

PRODUCT DATA SHEET

SikaTard® HCA 10

(formerly MasterRoc® HCA 10)

Cement hydration control system for wet and dry shotcrete, grouting and cement injection

DESCRIPTION

SikaTard® HCA 10 is a liquid, non-chloride chemical admixture which controls the dynamics of cement hydration. It delays hydration by suspending the hydration process and enabling re-activation hours or even days later with no loss of quality in the hardened sprayed concrete.

When dispensed into wet or dry mixes at the batching plant it fully stabilizes the hydration process by forming a protective barrier around the cement particles. SikaTard® HCA 10 can be used with all types of cement minerals (C₃S, S₃A, C₂S, C₄AF and gypsum).

In order to re-activate the hydration process and accelerate the strength gain in mixes stabilized with SikaTard® HCA 10, Sika® Sigunit® alkali-free accelerator is added at the nozzle or injection point. Suitable to use in hot and tropical climatic conditions.

USES

- Tunneling and mining.
- Temporary and permanent support.
- Slope stabilization.
- Annulus grouting (TBM).
- Cementitious injection systems.

FEATURES

With the use of SikaTard® HCA 10, wet and dry concrete mixes can be kept workable for up to 3 days. This provides considerable benefits in the batching and utilization of the concrete.

- Fully flexible delivery options for sprayed concrete mixes.
- No cleaning of pumps or pipes during work interruptions.
- Complete use of wet and dry mixes – no waste disposal.
- Time and cost saving.

In addition to these benefits related to its function as a hydration control system, it also provides considerable reduction of rebound and dust.

PRODUCT INFORMATION

Packaging	Drums, 1,000 L flowbin or in bulk.
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 +50°C.
Appearance and colour	Red to pink liquid
Density	~1.08 kg/l (+25°C)
Total chloride ion content	Nil (EN 934)

APPLICATION INFORMATION

Recommended dosage	0.2 - 1.0 % by weight of binder The dosages by weight of binder can be used depending on the mix design, raw materials, climatic conditions and concrete requirements (targeted open time). Trial mixes must be performed to establish the exact dosage rate required. Please consult our Sika Technical Department.
Dispensing	<p>Wet-mix sprayed concrete: Premix aggregates with cement and 1/2 of the mixing water. Under continuous mixing, add SikaTard® HCA 10 and a high-performance superplasticizer, premixed with the remaining 1/2 of the mixing water, or after all the water has been added. Normal mixing time is sufficient. To avoid slump loss, the recommended minimum water content is 200 l/m³. In the event of unexpected delays, a later addition of 0.2 – 1 % of SikaTard® HCA 10 is possible to prolong storage time for a few hours.</p> <p>Dry-mix sprayed concrete: Premix aggregates with cement. The water content should be between 3 – 6 %. Slowly add manually or with a dosing device the necessary quantity of SikaTard® HCA 10 under constant mixing and continue to mix for 2 to 3 minutes. If evenly distributed over dry-mix material (e.g. by spraying), mixing time can be reduced.</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.
- Internal Reference - Version: MBS_CC-UAE/Roc_HCA10/v1/12_13

FURTHER INFORMATION

Example of a typical wet mix design for an open time of 4 – 6 hours

Ordinary Portland Cement	400 kg/m ³
Microsilica	30 kg/m ³
Aggregate 0 - 8mm	1,710 kg/m ³
SikaTard® HCA 10	0.5 – 2.0 kg
Sika® ViscoCrete® super-plasticiser	2.4 – 6.0 kg
w/b ratio	0.45

A mix design must be selected for the local material sources used and trial mixes performed to verify suitability.

IMPORTANT CONSIDERATIONS

- When using SikaTard® HCA 10 a mix design must be selected for the local material sources used and trial mixes performed to verify suitability.
- If frozen, it may only be used after thawing slowly at room temperature and mild mechanical agitation.
- The addition of SikaTard® HCA 10 to the fresh mix is ideal. However, it can be added until up to 30 minutes after mixing of the dry-mix material without any problems.

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 – TÜV
- Sika MB Construction Chemicals LLC
- Master Builders Solutions 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.



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