

PRODUCT DATA SHEET

Sika® Sigunit® L-53 MY

Alkali Free Liquid Shotcrete Accelerator For Wet or Dry Shotcrete Process

DESCRIPTION

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

USES

Sika® Sigunit® L-53 MY is suitable set accelerator for dry-process as well as for wet process shotcreting. The main fields of applications are:

- Securing of rock in tunnel and mine construction (preliminary support)
- Rock and slope stabilization
- Dewatering work by dry process
- High quality shotcrete for permanent support by shotcrete

CHARACTERISTICS / ADVANTAGES

Sika® Sigunit® L-53 MY provides the following benefits:

- Alkali free (non-caustic) and classified as non-toxic product
- Fast to very fast setting of shotcrete mixes according to dosage used
- No strength loss of the accelerated concrete if used correctly
- No additional contamination of mountain and ground water due to washed out alkalis
- Large reduction in rebound as long as the spraying is performed according to the state of the art
- Improves bond of shotcrete to rock and concrete, making overhead spray easier
- Free of chlorides, no danger to steel reinforcement and steel fibers

PRODUCT INFORMATION

Packaging	200 L drum
Appearance / Colour	Yellowish liquid.
Shelf life	3 months from date of production If stored properly in undamaged, original, sealed packaging.
Storage conditions	Store in a cool, dry place. Protected from direct sunlight.
Density	1.41 ± 0.05 kg/l (at temperature 25 °C)
pH-Value	~2.0 - 3.5

APPLICATION INFORMATION

Recommended dosage

Accelerator dosage depends on many factors and should be adjusted to suit site conditions, including changes in the cement, aggregates and mix designs or when additives (flyash and/or GGBS) are added.

Accelerator dosage should not be fixed permanently!

The dosage of the accelerator would vary according to the scope of work. Typically, if the reduction of the rebound (without early strength) is required the dosage would be 2–4 %. If early strength is required, dosage would be 4–6 %. It would depend as well as on the type of application, vertical (benches) spraying or over-head spraying.

The performance of the accelerator is associated with the type of cement, age of cement, content of cement per cubic meter, quality of the cement, water-cement ratio, temperature of the concrete, substrate condition, etc. As a guideline, the recommended dosages are as follows (subject to confirmation by conducting site trials):

Process	Requirement	Dosage
Dry	Rebound reduction or vertical application	~3 % by weight of cement/binder
Dry	Early Strength or over-head application	4-6 % by weight of cement/binder
Wet	Rebound reduction or vertical application	4-5 % by weight of cement/binder
Wet	Early Strength or over-head application	5-6 % by weight of cement/binder

Concrete temperature should not be lower than 15 °C (especially for thick layers application). Lower concrete temperatures require higher dosages.

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.

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.

IMPORTANT CONSIDERATIONS

When using sulphate resistant cement, strength development may be slower.

- Sika® Sigunit® L-53 MY is not compatible with Sigunit® L20/L62
- Accelerator hoses must be thoroughly cleaned before using Sika® Sigunit® L-53 MY
- Metal parts of the pump coming into contact with Sika® Sigunit® L-53 MY must be stainless steel.
- The set accelerating effect depends on cement content, cement age, cement type, temperature of shotcrete and substrate as well as on layer thickness and shotcreting method.
- A further efficiency parameter of Sika® Sigunit® L-53 MY is the water-cement ratio of the concrete mix in wet process or the quantity of water added at the nozzle in dry process.

APPLICATION INSTRUCTIONS

The accelerator shall be added and mixed with the other concrete components as follows:

Dry Process

Sika® Sigunit® L-53 MY is supplied from the liquid dosing unit to the mixing tube assembly by means of water under pressure (2–3 bars more than the conveying pressure). The mixing tube assembly being located ~2.5 meters behind the nozzle or at the nozzle directly.

Wet Process

Sika® Sigunit® L-53 MY is supplied from the liquid dosing unit to the mixing tube assembly by means of pressurised air (2–3 bars more than the conveying pressure). The mixing tube assembly being located ~2.5 meters behind the nozzle or at the nozzle directly.

DISPENSING

Sika® Sigunit® L-53 MY is added to the shotcrete mix using suitable liquid dosing unit such as Aliva AL 403.4 (24–240 lt/h) or AL 403.5 (30–700 lt/h).

The parameters for determining a suitable dosing unit are the cement content, spraying out-put and the accelerator dosage.

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.

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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