

## PRODUCT DATA SHEET

# SikaControl®-50 GR

### SHRINKAGE REDUCING ADMIXTURE FOR CONCRETE AND MORTARS

#### DESCRIPTION

SikaControl®-50 GR is a liquid shrinkage reducing admixture used to produce high performance concrete with greatly reduced drying shrinkage.

#### USES

- For the production of High Performance Concrete
- For concrete elements where low drying shrinkage is important (e.g. large areas, such as slabs and concrete floors)
- For self-levelling mortar and concrete
- Prestressed injections

#### CHARACTERISTICS / ADVANTAGES

In a cementitious based mixture (concrete or mortar), shrinkage is attributed to the reduction of the volume of the initially added water of the mixture. This volume reduction takes place due to the consumption of certain water quantity in the hydration process (autogenous shrinkage) and due to the evaporation of a certain water quantity that does not take part into the hydration process from the capillary pores (because of low relative humidity and increased air speed during curing and because of the exothermic hydration reaction itself – drying shrinkage).

The incorporation of SikaControl®-50 GR in the cementitious mix can reduce the surface tension of the water in the capillary pores. This results in the containment of the change of the dimensions of the casted concrete/mortar.

The use of SikaControl®-50 GR attributes the following advantages in the mix:

- Reduction of crack formation
- Reduction of drying shrinkage
- Increased concrete durability

SikaControl®-50 GR does not contain chlorides or any other ingredients which promote the corrosion of steel. It is therefore suitable for use in reinforced and prestressed concrete structures.

#### PRODUCT INFORMATION

Composition	Organic compounds
Packaging	IBC, drums, containers. Bulk supply on demand.
Appearance / Colour	Liquid, colourless
Shelf life	12 months from date of production
Storage conditions	Store in undamaged unopened, original sealed packaging, in dry conditions at temperatures between +5°C and +35°C. Protect from direct sunlight and frost.

Density	~ 0,94 kg/l (at +20 °C)
pH-Value	7,5 - 9,5
Total Chloride Ion Content	Free (EN 934.01)

## TECHNICAL INFORMATION

Concreting Guidance	The standard rules of good concreting practice, concerning production as well as placing, are to be followed. Refer to relevant standards. Fresh concrete must be cured properly.
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## APPLICATION INFORMATION

Recommended Dosage	0,5 - 4,0% by weight of cement
Compatibility	<p>SikaControl®-50 GR may be combined with other Sika products, such as:</p> <ul style="list-style-type: none"> <li>▪ Sika® Plastiment® retarders/plasticizers/superplasticizers</li> <li>▪ SikaPlast® / Sika® ViscoCrete® / Sika® ViscoFlow® superplasticizers</li> <li>▪ SikaFume® HR-E</li> <li>▪ Sikacrete® AR</li> <li>▪ Sika-Aer® Fine</li> </ul> <p>Trials are recommended before combining products.</p>
Dispensing	SikaControl®-50 GR is added to the gauging water at the plant or added on-site into the concrete mixer.
Restrictions	<ul style="list-style-type: none"> <li>▪ When using SikaControl®-50 GR a suitable mix design has to be produced and the local material sources shall be tested.</li> <li>▪ SikaControl®-50 GR shall not be added to dry cement.</li> <li>▪ SikaControl®-50 GR will reduce drying shrinkage, but will not eliminate cracking. The reduction of cracking is primarily dependant on good engineering design that allows for concrete shrinkage by incorporating well designed and properly allocated shrinkage control joints. Proper curing of concrete/mortar based on standing standards is of paramount importance.</li> <li>▪ SikaControl®-50 GR can cause retardation at early strength development, especially when incorporated in high dosages in the mix (&gt; 1% b.w. of cement).</li> <li>▪ It is essential to protect the concrete produced with Sika® Control-50 GR from water evaporation / premature drying during the crucial early age period. These protective measures during curing can be extended upon the supervisor's decision and depending on the prevailing conditions on site. We recommend the use of Sika® Antisol® curing compounds for this purpose. Refer to the Product Technical Data sheets for further information. It might be necessary to use additional water evaporation protective measures (e.g. hessian or plastic sheets). The selection of protective measurements lies on the supervising engineer who should take into account also the prevailing situation (e.g. size of elements, weather conditions, e.t.c.) and determine the duration of this period.</li> <li>▪ According to the New Greek Concrete Technology Regulation of 2016 (paragraph B1.5.8) "If the total amount of liquid additives exceeds 3liters/m<sup>3</sup>, the amount of water contained therein will be taken into account in the water / cement ratio". Therefore, in such cases, please abide with the above regulation or/and with other national regulations valid in the area where construction takes place or according to the specification.</li> <li>▪ Final shrinkage is a result of the mix design and other parameters.</li> <li>▪ Before application, suitability tests must be performed.</li> </ul>

## 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 Safety Data Sheet (SDS) 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.

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