

PRODUCT DATA SHEET

Sika® ViscoCrete® GL 27

New generation high range water reducing admixture primarily developed for the ready-mix concrete industry and self-compacting concrete

DESCRIPTION

Sika® ViscoCrete® GL 27 is a new high range water-reducing admixture, based on chains of modified polycarboxylate ether.

Primarily developed for the ready-mix concrete industry where slump retention, high strength and durability are required. It has a primary role in producing 'self-compacting concrete'.

CHEMISTRY

What differentiates Sika® ViscoCrete® GL 27 from the traditional high range water reducing action with good workability is a new unique mechanism of action that greatly improves the effectiveness of cement dispersion.

Traditional high range water reducing like melamine and naphthalene sulphonates are based on polymers which are absorbed by the cement particles. They wrap around the cement particles at the very early stage of the concrete mixing process. The sulphonic groups of the polymer chains increase the negative charge of the cement particle surface and disperse these particles by electrical repulsion. This electrostatic mechanism causes the cement paste to disperse and has the positive consequence of requiring less mixing water to obtain a given concrete workability.

Sika® ViscoCrete® GL 27 has a different chemical structure than that of traditional high range water reducing products. It consists of a carboxylic ether polymer with long side chains. At the beginning of the mixing process, it imitates the same electrostatic dispersion mechanism as the traditional high range water reducing action, but the side chains linked to the polymer backbone generate a steric hindrance which stabilises the particles ability to separate and disperse.

With this process, flowable concrete with greatly reduced water content is obtained. The alkalinity cre-

ated by the paste allows the polymers of Sika® ViscoCrete® GL 27 to 'open up and progressively release' many additional polymer chains that will prevent the early flocculation or stiffening of the mix. This mechanism allows considerably longer workability, reduction of mixing water content and higher early strengths, compared to traditional or retarding, high water reducing admixtures.

USES

The excellent dispersion effect makes Sika® ViscoCrete® GL 27 the ideal admixture for the ready-mix concrete industry.

The ability to work with a very low water/cement ratio and still obtain extended slump retention, allows for the manufacture of high-quality concrete.

CHARACTERISTICS / ADVANTAGES

- Self-compacting concrete.
- Concrete with the lowest water/cement ratio.
- Reduced risk of segregation or bleeding.
- Low vibration time required even in case of highly reinforced concrete.

Compared to traditional superplasticisers, the addition of Sika® ViscoCrete® GL 27 reduces risks of retempering concrete on the job site with additional water and improves the engineering properties of concrete i.e. early and ultimate strengths modulus of elasticity, bond strength to steel, depths of carbonation, impermeability, resistance to chemical aggressive agents, shrinkage and creep.

APPROVALS / STANDARDS

Meets ASTM C494 requirements for Type A and Type F and it is also compatible with all cements meeting the ENV 934-2 and ASTM standards. BS 5075 Pt 3.

PRODUCT INFORMATION

Packaging	Sika® ViscoCrete® GL 27 is available in 210 litre drums, 1000 litre IBC's or in bulk.
Appearance / Colour	Brownish liquid
Shelf Life	12 months in closed container, when stored correctly
Storage Conditions	Store Sika® ViscoCrete® GL 27 in tightly closed containers at moderate temperatures not below 5°C. If frozen, thaw at approximately 30°C and agitate until completely reconstituted.
Density	1.020 -1.090
pH-Value	5.0 – 7.0
Total Chloride Ion Content	“Chloride Free” to EN 934-2

APPLICATION INFORMATION

Recommended Dosage	The normally recommended dosage rate is approximately: 1 litre per 100kg of binder. Other dosages (0.8% - 2.0% per 100kg of binder) may be recommended in special cases according to the specific site conditions.
Dispensing	Sika® ViscoCrete® GL 27 is a ready-to-use admixture to be added to the concrete mix as a separate component. Optimal mixing water reduction is obtained if Sika® ViscoCrete® GL 27 is poured into the concrete mix right after the addition of the first 50-70% of the mixing water, i.e. when all the solids are wetted. Avoid adding the admixture to the dry aggregates.

SYSTEM INFORMATION

Compatibility

Sika® ViscoCrete® GL 27 is not compatible with Sikament RB superplasticizers.

Sika® ViscoCrete® GL 27 is suitable for mixes containing:

- Microsilica (Silica Fume)
- Fly Ash (PFA)
- GGBS (ground granulated blast furnace slag)

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 detailed information please refer to the product Safety Data Sheet (SDS).

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.

Sika South Africa (Pty) Ltd

9 Hocking Place,
Westmead, 3608
South Africa
Phone +27 31 792 6500
www.sika.co.za



Product Data Sheet

Sika® ViscoCrete® GL 27
March 2025, Version 02.01
021301000000002579

SikaViscoCreteGL27-en-ZA-(03-2025)-2-1.pdf