BUILDING TRUST

PRODUCT DATA SHEET

Sika® ViscoCrete® ACE 456

(formerly MasterGlenium® ACE 456)

Essential component of ZERO ENERGY SYSTEM – A new generation of high-performance polycarboxylate ether (PCE) superplasticizers for the Precast industry.

DESCRIPTION

Sika® ViscoCrete® ACE 456 (Admixture Controlled Energy) consists of a range of innovative superplasticizers based on newly developed polycarboxylate ether polymers. The particular molecular configuration of **Sika® ViscoCrete® ACE 456** 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 456** 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 456**.

USES

Sika® ViscoCrete® ACE 456 is suitable for making precast concrete elements with highlyfluid concrete without segregation but low water cement ratio and, consequently, high early and final strengths. Sika® ViscoCrete® ACE 456 may be used in combination with SikaStabilizer® for producing advanced selfcompacting 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 456 offer the following benefits for the precast concrete industry:

- Production of highly flowable, robust selfcompacting concrete having a low water cement ratio along with an optimal rheology.
- Enhanced robustness and consistency in concrete quality with low stickiness.
- Environmentally friendly, CO2 reduced mixdesign optimization.
- Elimination of heat curing.
- Improved surface appearance.
- Durable precast concrete elements as per EN 206-1.
- Elimination of the energy required for placing, compaction and curing.
- Optimization of the curing cycles by reducing curing time or curing temperature.
- Increased productivity.

CERTIFICATES AND TEST REPORTS

EN EN934-2 and ASTM C494 Type A, E & F.

PRODUCT INFORMATION

Packaging	Sika® ViscoCrete® ACE 456 is available in 1000 litre containers or in bulk.
Shelf life	If stored in unopened containers according to manufacturer's instructions, the shelf life is 1 year.
Storage conditions	Sika® ViscoCrete® ACE 456 must be stored in a place where the temperature does not drop below 5°C. In case of freezing, warm up and homogenise the admixture solution before using. occurrence of a surface layer with Sika® ViscoCrete® ACE 456 is normal and will have no effect on the performance of the product.
Appearance and colour	Whitish to light brownish liquid
Density	1.060 typical
pH-Value	4-7
Total chloride ion content	<0.1%
Equivalent sodium oxide	< 3%
Compatibility	Sika® ViscoCrete® ACE 456 is compatible and recommended for use with: ▪ SikaStabilizer® to modify the viscosity of SCC. ▪ SikaControl® AER, air entraining admixture, to improve freeze-thaw resistance (exposure class XF1 to XF4, EN 206-1) ▪ Sika Separol®, demoulding agent for easy formwork removal and improved finish. ▪ Sika Antisol®, curing compound for highly efficient water retention and friendly use. Sika® ViscoCrete® ACE 456 is not compatible with all admixtures of Sikament® RB series.

APPLICATION INFORMATION

Recommended dosage	The recommended dosage rate is **0.3 to 2.0 liters per 100 kg** of the binder. Other dosages may be used in special cases according to specific production conditions. In this case please consult our Technical Services Department.
Dispensing	Sika® ViscoCrete® ACE 456 is a liquid admixture to be added to the concrete during the mixing process. The best results are obtained when the admixture is added to the mixing water that is used for the concrete mix after all the other components are already in the mixer and after the addition of at least 80% of the total water. The water content is adjusted to obtain the desired consistence or workability. Optimal water reduction is obtained if the Sika® ViscoCrete® ACE 456 is poured into the concrete mix right after the addition of the initial 80-90% of mixing water. Avoid adding the admixture to the dry aggregates. After adding Sika® ViscoCrete® ACE 456 admixture provide enough mixing time to secure a homogenous dispersion. Continue mixing and adjust the water content to obtain the required workability.

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.

FURTHER INFORMATION

No special requirements must be observed while the product is used. Protection gloves and glasses are recommended. Do not eat, drink or smoke during the application. Sika® ViscoCrete® ACE 456 is not-flammable, non-toxic or irritant and are not subject to special transport requirements.

ECOLOGY, HEALTH AND SAFETY

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

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