator dosage is between 4 % and 7 % by weight of binder. Lower ambient and basic mix temperatures require higher dosage of accelerator.
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LIMITATIONS

The accelerator's effect depends on the content, age and type of cement, as well as on the shotcrete temperature. Furthermore, the shotcrete quality is widely affected by the substrate, the applied layer thickness, the spraying process, the quality of equipment and the application technique. The w/c ratio of the basic concrete mix in the wet spraying process, and the quantity of gauging water in the dry spraying process are also parameters influencing the acceleration effect of Sika® Sigunit® L-53 AF.

When using sulphate resistant cements strength development can be slower.

Sika® Sigunit® L-53 AF is not compatible with alkaline shotcrete accelerators. Before using Sika® Sigunit® L-53 AF the accelerator hoses must be cleaned thoroughly.

The use of Sika® Sigunit® L-53 AF requires technically correct dosing and conveying / spraying technology. Metal parts of the pump and piping that come into direct contact with Sika® Sigunit® L-53 AF must be made of stainless steel.

Contact your local Sika company for any additional technical support required.

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.

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.

LOCAL RESTRICTIONS

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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Product Data Sheet

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