

# BUILDING PRODUCT INFORMATION SHEET

## SikaFume®

### Concrete Additive based on Silica Fume Technology

#### DESCRIPTION

SikaFume® is a concrete additive in powder form, based on silica fume technology.

#### USES

SikaFume® is used in shotcrete, structural concrete, pre-cast concrete and other fields of concrete construction where high demands are imposed on the quality of fresh and hardened concrete.

#### FEATURES

SikaFume® contains extremely fine latently reactive silicic dioxide. The presence of this substance imparts greatly improved internal cohesion and water retention in the fresh concrete. The concrete becomes extremely pliable and pumpability is substantially improved. In the hardened concrete the latently reactive silica fume forms a chemical bond with the free lime ( $\text{CaOH}_2$ ). The additional formation of hydration products results in a significantly denser cement matrix.

With the use of SikaFume® the concrete will show the following properties:

- High stability of green concrete
- Highly increased durability
- Excellent frost and de-icing salt resistance if an air entraining agent is used at the same time
- Increased ultimate strengths
- Increased abrasion resistance
- Increased water tightness
- Increased gas tightness
- Reduced chloride penetration

SikaFume® does not contain any chlorides or other steel corrosion promoting substances, and can therefore be used without any restriction for reinforced and pre-stressed concrete construction.

#### APPROVALS / CERTIFICATES

SikaFume® conforms to EN 13263-1:2005 table 4, ASTM C-1240 and AS/NZ 3582.3/2016.

#### PRODUCT INFORMATION

<b>Product identifier</b>	SikaFume®
<b>Place of manufacture</b>	Overseas
<b>Composition</b>	A blend of latently reactive ingredients.
<b>Packaging</b>	10 kg bags and ~1000 kg bulk bags
<b>Shelf life</b>	18 months shelf life from date of production if stored properly in undamaged, unopened, original sealed packaging.
<b>Storage conditions</b>	Storage in a dry environment, not sensitive to frost.
<b>Appearance and colour</b>	grey powder
<b>Density</b>	~0.65 kg/l
<b>Total chloride ion content</b>	< 0.3 M-%

## TECHNICAL INFORMATION

<b>Concreting guidance</b>	The standard rules of good concreting practice, concerning production and placing, are to be followed. Laboratory trials shall be carried out before concreting on site, especially when using a new mix design or producing new concrete components. Fresh concrete must be cured properly and curing applied as early as possible.
<b>Concrete mix design</b>	When using SikaFume® a suitable mix design has to be taken into account and local material sources shall be tested.
<b>Concrete mixing time</b>	SikaFume® is added with the cement and aggregates at the batching plant before the gauging water. Optimum wet mixing time: 60 seconds. <b>IMPORTANT! 10kg bags of SikaFume® are not soluble and should not be thrown 'whole' into the mix.</b> However, they are designed to be repulpable (break down during wetting and grinding of the paper during the concrete mixing), but some mixes with low water:cementitious ratios and smaller sized aggregates may not develop sufficient mixing energy to fully repulp the bags. It is therefore recommended that the top seal of the bag is torn off each bag and discarded before the remaining bag and contents are added to the mix.

## APPLICATION INFORMATION

<b>Recommended dosage</b>	5 - 15 % by weight of cement.
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## MANUFACTURER AND IMPORTER INFORMATION

<b>Manufacturer information</b>	Address	Sika China Ltd, 28 Jing Dong Road, Suzhou Industrial Park, Suzhou Jiangsu 215121, China
<b>Importer information</b>	Address	Sika (NZ) Limited 85-91 Patiki Road Avondale, Auckland 1026 New Zealand
	Phone number	0800 745 269
	Website	<a href="https://nzl.sika.com/">https://nzl.sika.com/</a>
	Email address	<a href="mailto:info@nz.sika.com">info@nz.sika.com</a>
	NZBN	9429000018791

## BUILDING CODE INFORMATION

<b>Building Code clauses</b>	Note: This product on its own is not within the scope of the NZ Building Code. It is an additive / admixture for use in the manufacture of concrete, to enhance its performance properties in either its plastic or hardened state. When added to concrete that must comply with the NZ Building Code, and it used in accordance with Sika's technical literature, it will contribute to meeting the requirements of the following clauses:  B1 Structure: Performance Clauses B1.3.1, B1.3.2, B1.3.3 (a, b, f, h, m, q) B1.3.4 B2 Durability: Performance clause B2.3.1-(a) not less than 50 years F2 Hazardous Building Materials: Performance clause F2.3.1
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<b>Building Code compliance statements</b>	Performance B1.3.1, B1.3.2, B1.3.3 (a, b, f, h, m, q), B1.3.4: This product meets the requirements of AS1478.1 Chemical Admixtures for Concrete, Mortar and Grout. When added to concrete during the production phase it contributes to the hardened concrete meeting loading requirements arising from self-weight, imposed gravity loads, earthquake, wind impact, and the effects of creep and shrinkage over time.  Performance B2.3.1 (a) 50 years: This product meets the requirements of AS1478.1 Chemical Admixtures for Concrete, Mortar and Grout. When added to concrete, mortar or grout during the manufacturing process it helps the hardened concrete to achieve its durability requirements and to remain
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serviceable for 50 years, or more. According to Sika's "Service Improvement" records, maintained within its ISO9001:2015 Quality Management System, this product has performed successfully since it was introduced in 2012.

Performance F2.3.1: This product meets this requirement when used and applied in accordance with Sika's installation instructions and does not present a health hazard to people occupying or using the building. Refer to the Sika Product Technical Data sheet and product Safety Data Sheet [nzl.sika.com](http://nzl.sika.com) for further information if required

## DESIGN REQUIREMENTS

Design requirements for concrete that contains Sika admixtures, or other concrete additives are the responsibility of the ready mixed concrete producer and/or the concrete design engineer.

## MAINTENANCE REQUIREMENTS

Once added the Sika admixture / additive becomes an integral part of the hardened concrete, mortar or grout. Refer to the supplier of that product for their maintenance instructions.

## BASIS OF PRODUCT DATA

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

## 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.

## 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 the 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. 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.

The building product/building product line is not subject to warning or ban under section 26 of the Building Act 2004.

### Sika (NZ) Limited

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### NZ BUILDING PRODUCT INFORMATION SHEET

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