

PRODUCT DATA SHEET

Sika® ViscoCrete® SM-4110

HIGH RANGE SUPERPLASTICIZER AND SELF-COMPACTING

CONCRETE (SCC) ADMIXTURE

DESCRIPTION

Sika® ViscoCrete® SM-4110 is a third generation superplasticizer for concrete. It is particularly developed for the production of high flowability and self-compacting concrete with exceptional slump retention. Suitable for tropical and hot climatic conditions.

USES

Sika® ViscoCrete® SM-4110 facilitates extreme water reduction, excellent flow ability with optimum cohesion, high early strength development, impressive self-compacting behavior and extended slump life. Sika® ViscoCrete® SM-4110 is mainly used for the following applications:

- Production of site mixed and ready-mix concrete
- During hot weather production of concrete with extended transportation or placing times
- Concrete requiring retained workability for extended periods
- Concrete with low water cement ratio
- Concrete placing in congested steel reinforcement
- Depends on dosage rate, used for high flowable and self-compacting concrete (SCC)
- Slim elements requiring a high standard of surface finish
- High performance / high strength concrete

CHARACTERISTICS / ADVANTAGES

Sika® ViscoCrete® SM-4110 acts by surface absorption on the cement particles producing steric hindrance as well as electrostatic repulsion between cement particles which results in higher dispersion, flow and retention.

Sika® ViscoCrete® SM-4110 provides the following beneficial properties:

- Highly flowable and self self-compacting concrete (SCC)
- High impermeability and strength development due to extremely high water reduction
- Improved shrinkage and creep characteristics
- Minimal placing and compacting efforts
- Slower rate of carbonation and chloride ingress specially when silicafume or pozzolanic products are used
- Excellent cost / performance ratio
- 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® SM-4110 follows the requirements of ASTM C494; Type G and EN 934-2

PRODUCT INFORMATION

Composition	Aqueous solution of modified polycarboxylates, co-polymers
Packaging	1000 L flow bins. Bulk supply in tanker trucks available on request.
Appearance / Colour	Light yellow 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 (25 °C)	
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® SM-4110 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>0.7 - 1.5 % by weight of binder</p> <p>Higher dosages by weight of binder can be used depending on the mix design, raw materials, climatic conditions and concrete requirements.</p> <p>Trial mixes must be performed to establish the exact dosage rate required.</p>
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Compatibility	<p>Sika® ViscoCrete® SM-4110 may be combined with all types of Portland cement, concretes containing pozzolanic materials such as; GGBS, PFA , micro-silica and the following Sika products:</p> <ul style="list-style-type: none"> ▪ SikaPump® ▪ Sika® FerroGard®-901 ▪ SikaFume® ▪ SikaFiber® ▪ Sika Aer® ▪ Sika® Stabilizer ▪ Sika®-1 WT <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>
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Dispensing	<p>Sika® ViscoCrete® SM-4110 is added to the gauging water or simultaneously poured with it into the concrete mixer at the batching plant. Do not add Sika® ViscoCrete® SM-4110 directly to the dry mix.</p> <p>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>
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IMPORTANT CONSIDERATIONS

When using Sika® ViscoCrete® SM-4110 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® SM-4110 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. When accidental overdosage occurs bleeding and segregation of the concrete and retardation of initial set will be observed.

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.

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 the exact product data and uses.

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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ISO 9001: Sika UAE LLC,
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ISO 14001: Sika UAE LLC,
Sika Gulf B.S.C. (c),
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OHSAS: 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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