



**PRODUCT DATA SHEET**

Edition 06.2020/v1  
CSC Master Format™ 03 05 00

# SikaFiber® Force-48

## SYNTHETIC MACRO FIBRE FOR SHOTCRETE AND CONCRETE

<b>Description</b>	SikaFiber® Force-48 is a 48 mm long macro synthetic fibre for use in structural concrete and shotcrete, specifically engineered and manufactured in an ISO 9001-certified manufacturing facility.																						
<b>Where to Use</b>	<p>SikaFiber® Force-48 is suitable for the use in sprayed concrete and <i>in-situ</i> cast concrete to distribute stresses, increase structural properties and increase abrasion resistance. The main uses for SikaFiber® Force-48 are in the following applications:</p> <ul style="list-style-type: none"> <li>▪ Excavation stabilisation in tunnelling and mining</li> <li>▪ Rock and ground stabilisation</li> <li>▪ Temporary stabilisation</li> <li>▪ Energy absorption</li> <li>▪ Replacement of steel reinforcement</li> <li>▪ Slab on grade concrete applications / industrial floors built on ground</li> <li>▪ Precast concrete elements</li> <li>▪ Concrete applications, requiring abrasion resistance</li> </ul>																						
<b>Advantages</b>	<p><b>Improves characteristics of hardened concrete</b></p> <ul style="list-style-type: none"> <li>▪ Highly increased energy absorption for sprayed concrete</li> <li>▪ Crack bridging capacity, especially at large crack openings</li> <li>▪ Increased durability due to high chemical resistance</li> <li>▪ Rust-free surfaces</li> <li>▪ Dissipates strains in concrete and prevents structural cracking</li> <li>▪ Increases impact and shatter resistance</li> <li>▪ Improves load capacity and ductility</li> <li>▪ Increases abrasion resistance</li> <li>▪ Increases resistance to freeze thaw attack</li> </ul> <p><b>Replacing rebar/wire mesh in concrete</b></p> <ul style="list-style-type: none"> <li>▪ Replaces and/or eliminates the need for secondary reinforcement systems (welded wire fabric reinforcement)</li> <li>▪ Easier to handle</li> <li>▪ Reduction of construction times</li> <li>▪ Homogenously mixed throughout concrete - Always in the correct location</li> <li>▪ Facilitates filling of edges, corners and complex shapes</li> </ul> <p><b>Replacing steel fibres</b></p> <ul style="list-style-type: none"> <li>▪ Reduced wear on concrete pumps and hoses compared to steel fibers</li> <li>▪ No corrosion stains on surface</li> <li>▪ Greater energy absorption at higher displacements</li> </ul>																						
<b>Standards</b>	Complies with <i>ASTM C1116/C1116M Type III Fiber - Reinforced Concrete, and ASTM D7508/7508M</i>																						
<p><b>Technical Data</b></p> <table border="0"> <tr> <td><b>Packaging</b></td> <td>Water-soluble pucks packaged in 8 kg boxes, 45 boxes per pallet</td> </tr> <tr> <td><b>Colour / Appearance</b></td> <td>White / Straight, embossed fibre</td> </tr> <tr> <td><b>Chemical Base</b></td> <td>Polyolefin</td> </tr> <tr> <td><b>Fibre Dimensions</b></td> <td>Length: 48 mm Equivalent diameter: 0.84 mm</td> </tr> <tr> <td><b>Shelf Life and Storage</b></td> <td>2 years from date of production if stored properly in undamaged, unopened, original sealed packaging.. Storage in dry conditions at temperatures between 5 and 30 °C. Protect from direct sunlight, frost, moisture/ water and contamination. Always refer to packaging.</td> </tr> <tr> <td colspan="2"><b>Properties</b></td> </tr> <tr> <td><b>Specific Gravity</b></td> <td>0.901 kg/L</td> </tr> <tr> <td><b>Melting Point</b></td> <td>164 °C</td> </tr> <tr> <td><b>Tensile Strength</b></td> <td>550 MPa (ASTM D2256)</td> </tr> <tr> <td><b>Tensile Modulus of Elasticity</b></td> <td>8.5 GPa (ASTM D2256)</td> </tr> <tr> <td><b>Chemical Resistance</b></td> <td>Consult Sika Canada Inc.</td> </tr> </table> <p><i>Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.</i></p>		<b>Packaging</b>	Water-soluble pucks packaged in 8 kg boxes, 45 boxes per pallet	<b>Colour / Appearance</b>	White / Straight, embossed fibre	<b>Chemical Base</b>	Polyolefin	<b>Fibre Dimensions</b>	Length: 48 mm Equivalent diameter: 0.84 mm	<b>Shelf Life and Storage</b>	2 years from date of production if stored properly in undamaged, unopened, original sealed packaging.. Storage in dry conditions at temperatures between 5 and 30 °C. Protect from direct sunlight, frost, moisture/ water and contamination. Always refer to packaging.	<b>Properties</b>		<b>Specific Gravity</b>	0.901 kg/L	<b>Melting Point</b>	164 °C	<b>Tensile Strength</b>	550 MPa (ASTM D2256)	<b>Tensile Modulus of Elasticity</b>	8.5 GPa (ASTM D2256)	<b>Chemical Resistance</b>	Consult Sika Canada Inc.
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**HOW TO USE**

<b>Dosage</b>	The application rate for SikaFiber® Force-48 fibres will vary depending on the type of application and the performance requirements of the project. Standard recommended dosage rate of SikaFiber® Force-48 is between 3 – 10 kg/m³ of concrete. Dosages outside the recommended dosage range can be used to meet project specific requirements. If this is the case please contact your Sika representative for technical support.
<b>Mixing</b>	<b>In a mixer truck</b> , SikaFiber® Force-48 can be added directly to the concrete mixing system after the batching of the ingredients and mixed for 4 to 5 minutes or 70 revolutions.  <b>In a concrete mixer</b> , add the fibres with the dry aggregate taking care to distribute them evenly throughout the mix. The addition of SikaFiber® Force-48 at the recommended dosage rates may decrease the slump; however, additional water should not be added. Only a water reducing or high range water reducing admixture should be used to adjust concrete to the desired workability.
<b>Clean Up</b>	Use personal protective equipment (chemical resistant goggles/gloves/clothing).
<b>Health and Safety Information</b>	For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent SAFETY DATA SHEET containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN  
FOR INDUSTRIAL USE ONLY

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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, within their shelflife. 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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: [www.sika.ca](http://www.sika.ca)

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