

# PRODUCT DATA SHEET

## SikaFiber® Force-50

### SYNTHETIC MACRO FIBRES FOR CONCRETE

#### PRODUCT DESCRIPTION

SikaFiber® Force-50 are 50 mm long polyolefin macro fibres for use in structural concrete

#### USES

For most types of in-situ cast structural concrete to reduce the amount of steel reinforcement, distribute stresses, increase structural properties or increase abrasion and fire resistance:

- Ground bearing slabs
- Precast concrete elements
- Foundations
- Building and infrastructure structural components
- Marine/Coastal defence concrete
- Shotcreting applications

#### 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

#### PRODUCT INFORMATION

<b>Chemical Base</b>	Polyolefin
<b>Packaging</b>	4 kg water soluble bags containing the fibre packs Refer to current price list for packaging variations
<b>Appearance / Colour</b>	Straight white embossed fibres
<b>Shelf Life</b>	24 months from date of production
<b>Storage Conditions</b>	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.
<b>Density</b>	~0,901 kg/l

#### 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 / STANDARDS

- CE Marking and Declaration of Performance to EN 14889-2 - Fibres for concrete. Polymer fibres Certificate No. 533591

<b>Dimensions</b>	Diameter	~0,715 mm
	Length	~50 mm
<b>Product Declaration</b>	Class II macro fibre	(EN 14889-2)
<b>Melting Point</b>	~164 °C	

## TECHNICAL INFORMATION

<b>Concreting guidance</b>	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.	
<b>Concrete Mixing Time</b>	Extend the normal mixing time to ensure a homogeneous distribution of fibres in the concrete mix. This particularly applies to high fibre dosages (>5 kg/m <sup>3</sup> )	
<b>Tensile Strength</b>	~450 N/mm <sup>2</sup> (MPa)	(EN 14889-2)
<b>Tensile Modulus of Elasticity</b>	~7.5 kN/mm <sup>2</sup> (GPa)	(EN 14889-2)

## APPLICATION INFORMATION

<b>Recommended Dosage</b>	3–6 kg/m <sup>3</sup>	
<b>Compatibility</b>	Compatible with other Sika admixtures	
<b>Dispensing</b>	Add the fibres in the concrete mixer with the dry aggregates taking care to evenly distribute the fibres throughout the mix. The fibres can be added when all the mix components have been added either in the concrete mixer or truck mixer. Mixing time will need to be increased to ensure a uniform fibre distribution (as a guide add 1 extra minute for every 1m <sup>3</sup> ). Do not add the fibres directly into the mixing water.	

## LIMITATIONS

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

## VALUE BASE

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 this 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.

### SIKA LIMITED

Watchmead  
Welwyn Garden City  
Hertfordshire, AL7 1BQ  
Tel: 01707 394444  
Web: [www.sika.co.uk](http://www.sika.co.uk)  
Twitter: @SikaLimited

### SIKA IRELAND LIMITED

Ballymun Industrial Estate  
Ballymun  
Dublin 11, Ireland  
Tel: +353 1 862 0709  
Web: [www.sika.ie](http://www.sika.ie)  
Twitter: @Sikalreland



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