

## PRODUCT DATA SHEET

# SikaPlast® PH 3109

Polycarboxylic ether based mid-range superplasticizer for the production of high-quality ready-mix concrete

### DESCRIPTION

SikaPlast® PH 3109 is an innovative latest generation mid-range superplasticizer based on polycarboxylic ether (PCE) polymers and is specially engineered for ready-mix concrete.

SikaPlast® PH 3109 is differentiated from conventional superplasticizer, such as those based on sulphonated naphthalene formaldehyde condensate, in that it is based on a unique carboxylic ether polymer with long lateral chains. This greatly improves cement dispersion. At the start of the mixing process the same electrostatic dispersion occurs but the presence of the lateral chains, linked to the polymer backbone, generate a steric hindrance which stabilizes the cement particles capacity to separate and disperse. This mechanism provides flowable concrete with greatly reduced water demand.

Suitable for use in hot and tropical climatic conditions.

### USES

SikaPlast® PH 3109 is used for the production of high-quality concrete. Typical usage include, but not limited to:

- Ready mixed concrete
- High flow concrete
- Concrete with high water reduction
- Slabs
- Foundations
- Walls
- Columns and piers
- Piles
- Bridges and cantilever structures

### FEATURES

SikaPlast® PH 3109 provides the following beneficial properties:

- Substantial improvement in workability without increased water
- Low risk of segregation
- Normal set without retardation (within the dosage limit)
- Improved density and surface finish
- Improved water tightness
- Excellent solution for continuous concrete casting of deep elements
- Does not contain chlorides or other steel corrosion promoting ingredients
- Easier placing and faster strength development

### CERTIFICATES AND TEST REPORTS

SikaPlast® PH 3109 follows the requirements of ASTM C494; Type G and EN 934-2

## PRODUCT INFORMATION

Composition	Aqueous solution of modified polycarboxylates, co-polymers	
Packaging	210 L drums, 1000 L flowbin or bulk supply in tanker	
Appearance and colour	Brown color liquid	
Shelf life	12 months from date of production when stored properly	
Storage conditions	Store in undamaged, unopened, original sealed packaging in dry conditions at temperatures between +5°C and +45°C. Mix well before use.	
Density	~1.04 kg/l (+25 °C)	
pH-Value	3.5 - 7.5	
Total chloride ion content	Nil	(BS EN 934-2)

## TECHNICAL INFORMATION

Concreting guidance	The standard rules of good concreting practice for production and placing must be observed when using SikaPlast® PH 3109 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	The normally recommended dosage rate of SikaPlast® PH 3109 is 0.6 to 2.0 litre per 100 kg of total binder, however site trials should be conducted to determine the optimum dosage required.
Compatibility	<p>SikaPlast® PH 3109 is suitable for mixes containing all types of cement and supplementary cementitious materials such as: Microsilica (Silica Fume), Fly Ash (PFA), GGBS (ground granulated blast furnace slag) and the following Sika products:</p> <ul style="list-style-type: none"><li>▪ SikaPump®</li><li>▪ Sika® FerroGard®</li><li>▪ SikaFume®</li><li>▪ SikaFiber®</li><li>▪ Sika® Aer</li><li>▪ Sika® Stabilizer</li><li>▪ SikaControl®</li></ul> <p>We recommend to preform trial mixes to establish the required performance when combining SikaPlast® PH 3109 with the above products or other admixtures. Please consult our Sika Technical Department.</p>
Dispensing	SikaPlast® PH 3109 is a ready-to-use admixture to be added to the concrete as a separate component. Optimal result is obtained if SikaPlast® PH 3109 is poured into the concrete mix right after the addition of the first 80 % of the mixing water, i.e. when all solids are wetted. Avoid adding the admixture to the dry aggregates.

## 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 SikaPlast® PH 3109 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. SikaPlast® PH 3109 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.

**SikaPlast® products are not compatible with admixtures based on sulfonated naphthalene or melamine.**

## 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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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.



### Product Data Sheet

#### SikaPlast® PH 3109

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