BUILDING TRUST

PRODUCT DATA SHEET

Sika® ViscoCrete® SKY 8851

(formerly MasterGlenium® SKY 8851)

HIGH RANGE WATER REDUCING ADMIXTURE PRIMARLY DEVELOPED FOR CONCRETE INDUSTRY WHERE SLUMP RETENTION, HIGH STRENGTH AND DURABILITY ARE REQUIRED IN HOT CLIMATE

DESCRIPTION

Sika® ViscoCrete® SKY 8851 is a high range water reducing admixture, based on chains of modified polycarboxlic ether, primarily developed for concrete industry where slump retention, high strength and durability are required in hot climate. The ability to work with very low water/cement ratio and still obtain extended slump retention allows for the manufacture of high quality concrete as the risk of addition of mixing.
What differentiates from the traditional high range water reducing with good workability is unique mechanism of action that greatly improves the effectiveness of cement dispersion. Traditional high range water reducing like melamine and naphthalene sulfonates are based on polymers which are absorbed by the cement granules. They wrap around the granules surface areas at the very early stage of the concrete mixing process. The sulphonic groups of the polymer chains increase the negative charge of the cement particle surface and disperse these particles by electrical repulsion.
This electrostatic mechanism causes the cement paste to disperse and has the positive consequence of requiring less mixing water to obtain a given concrete workability. Hydration however starts as soon as the cement particles get in contact with mixing water. The rapid growth of hydration crystals will change the surface mechanical of the particles and thus of set the free dispersion of them. Sika® ViscoCrete® SKY 8851 has a different chemical structure from the traditional high range water reducing. It consists of a carboxylic ether polymer with long side chains. At the beginning of the mixing process it initiates the same electrostatic dispersion mechanism as the traditional high range water reducing, but the side chains linked to the polymer backbone generate a steric hindrance which greatly stabilize the cement particles ability to separate and disperse. With this process, flowable concrete with greatly reduced water content is obtained. The alkalinity created by the cement paste allows the polymers of Sika® ViscoCrete® SKY 8851 to “open up and progressively release” many additional polymers chains that will prevent the early flocculation or stiffening of the mix. The mechanism allows to obtain, compared to traditional retarding high water reducing admixtures, considerably longer workability, reduction of mixing water content and higher early strengths.
Sika® ViscoCrete® SKY 8851 meets ASTM C494/C494M requirements for Type F and it is also compatible with all cements meeting the ASTM standards.

USES

Sika® ViscoCrete® SKY 8851 is especially suitable for concrete used in the construction which requires good workability, high early and final strengths, such as:
- Production of load bearing precast elements (e.g. bridge girders, piles, concrete housing).
- Self compacting concrete for precast concrete.
- Low slump concrete.
- Structures constructed using travelling forms and slip forms.
- Hot weather concreting.
- Insitu casting of structural elements.

FEATURES

- No segregation or bleeding.
- Low vibration time required even in case of high reinforced concrete.
- Excellent surface appearance.
- Reduces risks of retempering concrete on job site with additional water and improves the engineering properties of concrete like early and ultimate strengths, modulus of elasticity, bond strength to steel, depths of carbonation, impermeability, resistance to chemical aggressive agents, shrinkage and creep.

PRODUCT INFORMATION

Composition	Aqueous solution of modified polycarboxylate copolymers
Packaging	205 L drums
Shelf life	12 months from date of production if stored properly in undamaged, unopened, original sealed packaging.
Storage conditions	Store in dry conditions at temperatures between +5 °C and +35 °C. Protect from direct sunlight and frost.
Appearance	Liquid

TECHNICAL INFORMATION

Concreting guidance	The standard rules of good concreting practice, concerning production and placing, are to be followed. Laboratory trials before concreting on site are strongly recommended when using a new mix design or producing new concrete components. Fresh concrete must be cured properly and as early as possible.

APPLICATION INFORMATION

Recommended dosage	0.5 – 1.5 L per 100 Kg of cementitious. Other dosages may also be used depending on the specific working conditions. Trial mixes should be made with job materials to determine the optimum dosage required for a specified job requirement.
Compatibility	Sika® ViscoCrete® SKY 8851 may be combined with the following products: ▪ Sika® Plastiment® Series ▪ SikaPlast® Series ▪ Sika Viscoflow® Series ▪ SikaFume® ▪ SikaFiber® Do not use viscocrete or viscoflow series combined with sikament series. To produce flowing and or self-compacting concrete, special concrete mix design is required. Pre-trials are recommended and mandatory if combinations with the above products are required. Please consult to our Technical Service Department.

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.

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.

APPLICATION INSTRUCTIONS

APPLICATION

Sika® ViscoCrete® SKY 8851 is a ready-to-use admixture to be added to the concrete mix. Optimal mixing is obtained if Sika® ViscoCrete® SKY 8851 is poured into the concrete mix right after the addition of the first 80% of the mixing water. Avoid adding the admixture to the dry aggregates. A separate dispenser and feed line must be used.

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.

PT. Sika Indonesia Head Office and Manufacturing
Jl. Raya Cibinong-Bekasi Km.20
Limusnunggal-Cileungsi
Bogor 16820-Indonesia
Tel. +62 21 8230025, Fax +62 21 8230026