

PRODUCT DATA SHEET

SikaFiber® Force-60

SYNTHETIC MACRO FIBRES FOR CONCRETE AND SHOTCRETE



DESCRIPTION

SikaFiber® Force-60 is a 60 mm long macro synthetic fibre for use in structural concrete and shotcrete.

USES

For most types of in-situ cast structural concrete and sprayed concrete to distribute stresses, increase structural properties or increase abrasion resistance.

Sprayed concrete:

- Excavation stabilisation in tunnelling and mining
- Rock and ground stabilisation
- Temporary stabilisation
- Replacement of steel reinforcement

In-situ cast structural concrete:

- Ground bearing slabs and industrial floors
- Foundations designed with fibre reinforced concrete
- Precast concrete elements
- Concrete applications requiring abrasion resistance

CHARACTERISTICS / ADVANTAGES

General

- Packaged in soluble bags for easy dosing
- Provides better cohesion of the fresh concrete
- Dissipates strains in concrete and prevents structural cracking

Improves characteristics of hardened concrete

- Crack bridging capacity
- Higher flexural and shear strength
- Improves loading capacity and ductility
- Increases abrasion resistance
- Increases resistance to freeze thaw attack

Fibres in reinforced concrete

- Reduces or eliminates the amount of steel reinforcement
- Easier to handle than reinforcement bars and meshes
- No need for cutting or tying
- Reduces construction time
- Homogeneously embedded throughout concrete matrix
- Fills edges, corners and difficult shapes

Compared to steel fibres

- No corrosion stains on surface
- Greater displacement capacity due to higher stresses

APPROVALS / CERTIFICATES

- CE Marking and Declaration of Performance to EN 14889-2 - Fibres for concrete. Polymer fibres.

PRODUCT INFORMATION

Composition	Polyolefin	
Packaging	5 kg of fibre in water soluble bags	
Appearance / Colour	Straight white embossed fibres	
Shelf life	24 months from date of production	
Storage conditions	The product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +30 °C. Always refer to packaging.	
Density	~0,91 kg/l	
Dimensions	Diameter	~0,84 mm (500 tex)
	Length	~60 mm
Melting point	~164 °C	

TECHNICAL INFORMATION

Concreting guidance	The standard rules of good concreting practice, concerning production and placing must be followed. Laboratory trials must be carried out before concreting on site, especially when using a new mix design. Fresh concrete must be cured properly and curing applied as early as possible.	
Concrete mixing time	Extend the normal mixing time to ensure a homogeneous distribution of fibres in the concrete mix. This particularly applies to high fibre dosages (>6 kg/m ³)	
Tensile strength	~465 N/mm ² (MPa)	(EN 14889-2)
Modulus of elasticity in tension	~7,5 kN/mm ² (GPa)	(EN 14889-2)
Recommended dosage	3–10 kg/m ³	
Compatibility	Compatible with other Sika admixtures	
Dispensing	In a concrete mixer, add the fibres with the dry aggregates taking care to evenly distribute the fibres throughout the mix. In a truck mixer, the fibres can be added when all the mix components have been added. Mixing time will need to be increased to ensure a uniform fibre distribution (as a guide add 1 extra minute for every 1m ³). Do not add the fibres directly into the mixing water.	

IMPORTANT CONSIDERATIONS

- Partial or total replacement of steel reinforcement by fibres must be designed by an appropriately qualified Engineer. Contact Sika Technical Service for additional information.
- Fibres will not improve the quality of poor concrete.

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.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

ECOLOGY, HEALTH AND SAFETY

REGULATION (EC) NO 1907/2006 - REACH

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).

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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