

## PRODUCT DATA SHEET

# Sika® ViscoCrete® ACE 520

(formerly MGlenium ACE 520)

HIGH-PERFORMANCE POLYCARBOXYLATE ETHER (PCE) SUPERPLASTICIZERS FOR THE PRECAST CONCRETE INDUSTRY

### DESCRIPTION

Sika® ViscoCrete® ACE 520 (Admixture Controlled Energy) consists of a range of innovative superplasticizers based on newly developed polycarboxylate ether polymer. The particular molecular configuration of Sika® ViscoCrete® ACE 520 accelerates the cement hydration by exposing increased surface of the cement grains to react with water. As a result, it is possible to obtain earlier development of the heat of hydration, rapid development of the hydration products and, as a consequence, higher strengths at very early age. The polymer structure of Sika® ViscoCrete® ACE 520 is specially designed to improve the rheology of precast concrete, making it very flowable and low viscous even at very low water/cement ratios, without increasing stickiness. Robustness is a distinctive feature of the precast concrete produced with Sika® ViscoCrete® ACE 520. Suitable for use in hot and tropical climatic conditions.

### USES

- Sika® ViscoCrete® ACE 520 is suitable for making precast concrete elements with highly-fluid concrete without segregation but with low water cement ratio, consequently, high early and final strengths.
- Sika® ViscoCrete® ACE 520 may be used in combination with Sika® Stabilizer for producing advanced self-compacting concrete like Smart Dynamic Concrete (SDC, latest V-type SCC), without the aid of vibration, for economic, ecological and ergonomic precast production.

### FEATURES

Sika® ViscoCrete® ACE 520 offers the following benefits for the precast concrete industry:

- Production of highly flowable self-compacting concrete having a low water cement ratio along with an optimal rheology
- Enhanced robustness and consistency in concrete quality with low stickiness
- Environmentally friendly, CO<sub>2</sub> reduced mix design optimization
- Elimination of heat curing
- Improved surface appearance
- Durable precast concrete elements as per EN 206-1
- Increased productivity

### CERTIFICATES AND TEST REPORTS

Sika® ViscoCrete® ACE 507 M meets the requirements of ASTM C-494 Type A, E & F and BS EN 934-2

## PRODUCT INFORMATION

<b>Composition</b>	Aqueous solution of modified polycarboxylates, co-polymers	
<b>Packaging</b>	210 L drum, 1000 L flowbin or bulk supply in tanker	
<b>Appearance and colour</b>	Colorless to brown liquid	
<b>Shelf life</b>	12 months from date of production if stored properly	
<b>Storage conditions</b>	Store in undamaged, unopened, original sealed packaging in dry conditions at temperatures between +5 °C and +45 °C. Protect from direct sunlight. Mix well before use.	
<b>Density</b>	~1.08 kg/l (+25 °C)	
<b>pH-Value</b>	5–8	
<b>Total chloride ion content</b>	Nil	(BS EN 934-2)

## TECHNICAL INFORMATION

<b>Concreting guidance</b>	The standard rules of good concreting practice for production and placing must be observed when using Sika® ViscoCrete® ACE 520 in concrete. Refer to relevant standards. 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.
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## APPLICATION INFORMATION

<b>Recommended dosage</b>	0.3 - 3.0 L per 100 kg of total binder. Trial mixes must be performed to establish the exact dosage rate as per the project requirements.
<b>Compatibility</b>	<p>Sika® ViscoCrete® ACE 520 is suitable for mixes containing all types of cement and supplementary cementitious materials such as: Microsilica (Silica Fume), Fly Ash (PFA), GGBS (Ground Granulated Blast Furnace Slag) and the following Sika products:</p> <ul style="list-style-type: none"><li>▪ SikaPump®</li><li>▪ Sika® FerroGard®</li><li>▪ SikaFume®</li><li>▪ SikaFiber®</li><li>▪ Sika® Aer</li><li>▪ Sika® Stabilizer</li><li>▪ SikaControl®</li></ul> <p>We recommend to perform trial mixes to establish the required performance when combining Sika® ViscoCrete® ACE 520 with the above products or other admixtures. Please consult our Sika Technical Department for further assistance.</p>
<b>Dispensing</b>	Sika® ViscoCrete® ACE 520 is a ready-to-use admixture to be added to the concrete as a separate component. Optimal result is obtained if Sika® ViscoCrete® ACE 520 is poured into the concrete mix right after the addition of the first 80 % of the mixing water, i.e. when all solids are wetted. Avoid adding the admixture to the dry aggregates.

## 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.

## IMPORTANT CONSIDERATIONS

When using Sika® ViscoCrete® ACE 520 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® ACE 520 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 may be achieved.

**Sika® ViscoCrete® products are not compatible with admixtures based on sulfonated naphthalene or melamine.**

When accidental overdosage occurs, bleeding and segregation of the concrete and retardation of initial set may be observed.

## ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

## 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, 14001, 45001 – SGS  
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ISO 9001, 14001 – SGS  
Sika Saudi Arabia Limited  
ISO 9001, 14001 – TÜV  
Sika MB Construction Chemicals LLC  
Sika Construction Chemicals for Manufacturing LLC  
ISO 9001 – LMS  
Sika MB LLC

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 ISO 45001.



### Product Data Sheet

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