

## PRODUCT DATA SHEET

# Sika® ViscoCrete® TS-100

Ultra-High Performance Superplasticizer for Precast Concrete & Semi-Dry Concrete Application

### DESCRIPTION

Sika® ViscoCrete® TS-100 is a third generation superplasticizer for high performance concrete. It was particularly formulated for the production of precast tunnel segments, targeting the high demands regarding slump retention, very low water/binder ratios, use of double or triple blend mixes (cement, GGBFS, PFA and/or microsilica) and high degree of compaction. Sika® ViscoCrete® TS-100 is especially suitable for use in Steel Fiber Reinforced Concrete (SFRC) and concrete mixes containing polypropylene fibers for fire protection as commonly used in precast concrete tunnel segment production. Suitable for use in hot and tropical climatic conditions.

### USES

Sika® ViscoCrete® TS-100 facilitates extreme water reduction, with optimum cohesion and workability as required, just by adjusting the dosage. It is used mainly to the following types of concrete:

- Precast concrete tunnel segments
- Precast concrete in general
- Pre-stressed concrete elements
- Post-tensioned concrete bridge segments
- Fast track concrete
- In situ concrete that requires fast stripping time
- Mixes containing Steel Fiber Reinforced Concrete (SFRC), synthetic fibers and polypropylene fibers for structural and / or fire resistant concrete
- Concrete with high water reduction that requires high workability, slump retention along with high early strength development
- Blocks and Interlocks

### CHARACTERISTICS / ADVANTAGES

Sika® ViscoCrete® TS-100 works as a powerful superplasticizer acts by different mechanisms. Through surface adsorption and steric hindrance effects separating the binder particles which results in higher dispersion allows the possibility to work with very low water/binder ratios by avoiding the high stickiness common to such kinds of mix. The following properties are achieved:

- Easier to control during casting due to sufficient retention period and high early strength development
- Extremely high water reduction (resulting in high density and strengths) even in double or triple blend mixes (e.g. cement, GGBS, and silica fume)
- Low w/b ratio leads to very low water permeability, and chloride migration
- Increased high early strength and strength development even with the use of low cement content mixes
- Improved shrinkage and creep behavior
- Excellent flow ability resulting in minimal placing and compacting efforts leading to much denser concrete
- Does not contain chlorides or other steel corrosion promoting ingredients therefore may be used for reinforced and pre-stressed concrete construction

### APPROVALS / CERTIFICATES

Sika® ViscoCrete® TS-100 follows the requirements of ASTM C494; Type F and EN 934-2

## PRODUCT INFORMATION

Composition	Aqueous solution of modified polycarboxylates, co-polymers	
Packaging	1000 L flowbin	
Appearance / Colour	Light brown liquid	
Shelf life	12 months from date of production if stored properly	
Storage conditions	Store in undamaged, unopened, original sealed packaging in dry conditions at temperatures between +5°C and +45°C. Protect from direct sunlight and frost	
Density	~1.08 kg/l	
Total chloride ion content	Nil	(EN 934-2)

## TECHNICAL INFORMATION

Concreting guidance	<p>The standard rules of good concreting practice for production and placing must be observed when using Sika® ViscoCrete® TS-100 in concrete. Refer to relevant standards.</p> <p>Fresh concrete must be cured properly especially at high temperatures in order to prevent plastic and drying shrinkage. Use Sika® Antisol® products as a curing agent or apply wet hessian.</p>
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## APPLICATION INFORMATION

Recommended dosage	<p>High flow concrete: 0.4 - 1.5 % by weight of binder Self Compacting Concrete (SCC): 1.6 - 2.2 % by weight of binder Dosages outside of these ranges can be used depending on the mix design, raw materials, climatic conditions and concrete requirements. Trial mixes must be performed to establish the exact dosage rate required.</p>
Compatibility	<p>Sika® ViscoCrete® TS-100 may be combined with all types of Portland cement and the following Sika products:</p> <ul style="list-style-type: none"><li>SikaPump®</li><li>Sika® FerroGard®-901</li><li>SikaFume®</li><li>SikaFiber®</li><li>Sika Aer®</li><li>Sika® Stabilizer</li><li>Sika®-1 WT</li></ul> <p>We recommend to perform trial mixes to establish the required performance when combined with the above products. Please consult our Sika Technical Department.</p>
Dispensing	<p>Sika® ViscoCrete® TS-100 is added to the gauging water or simultaneously poured with it into the concrete mixer at the batching plant. Do not add Sika® ViscoCrete® TS-100 directly to the dry mix. For optimum utilization of its high water reduction property we recommend thorough mixing at a minimal wet mixing time of 60 seconds. The addition of the remaining gauging water (to fine tune concrete consistency) may only be started after two-thirds of the wet mixing time to avoid surplus water in the concrete.</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.

## ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets before using any products. 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.

## IMPORTANT CONSIDERATIONS

When using Sika® ViscoCrete® TS-100 a mix design must be selected for the local material sources used and trial mixes performed to verify suitability. If frozen and/or if precipitation has occurred, it may only be used after thawing slowly at room temperature and intensive mixing.

Sika® ViscoCrete® TS-100 should not be added to dry cement.

Before pouring, suitability tests on the fresh concrete must be carried out. Due to the extended workability take special care that formwork is properly installed and secured. In case the setting time of concrete is extended, if cured properly, other properties may not be affected and higher ultimate strength is visualized. Sika® ViscoCrete® products are not compatible with admixtures based on sulfonated naphthalene or melamine.

## 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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ISO 9001: Sika UAE LLC,  
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Sika Qatar LLC  
ISO 14001: Sika UAE LLC,  
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All products are supplied  
under a management  
system certified to conform  
to the requirements of the  
quality, environmental and  
occupational health &  
safety standards ISO 9001,  
ISO 14001 and OHSAS  
18001.

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