

## SikaFiber® Force 650S

### Macro-Synthetic Fiber

**Description** SikaFiber® Force 650S is macro synthetic reinforcing fiber complying with ASTM – C 1116 and carries CE Mark, Type III and EN 14889-2: 2006 Polymer Fibers - Definitions, specifications and conformity. SikaFiber® Force 650S is specifically engineered for use as secondary reinforcement. SikaFiber® Force 650S is a 100% virgin copolymer fiber designed to provide a high performing reinforcement system for concrete. SikaFiber® Force 650S is specifically engineered and manufactured to reduce plastic and hardened concrete shrinkage, increase fatigue resistance and concrete toughness, and improve impact strength.

**Applications** Due to its mechanical properties SikaFiber® Force 650S is recommended for use in following applications:

- Industrial and Warehouse Floors
- Residential and commercial Slab on grade
- Driveways and side walks
- Replacement for welded wire fabric (WWF)
- Composite metal decks and parking structures
- Septic tanks, manholes and burial vaults
- Precast elements
- Shotcrete applications

SikaFiber® Force 650S can be successfully used as a safe and simple alternative to WWF. SikaFiber® Force 650S does not corrode, and is alkali resistant. SikaFiber® Force 650S utilize the mixing activity to evenly disperse the fibers into the concrete. SikaFiber® Force 650S acts mechanically by reinforcing the concrete with a multi-dimensional fiber network. SikaFiber® Force 650S does not affect curing process chemically and does not absorb water.

**Benefits**

- Reduces plastic shrinkage and plastic settlement cracking.
- Provides multi-dimensional secondary reinforcement, alternate to welded wire fabric, light rebar and steel fibers.
- Improves residual tensile strength and ductility of concrete.
- Improves impact, shatter and abrasion resistance of concrete.
- Enhances durability and toughness of concrete.

|                     |                                 |                     |
|---------------------|---------------------------------|---------------------|
| <b>Typical Data</b> | <b>Material:</b>                | Polypropylene blend |
|                     | <b>Length:</b>                  | Graded              |
|                     | <b>Specific gravity:</b>        | 0.91                |
|                     | <b>E-Modulus:</b>               | 5.4 GPa             |
|                     | <b>Tensile Strength:</b>        | 89 ksi (613 MPa)    |
|                     | <b>Melt Point:</b>              | 324°F (162°C)       |
|                     | <b>Alkali/Acid resistance:</b>  | Excellent           |
|                     | <b>Electrical Conductivity:</b> | Low                 |
|                     | <b>Thermal Conductivity:</b>    | Low                 |

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.



PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT [HTTP://USA.SIKA.COM/](http://usa.sika.com/) OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

**How to Use**

|                                |  |
|--------------------------------|--|
| <b>Dosage</b>                  | Standard recommended dosage rate of SikaFiber® Force 650S is between 4-10 lbs/cu. yd. of concrete or as required by specific mix design. 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>                  | SikaFiber® Force 650S can be added directly to the concrete mixing system, during or after the batching of the ingredients and mixed at high speed for four to five minutes. Additional mixing does not adversely affect the distribution or overall performance of SikaFiber® Force 650S. The addition of SikaFiber® Force 650S at the recommended dosage rates to a given mix will 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. |
| <b>Application</b>             | The addition of SikaFiber® Force 650S at the normal recommended dosage rate usually does not require any mix design or application changes. A mid range or high range water reducer is recommended in concrete placements where improved workability and finishability are desired.  |
| <b>Tooling &amp; Finishing</b> | Fiber reinforced concrete can be finished by most finishing techniques. SikaFiber® Force 650S does not affect the finishing characteristics of concrete. SikaFiber® Force 650S can be used in power/hand troweled concrete, colored and broom finished concrete.   |
| <b>Packaging</b>               | SikaFiber® Force 650S is available in collated water soluble bundles/pucks packaged in 10 kg cartons.  |
| <b>Storage and Shelf Life</b>  | SikaFiber® Force 650S should be stored in a cool dry warehouse. Protect product from the rain and from direct sunlight.<br><br>If stored in dry conditions shelf life is 5 years.  |

**KEEP CONTAINER TIGHTLY CLOSED • KEEP OUT OF REACH OF CHILDREN • NOT FOR INTERNAL CONSUMPTION • FOR INDUSTRIAL USE ONLY • FOR PROFESSIONAL USE ONLY**

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Quality Certification Numbers: Lyndhurst: FM 69711 (ISO 9000), FM 70421 (QS 9000), Marion: FM 69715, Kansas City: FM 69107, Santa Fe Springs: FM 69408



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