

PRODUCT DATA SHEET

Sika® Sigunit® L-1453 AF

ALKALI FREE LIQUID SHOTCRETE ACCELERATOR FOR WET OR DRY SHOTCRETE PROCESS

DESCRIPTION

Sika® Sigunit® L-1453 AF is a high performance, liquid, alkali-free shotcrete accelerator.

USES

Sika® Sigunit® L-1453 AF 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-1453 AF 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

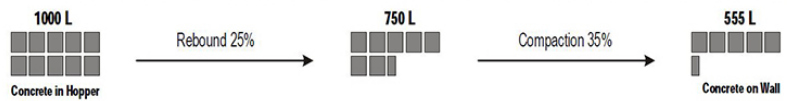
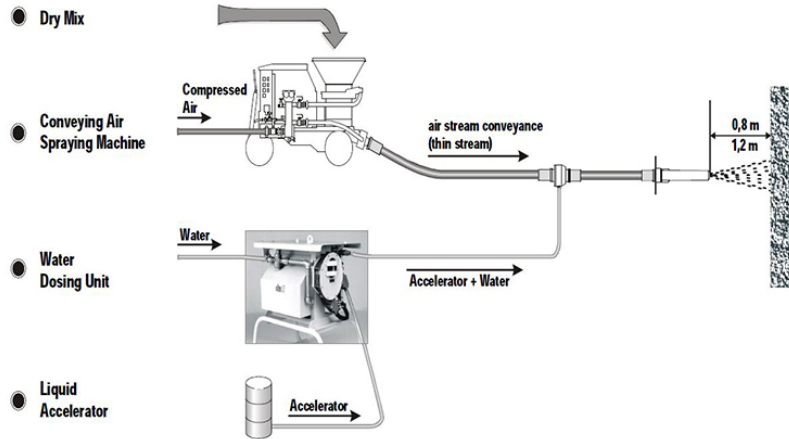
PRODUCT INFORMATION

Chemical base	Special inorganic substances in liquid form
Packaging	200/1000 L
Appearance / Colour	Liquid / Yellowish
Shelf life	6 months if stored properly in original unopened packaging
Storage conditions	Stored in cool and dry conditions, protected from direct sunlight
Density	1.36 – 1.46 kg/l (At 20°C)
pH-Value	2.00 – 3.00 (At 25°C)

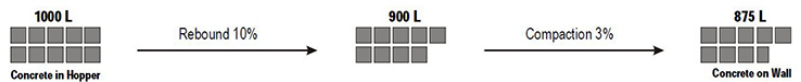
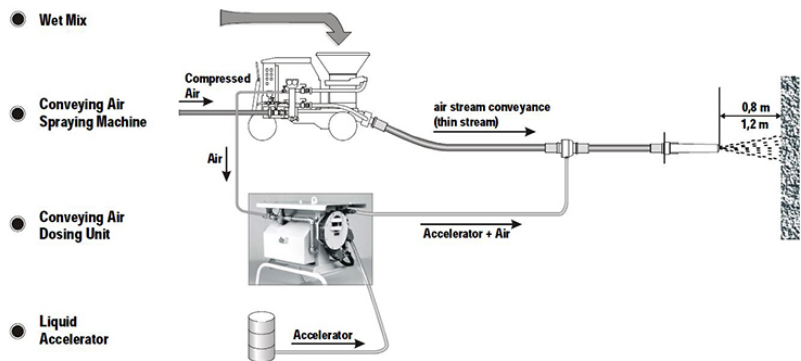
TECHNICAL INFORMATION

Concreting Guidance	Concrete temperature should not be lower than 15 deg.C (especially so for thick layers). Lower temperatures require higher dosages.
Specific Advice	Generally speaking, the accelerator will be added and mixed with the other concrete components as follows:

Dry process: Sika® Sigunit® L-1453 AF 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-1453 AF is supplied from the liquid dosing unit to the mixing tube assembly by means of air 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.



APPLICATION INFORMATION

Recommended Dosage

Accelerator dosage depends on many factors and actually should be adjusted as per the site conditions met.

It should not be fixed for one time at all!

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 would depend on the cement type, content, age and quality, the W/C of the mix, temperature of the mix, the substrate condition, etc.

As guide line, accelerator dosage – that need to be confirmed by site trial:

PROCESS	REQUIREMENT	DOSAGE
Dry	Rebound reduction or vertical application	~3% by weight of cement
Dry	Early strength or over-head application	4-6% by weight of cement
Wet	Rebound reduction or vertical application	4-5% by weight of cement
Wet	Early strength or over-head application	15-6% by weight of cement

DISPENSING

Sika® Sigunit® L-1453 AF is added thanks to suitable liquid dosing unit such as Aliva AL 403.4 (24-240 lt/h) or AL 403.5 (30-700 lt/h).

Suitable dosing unit type is determined according to cement content, spraying out-put and the accelerator dosage.

Restrictions

When using sulphate resistant cement, strength development may be slower

- Sika® Sigunit® L-1453 AF is not compatible with Sika® Sigunit® L-20/L-62
- Accelerator hoses must be thoroughly cleaned before using Sika® Sigunit® L-1453 AF
- Metal parts of the pump coming into contact with Sika® Sigunit® L-1453 AF 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-1453 AF is the W/C ratio of the concrete mix in wet process or the quantity of water added at the nozzle in dry process

- Do not store under direct sunlight
- Sika® Sigunit® L-1453 AF is suspended solution. Stir the product well before use

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

Protective Measures: Avoid prolonged contact with skin. Wash off thoroughly with soap water.

In case of contact with eyes or mouth, rinse immediately with clean warm water and seek medical attention without delay.

Avoid contact with food stuff and utensils.

Ecology/ Waste disposal: Do not dispose of into water or soil, but according to local regulations

Transportation class: Non-hazardous

Toxicity: Non-toxic

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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Product Data Sheet

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