

PRODUCT DATA SHEET

Sika® Sigunit®-2770 AFL

Alkali-free shotcrete admixture

DESCRIPTION

Sigunit®-2770 AFL is a high-performance liquid, alkali-free, setting and hardening accelerator for shotcrete.

USES

Sigunit®-2770 AFL 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®-2770 AFL liquid shotcrete set accelerator 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
- Improves bond of shotcrete to rock and concrete thus facilitating overhead spraying
- Distinct reduction of dust
- Chloride-free, does not negatively affect the reinforcement steel

PRODUCT INFORMATION

Chemical Base	Aluminium salts
Packaging	200L plastic drums 1000L IBC's <ul style="list-style-type: none"> ▪ Sigunit®-2770 AFL must not be stored in standard steel containers.
Appearance / Colour	Liquid, clear yellowish
Shelf Life	4 months from date of production if stored in original, unopened, undamaged and sealed containers
Storage Conditions	<ul style="list-style-type: none"> ▪ Protected from direct sunlight and frost and kept at temperatures between +5°C and +35°C. ▪ After prolonged storage the performance of Sigunit®-2770 AFL should be tested and the material should always be stirred up before using. ▪ Containers have to be cleaned before refilling. Containers must always be stored firmly closed.
Density	1.37 kg/l
pH-Value	~ 3.0
Conventional Dry Material Content	48.0 +/- 3.0%
Total Chloride Ion Content	≤ 0.1%
Equivalent Sodium Oxide	≤ 1.0%

TECHNICAL INFORMATION

Concreting Guidance

- Aggregate grading for pumped concrete: Usual mix with 8 mm max. aggregate size.
 - The suitability of the proposed mix design must first be tested in field trials before commencement of the project.
 - Concrete consistency (dependent on spraying equipment used): Flow table spread size ≥ 45 cm; w/c ratio ≤ 0.48
 - The use of an appropriate superplasticiser (such as Sika® ViscoCrete® / SikaTard®) is essential.
 - Temperature of fresh concrete: $> +15^{\circ}\text{C}$
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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 **4% and 8% of weight of binder**.

Compatibility

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

- Sika® ViscoCrete
 - Sika® ViscoFlow
 - SikaTard®-930
 - SikaFume®
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Dispensing

Dosage of Sigunit®-2770 AFL is by peristaltic pump such as the Sika® Aliva-403 pump. Optimized mixing with the concrete mix is also essential.

Restrictions

- If thicker layers of shotcrete are to be applied, ensure that the temperature of the basic concrete is not lower than $+15^{\circ}\text{C}$. 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 and 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®-2770 AFL.
 - When using sulphate resistant cements strength development can be slower. Sigunit®-2770 AFL is not compatible with alkaline shotcrete accelerators. Before using Sigunit®-2770 AFL the accelerator hoses must be cleaned thoroughly. The use of Sigunit®-2770 AFL requires technically correct dosing and conveying / spraying technology. Metal parts of the pump that come into direct contact with Sigunit®-2770 AFL must be made of stainless steel.
 - Contact your local Sika company for any additional technical support required.
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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 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 Material Safety Data Sheet 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. 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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