

PRODUCT DATA SHEET

Sika® ViscoCrete®-205 PC

HIGH RANGE SUPERPLASTICIZER FOR ULTRA HIGH PERFORMANCE CONCRETE (UHPC)

DESCRIPTION

Sika® ViscoCrete®-205 PC is a polycarboxylate based superplasticizer developed particularly for use in UHPC to give high strength development of high specification grade concrete mixes. Sika® ViscoCrete®-205 PC is suitable for use in concrete mixes incorporating pozzolanic materials such as GGBS, PFA and microsilica. Suitable for use in hot and tropical climatic conditions.

USES

Sika® ViscoCrete®-205 PC is mainly used for the following applications:

- Production of UHPC
- During hot weather production of concrete with extended transportation or placing times
- Concrete requiring retained workability
- Concrete with low water binder ratio
- White cement based products applications
- Concrete placing in congested steel reinforcement
- Depending on dosage rate used; high flow and self-compacting concrete (SCC)
- Slim elements requiring a high standard of surface finish
- High performance / high strength concrete

CHARACTERISTICS / ADVANTAGES

Sika® ViscoCrete®-205 PC acts by surface absorption on the cement particles producing steric hindrance and electrostatic repulsion between cement particles which results in higher dispersion, flow and retention. Sika® ViscoCrete®-205 PC provides the following beneficial properties:

- Powerful plasticising action
- Production of workable concrete at low w/b ratio
- Improved shrinkage and creep characteristics
- Excellent flowability resulting in minimal placing and compacting efforts
- White cement based products applications
- Slower rate of carbonation ingress
- Cost effective, structurally economic
- Higher ultimate strengths allows greater flexibility for engineers to design
- Reduced surface defects so improving aesthetic appearance
- Durable concrete
- Does not contain chlorides or other steel corrosion promoting ingredients

APPROVALS / CERTIFICATES

Sika® ViscoCrete®-205 PC 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 flowbin. Bulk supply in tanker trucks possible on request
Appearance / Colour	Clear to light yellowish
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	~1.10 kg/l (+25 °C)	
Total chloride ion content	Nil	(EN 934-2)

TECHNICAL INFORMATION

Concreting guidance	The standard rules of good concreting practice for production and placing must be observed when using Sika® ViscoCrete®-205 PC 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

Recommended dosage	0.5 - 1.6 % by weight of binder Dosages by weight of binder outside of this range 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.
Compatibility	Sika® ViscoCrete®-205 PC may be combined with all types of Portland cement (OPC and SRC), concretes containing pozzolanic materials such as; GGBS, PFA, micro-silica and the following Sika products: SikaPump®, Sika® FerroGard®-901, SikaFume®, SikaFiber®, Sika Aer®, Sika® Stabilizer, Sika®-1 WT, Sika® WT-10 We recommend to perform trial mixes to establish the required performance when combining Sika® ViscoCrete®-205 PC with the above products or other admixtures. Please consult our Sika Technical Department.
Dispensing	Sika® ViscoCrete®-205 PC is added to the gauging water or simultaneously poured with it into the concrete mixer at the batching plant. Do not add Sika® ViscoCrete®-205 PC 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.

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®-205 PC 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®-205 PC 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.

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.

SIKA NORTHERN GULF

Bahrain / Qatar / Kuwait
Tel: +973 177 38188
sika.gulf@bh.sika.com
gcc.sika.com

SIKA SOUTHERN GULF

UAE / Oman / SIC
Tel: +971 4 439 8200
info@ae.sika.com
gcc.sika.com

SIKA SAUDI ARABIA

Riyadh / Jeddah / Dammam
Tel: +966 11 217 6532
info@sa.sika.com
gcc.sika.com



ISO 9001: Sika UAE LLC,
Sika Gulf B.S.C. (c),
Sika Saudi Arabia Co. Ltd,
Sika Qatar LLC
ISO 14001: Sika UAE LLC,
Sika Gulf B.S.C. (c),
Sika Saudi Arabia Co. Ltd
OHSAS: Sika UAE LLC,
Sika Gulf B.S.C. (c)

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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