

PRODUCT DATA SHEET

Sika® Sigunit® L

Liquid shotcrete accelerating admixture for the wet spray process

DESCRIPTION

Sika® Sigunit® L is a liquid cohesion agent and a rebound reducer for the wet spray method with momentary gluing effect.

USES

Sika® Sigunit® L accelerates setting of concrete in applications such as:

- Fixing rocks and slopes
- Lining in tunnels, canals, e.t.c.
- Underground structures
- Repairs
- Slope configuration
- Water tanks
- Construction pits and sub-terranean excavations
- Rock and soil stabilisation

CHARACTERISTICS / ADVANTAGES

Sika® Sigunit® L produces increased internal cohesion and adhesion of shotcrete.

- Thick layers can be applied in one application
- Improves adhesion of the shotcrete to walls, rock formations and concrete and thus facilitates overhead application of shotcrete
- Makes it possible to produce a high strength and dense shotcrete
- Easy handling
- Improves watertightness
- Improves adhesion to substrate and reduces rebound and dust production
- Reduces the required layers and increases their width
- Chloride free, does not attack or corrode iron or steel reinforcement

The accelerator's effect depends on the cement content, type and age, substrate temperature and type, shotcrete temperature, layer thickness and spray process / equipment. The water/cement ratio of the basic concrete mix is another important parameter which influences the acceleration effect of Sika® Sigunit® L.

APPROVALS / CERTIFICATES

- CE Marking and Declaration of Performance according to EN 943-5 - Sprayed concrete set accelerating admixture, T.2

PRODUCT INFORMATION

Composition	Modified silicate
Packaging	200L drums 1,000L IBC tankers
Shelf life	12 months from date of production
Storage conditions	Sika® Sigunit® L must be stored in undamaged and unopened, original sealed containers. Sika® Sigunit® L has a reaction in contact with atmospheric humidity [mois-

ture] or rain, e.t.c. and must therefore always be stored in sealed containers. Sika® Sigunit® L should only be decanted into clean containers. Avoid air entrapment. Filling through floor inlets or immersed pipes is best. Containers must always be properly sealed.

Do not store in aluminium tanks.

Protect from extreme cold.

Note: Once containers are opened, use the material as quickly as possible.

Appearance and colour	Colorless liquid
Density	1.4 ± 0.03 kg/lit
pH-Value	12 ± 1
Total chloride ion content	Free (EN 934.01)

TECHNICAL INFORMATION

Specific advice	Ambient Temperature: Above +1°C
Concrete mix design	<p>Pump granulometry: Normal max. particle size 8 mm to 16 mm. Concrete consistency (dependent on spray equipment): Concrete flow 45 cm; W/C 0,48. A suitable flow agent is required (e.g. Sika® ViscoCrete® series). Fresh concrete temperature: > +15°C. For better system performance, the use of mixtures with low W/C ratios (<0,50) in combination with compatible Sika® ViscoCrete® superplasticizers is recommended. In case of demands for higher pumpability, the use of Sika® Visco I-100 will give exceptional results. Reduction in cement quantity can be achieved, with use of suitable Sika admixtures and appropriate mix design.</p>

APPLICATION INFORMATION

Recommended dosage	3% - 8% by weight of binder. The correct dosage must be determined by preliminary testing.
Compatibility	<p>The following Sika products are generally used to improve the performance or the application properties of the basic concrete mix:</p> <ul style="list-style-type: none">▪ Sika® ViscoCrete® series▪ SikaTard®-930▪ Sika® Visco I-100▪ SikaFume® HR-E / Sikacrete® AR▪ Sika-Air® Fine <p>Trials are recommended before combining products.</p>

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.

IMPORTANT CONSIDERATIONS

- Sika® Sigunit® L must be added either with the mixing water for the dry process or with a gauging device suitable for the wet spray process.
- Skilled nozzle operation and thorough mixing within the concrete are essential.
- The fresh concrete characteristics (correct workability) must be adjusted to suit the spray equipment, its capacity, temperature and other local conditions.
- The use of a high precision gauging device is essen-

tial in order to achieve correct application without interruptions. The exact dosage depends on cement quality, aggregate granulometry and quality, concrete and accelerator temperature, substrate humidity, output rate e.t.c. Suitability tests must be performed.

- Properties of fresh concrete (suitable workability) must be regulated in order to adjust to shotcrete machines and their capacity, ambient temperature and other local conditions.
- Sika® Sigunit® L is not compatible with aluminium based and non-alkali accelerators. In case of use of Sika® Sigunit® L in pumps or other equipment where such types of products have been previously used, even at small quantities, thorough cleaning before and after use is recommended. Mixing of Sika® Sigunit® L with non-compatible accelerators can

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cause sedimentation of immediate solidification of mix.

- Certain superplasticizers are not compatible with Sika® Sigunit® L. Mixing of non-compatible superplasticizers with Sika® Sigunit® L can lead to increased rebound and loss of strength in shotcrete. Consult the Technical Department.
- Low temperatures affect the performance of Sika® Sigunit® L negatively. Preventive measures must be taken in order to protect the accelerator and the concrete.
- Moreover the cement and aggregates (quantity and quality) are crucial factors. Trial tests are essential.
- In the event of solidification, Sika® Sigunit® L can be re-used after being slowly thawed in warm environment.
- Sika® Sigunit® L is not compatible with alkali free accelerators, such as Sigunit®-49 AF.
- Ask for technical support from Sika Hellas.

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.

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 exact product data and uses.

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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