

SikaFiber® Force-650 *(formerly Fibermesh 650)*

Macro-Synthetic Reinforcing Fibre

Description SikaFiber® Force-650 is a macro-synthetic fibre specifically designed for use as a secondary reinforcement, to reduce plastic and hardened-concrete shrinkage cracking, increase fatigue resistance and concrete toughness, as well as to improve impact strength. SikaFiber® Force-650 can also be used in shotcrete.

Where to Use SikaFiber® Force-650 fibres are designed for use as a safe and simple alternative for welded wire fabric (WWF) in concrete. SikaFiber® Force-650 does not corrode and will not degrade in the high alkaline environments of concrete. SikaFiber® Force-650 fibres are evenly distributed throughout the concrete thanks to the mixing activity. SikaFiber® Force-650 acts mechanically by reinforcing the concrete with a multi-dimensional network of fibres. Typical applications include interior and exterior slab-on-grade concrete slabs, industrial and warehouse floors, driveways and side-walks, white toppings and overlays, composite metal decks and parking structures, septic tanks, manholes and burial vaults, as well as shotcrete applications. Do not, however, specify SikaFiber® Force-650 on slabs as a replacement for moment or structural steel.

- Advantages**
- Reduces plastic shrinkage and plastic settlement cracking.
 - Provides multi-dimensional secondary reinforcement as an alternative for WWF, light rebar and steel fibres.
 - Improves residual strength of concrete.
 - Improves impact- shatter- and abrasion-resistance of concrete.
 - Enhances durability and toughness of concrete.

Standards SikaFiber® Force-650S complies with ASTM C III6, Type III, and is UL-certified and approved for use in all D700, D800 and D900 Series decks as an alternative to WWF.

Typical Data	
Packaging	1,800 g/bag 8 bags per box/27 boxes per pallet
Fibre Type	Macro synthetic polypropylene fibre
Fibre Length	Blend of 38 and 44 mm
Shelf Life and Storage	5 years if stored in original and unopened packaging and in dry conditions. Protect product from the moisture and rain.
Properties	
Specific Gravity	0.91
E Modulus	5 - 7 GPa
Tensile Strength	613 MPa average
Melt Point	162 °C
Alkali resistance	Excellent

How to Use

Dosage While the application rate for SikaFiber® Force-650 fibres will vary depending on the application, mix design and the specific requirements of each project, the typical dosage varies between 1.8 to 3 kg per cubic meter of concrete; it can be increased up to 4.5 kg per cubic meter for shotcrete or other specified applications. Dosages outside of these ranges may be required to meet the needs of specific projects.

Mixing SikaFiber® Force-650 micro reinforcing is a mechanical, not chemical, process. The fibres are added to the mixer before, during or after batching the other concrete materials and mixed at high speed for four to five minutes. Additional mixing does not adversely affect the distribution or overall performance of SikaFiber® Force-650. The addition of SikaFiber® Force-650 at the recommended dosage rates to a given mix may decrease the slump; however, additional water should not be added. Only a water-reducing admixture should be used to adjust concrete to the desired workability required for placement.



Construction

Tooling and Finishing

If additional workability is required, a Sika water-reducer or superplasticizer is recommended instead of extra mixing water. Fibre-reinforced concrete can be finished by most finishing techniques. SikaFiber® Force-650 does not affect the finishing characteristics of concrete. SikaFiber® Force-650 can be used in power- or hand-trowelled concrete, and with coloured and broom-finished concrete.

Clean Up

Use personal protective equipment (chemical resistant goggles/gloves/clothing). Ventilate area. In absence of adequate ventilation, use properly-fitted NIOSH respirator. Without direct contact, remove spilled or excess product and place in suitable sealed container. Dispose of excess product and container in accordance with applicable environmental regulations.

Health and Safety Information

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

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 shelf life. 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 proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.



Sika Canada Inc.
Head Office
601 Delmar Avenue
Pointe-Claire, Quebec
H9R 4A9

Other locations
Toronto
Edmonton
Vancouver

1-800-933-SIKA
www.sika.ca

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