

PRODUCT DATA SHEET

Sigunit® L-72 AF

SHOTCRETE ADDMIXTURE

DESCRIPTION

Sigunit® L-72 AF is a high-performance liquid, alkali-free, softening and hardening accelerator for shotcrete.

USES

Sigunit® L-72 AF is suitable for both dry and wet spraying processes and it is used for:

- Support at the face whilst advancing tunnels and mines
- Rock, and slope stabilisation
- High quality lining shotcrete

CHARACTERISTICS / ADVANTAGES

Sigunit® L-72 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 the substrate
- Chloride-free, no negative affect the reinforcement steel

PRODUCT INFORMATION

Chemical Base	Special inorganic materials.
Packaging	280-kg drums Reusable plastic containers and bulk supply on request Sigunit®-L72 AF must not be stored in standard steel containers.
Appearance / Colour	Liquid, yellowish
Shelf Life	Minimum 6 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. Optimal storage temperature: 20°C – 25°C.
Density	~ 1.40 – 1.42 kg/L
pH-Value	~ 2.7
Conventional Dry Material Content	~ 52.0 % ± 3 %
Viscosity	≤120 mPa s at 20 °C
Total Chloride Ion Content	≤0.1 %
Equivalent Sodium Oxide	≤1.0 %

TECHNICAL INFORMATION

Specific Advice

Sigunit® L-72 AF is added at the nozzle. Accurate and constant dosing into the concrete flow is essential.

After prolonged storage the performance of Sigunit®-L72 AF should be tested and the material should always be stirred up before using.

Partially precipitated Sigunit®-L72 AF can be re-dissolved at temperatures of 30°-5 0°C. Re-dissolved material must be tested before using.

Containers have to be cleaned before refilling. Containers must always be stored firmly closed.

Concrete Mix Design

The suitability of any 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.

SYSTEM INFORMATION

System Structure

Aggregate grading for pumped concrete:
Usual mix with 8 mm max. aggregate size.

The use of an appropriate superplasticiser (such as Sika® ViscoCrete® SC-305) is essential.

Temperature of fresh concrete: > +15 °C

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APPLICATION INFORMATION

Recommended Dosage

The correct dosage must be determined by preliminary testing.

For layer thicknesses of up to 10 cm in one pass, dosage is between 3% and 9% of weight of binder depend on area of application and substrate condition.

Dosage of Sigunit®-L72 AF is by peristaltic pump such as the Sika® Aliva-403 pump. Optimized mixing with the concrete mix is also essential.

The following Sika® products are generally used for the basic shotcrete mix:

- Sika® ViscoCrete SC-305
 - SikaTard®-203
 - SikaTard®-930
 - SikaPump®
 - SikaFume® / -TU / Sikacrete®-L /
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LIMITATIONS

If thicker layers of shotcrete are to be applied, ensure that the temperature of the basic concrete is not lower than +15 °C. Lower temperatures require higher dosage of accelerator.

The substrate must be clean, free of loose stones and free of water under hydrostatic pressure.

The accelerator's effect depends on the cement content, the age and type of cement, on the substrate and the shotcrete temperature as well as on the layer thickness, spraying process, quality of equipment and 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 Sigunit®-L72 AF.

When using sulphate resistant cements strength development can be slower. Sigunit®-L72 AF is not compatible with alkaline shotcrete accelerators. Before using Sigunit®-L72 AF the accelerator hoses must be cleaned thoroughly. The use of Sigunit®-L72 AF requires technically correct dosing and conveying / spraying technology. Metal parts of the pump that come into direct contact with Sigunit®-L72 AF must be made of stainless steel.

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

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

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

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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