BUILDING TRUST

PRODUCT DATA SHEET

Sika® ViscoCrete® SKY 8514

High Performance super plasticiser based on PCE (polycarboxylic ether) for Concrete

DESCRIPTION

Sika® ViscoCrete® SKY 8514 is an economical admixture based on modified polycarboxylic ether. The product has been primarily developed for applications in ready mix and site-batched concrete. Sika® ViscoCrete® SKY 8514 is specially designed to allow considerable reduction of mixing water while maintaining control on extend of set retardation. Sika® ViscoCrete® SKY 8514 is free of chloride & low alkali. It is compatible with all types of cements.

USES

- Ready mixed concrete
- Long-distance transporting
- Pumped concrete
- High workability without segregation or bleeding
- High performance concrete for durability
- Congested/complex reinforced sections
- Mixes requiring >20% water reductions

CHARACTERISTICS / ADVANTAGES

- Good dispersion even in mixes with high fines
- High workability for longer periods
- Lower pumping pressure
- Resistance to segregation even at high workability
- Extended setting with longer workability
- Reduced water content for a given workability
- Higher ultimate strengths
- Increased ease in finishing concrete

APPROVALS / STANDARDS

- ASTM C-494 Type A, D, and G
- BS 5075 Part 1

PRODUCT INFORMATION

Chemical Base	Aqueous solution of modified Polycarboxylate co-polymers
Packaging	05 ltr jerry can 20 ltr plastic can 200 ltr drum 1000 ltr IBC Bulk supply in tanker is possible on demand
Appearance / Colour	Clear slightly Yellowish to Reddish brown liquid
Shelf Life	12 months from date of production if stored in unopened, undamaged and original sealed packaging.
Storage Conditions	The product must be stored properly in undamaged, unopened original sealed packaging in dry conditions at temperatures between +5° C and +35° C. Protect from direct sunlight and frost.
pH-Value	$\geq$ 4

Total Chloride Ion Content	Nil (EN 934-2)
Specific gravity	1.06 ± 0.02

APPLICATION INFORMATION

Recommended Dosage	Optimum dosage of Sika® ViscoCrete® SKY 8514 should be determined with trial mixes. As a guide, a dosage range of 800ml to 1800 ml per 100kg of cementitious material is normally recommended. Because of variations in concrete materials, job site conditions, and/or applications, dosages outside of the recommended range may be required. **Effects of Over Dosage** A severe over-dosage of Sika® ViscoCrete® SKY 8514 can result in the following: ▪ Reduced permeability ▪ Long extension of initial and final set ▪ Increase in air entrainment ▪ Bleed/segregation of mix A slight overdosing may not adversely affect the ultimate strength of the concrete and can achieve higher strengths than normal concrete, provided it is properly compacted and cured. Due allowance should be made for the effect of fluid concrete pressure on form work, and stripping times should be monitored.
Compatibility	Sika® ViscoCrete® SKY 8514 is compatible with most of the products under the MasterPozzolith & MasterSet series (formerly known as POZZOLITH) including MasterSet RT 55. Use MasterMatrix 2 as viscosity modifying agent in self compacting concrete. Sika® ViscoCrete® SKY 8514 is not compatible with Melamine or Naphthalene based admixtures and should not be used in conjunction in the same mix. Sika® ViscoCrete® SKY 8514 is compatible with lingo-sulphonates and carboxylic acid based plasticiser and retarders and also with most type of air-entrainers, accelerators,retarders, extended set-control admixtures, corrosion inhibitors,and shrinkage reducers. Sika® ViscoCrete® SKY 8514 is also compatible with slag and pozzolans such as fly ash, metakaolin and silica fume.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

FURTHER DOCUMENTS

CHEMISTRY AND MECHANISM OF ACTION

What differentiates Sika® ViscoCrete® SKY 8514 from the traditional superplasticisers is a new, unique mechanism of action that greatly improves the effectiveness of cement dispersion. Traditional superplasticisers based on melamine and naphthalene sulphonates are 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 surfaceand 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.

Sika® ViscoCrete® SKY 8514 has a different chemical structure from the traditional superplasticisers. 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 superplasticisers, but the side chains linked to the polymer backbone generates a steric hindrance which greatly stabilises the cement particles ability to separate and disperse. Steric hindrance provides a physical barrier (alongside the electrostatic barrier) between the cement grains. With this process, flowable concrete with greatly reduced water content is obtained.

CORROSIVITY/ NON- CORROSIVE

Sika® ViscoCrete® SKY 8514 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the manufacture of Sika® ViscoCrete® SKY 8514 admixture. In all concrete application, Sika® ViscoCrete® SKY 8514 admixture will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

WORKABILITY

Sika® ViscoCrete® SKY 8514 ensures that rheoplastic concrete remains workable in excess of 3 hours at +25°C. Workability loss is dependent on temperature,

and on the type of cement, the nature of aggregates, the method of transport and initial workability. It is strongly recommended that concrete should be properly cured particularly in hot, windy and dry climates.

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.

APPLICATION

Sika® ViscoCrete® SKY 8514 is a ready-to-use liquid which is dispensed into the concrete together with the mixing water. The plasticising effect and water reduction are higher if the admixture is added to the damp concrete after 50 to 70% of the mixing water has been added. The addition of Sika® ViscoCrete® SKY 8514 to dry aggregate or cement is not recommended. Thorough mixing is essential and a minimum mixing cycle, after the addition of the Sika® ViscoCrete® SKY 8514, of 60 seconds for forced action mixers is recommended.

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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

Sika Pakistan (Pvt.) Limited
141-CCA Phase IV, DHA
Lahore Punjab 54792
Pakistan
phone: +92 42 3569 4266 - 67
fax: +92 42 3569 4268
http://pak.sika.com/

Sika Pakistan (Pvt.) Limited
141-CCA Phase IV, DHA
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