

PRODUCT DATA SHEET

SikaFiber®-502

Low carbon hooked steel fibers for concrete reinforcement

DESCRIPTION

SikaFiber®-502 steel fibers are made with cold drawn wire, providing high tensile strength and ductility at breakage. SikaFiber®-502 steel fibres are designed specifically for the reinforcement of concrete and mortar. The anchoring system with shaped ends ensures a joint behavior between concrete and fiber, requiring a plastification of the hooks in tension. This ensures a much higher anchorage than that existing by simple friction between the fiber and the matrix. Suitable for use in hot and tropical climatic conditions.

USES

The main uses of SikaFiber®-502 steel fibers are:

- Steel mesh replacement for shrinkage control
- Concrete reinforcement for industrial floors and floors
- Structural concrete reinforcement for static and dynamic applications
- Slabs of industrial floors
- Precast
- Floors slabs without joints

FEATURES

SikaFiber®-502 provides the concrete with a uniform multi-directional reinforcement with following benefits:

- Increases resistance to cracking, ductility, energy absorption and tenacity of concrete
- Improves impact resistance, fatigue resistance and resistance to cut of concrete
- Bypasses joints and cracks to provide more connection strength, resulting in an increase in maximum load capacity, which allows the possible reduction of the concrete section
- Superior mechanical properties of concrete, with greater resistance to bending and traction
- Increased toughness of the concrete, with greater resistance to impacts and punctual efforts
- Reduction of required contraction joints
- It helps to reduce manpower to incorporate concrete than traditional reinforcement
- It is an economic solution of reinforcement
- Easy dosing and mixing at the plant or at the job site without the need for special tools
- Ideal for use in conventional finishes and flat floors

PRODUCT INFORMATION

Fibre type	Low carbon hooked steel fibers
Packaging	25 kg box
Appearance and colour	Grey steel fiber
Shelf life	24 months from date of production if stored properly
Storage conditions	SikaFiber®-502 should be stored in its original tightly closed packaging, indoors and in dry area.

Density	7810 kg/m ³	
Dimensions	Length	50 mm
	Equivalent diameter	1 mm
	Aspect ratio	50
Fibre volume content	3000 kg (measured unidirectional)	
Tensile strength	1200 Mpa	

APPLICATION INFORMATION

Recommended dosage	20 – 40 kg/m ³ , subjected to the project design requirements. Site trials must be carried out to confirm the performance of the fibre and the concrete as per the project requirements.
Dispensing	SikaFiber®-502 fibers can be added to concrete both in plant or on-site. The introduction of the fibers directly onto the concrete mixer truck can be carried out manually or with the help of auxiliary mechanical means (conveyor belt, elevator, injection element, etc.). Fiber should be added gradually to the concrete mix. Additional mixing time for fiber integration is approximately 1 minute per cubic meter. In general, the extra kneading time will be 5 to 6 minutes. For plant addition, SikaFiber®-502 can be distributed on the aggregate conveyor belt, or directly inside the mixer.

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

- For plant addition, do not add the steel fiber as the first component.

ECOLOGY, HEALTH AND SAFETY

- While handling SikaFiber®-502, the usual preventive measures must be taken, e.g. wearing goggles and gloves.
- Wash the hands at the end of the work with SikaFiber®-502.
- Do not eat, drink or smoke during application.

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in the product data sheet. Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0,1 % (w/w).

APPLICATION INSTRUCTIONS

- SikaFiber®-502 steel fibres can be added during or after the concrete dosing.
- A test batch should be carried out to determine the homogeneous mixture.
- For on-site addition, it is recommended that the truck is not loaded more than 85 % of its capacity.
- Devices such as conveyor belts and feeders can be used to add fibers to the mixer hopper and / or mixer truck.
- After adding the fibres, the concrete should be mixed for a sufficient time (75 rotations at a complete mixing speed) to ensure even distribution of the fibers throughout the concrete.
- It is recommended to carry out a visual inspection in order to verify that the mixture is homogeneous. Continue kneading at maximum rotation speed until a perfect distribution is achieved.
- The use of medium or high range water reducers can give an additional advantage.
- Concrete containing SikaFiber®-502 steel fibres can be pumped, skipped or placed directly, using conventional equipment. Ensure suitability of pumping equipment with initial trials, before project application.
- Conventional finishing techniques and equipment can be used with SikaFiber®-502 steel fibres. In some cases an additional float process is advisable, decreasing the angle of the float, which will help to minimise the exposure of the fibres on the surface.

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.



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February 2025, Version 01.01

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