Concrete

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SikaFiber® HP
Monofilament Polypropylene Concrete Micro Fiber

Description
SikaFiber® HP is a new generation of micro monofilament polypropylene fiber for use in concrete. SikaFiber® HP is specifically designed for the purpose of controlling plastic shrinkage and settlement cracking. SikaFiber® HP meets the requirements of ASTM C-1116, Type III and ICC-ES AC32 and is recognized in ICC ES evaluation report ESR-1699. Section 3.1.1, Plastic shrinkage reinforcement at 0.2 lb/cu. yd (0.3 kg/m3).

Applications
SikaFiber® HP creates, due its ultra thin diameter and ultra high strength, an extremely dense three dimensional network of reinforcing fibers in the concrete. SikaFiber® HP acts mechanically by reinforcing the concrete with fiber network coated with mortar. SikaFiber® HP does not affect curing process chemically and SikaFiber® HP does not absorb water. SikaFiber® HP can be used in all types of concrete such as residential or commercial slabs on ground (SOG), concrete overlays, precast applications, shotcrete or stucco. Synthetic fibers help the concrete at early ages, which is especially beneficial to precasters where stripping time and handling is important. SikaFiber® HP can decrease plastic and drying shrinkage cracking and increase impact resistance in young concrete. SikaFiber® HP when used in shotcrete applications will increase the compaction and density of shotcrete, reducing rebound and permitting thicker layers per pass. SikaFiber® HP can be used to prevent explosive spalling of concrete when concrete is exposed to fire.

Benefits
■ Reduces the rate of hydration of cement and controls concrete temperature.
■ Higher fiber count per pound than standard monofilament fibers.
■ Virtually invisible in concrete.
■ Allows for lower dosage compared to other monofilament types of fiber.
■ Reduces the formation of plastic shrinkage cracking in concrete.
■ Provides multi-dimensional reinforcement.
■ Improves impact, shatter and abrasion resistance of concrete.
■ Prevents explosive spalling of concrete at higher temperatures.
■ Enhances durability and toughness of concrete.
■ Reduces bleeding.
■ Excellent finishability.

Typical Data
Fiber type: Monofilament polypropylene micro fiber
Fiber length: 0.5” (6 mm)
Specific gravity: 0.91
E-modulus: 800 ksi
Alkali resistance: Excellent Alkali resistance

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

How to Use
Dosage
Standard recommended dosage rate of SikaFiber® HP is 0.5 up to 1 lb/cu. yd. of concrete or as required by specific mix design. When used in application for fire resistance, the recommended dosage is 1.7-2.0 lbs./cu. yd. Dosages outside the recommended range may be used for special requirements and applications, for further detail please contact your local regional office or the Technical Service Department at 1-800-933-7452.

Product Data Sheet
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SikaFiber® HP
Mixing

SikaFiber® HP 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® HP. The addition of SikaFiber® HP at the recommended dosage rates to a given mix 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 required for placement.

Application

The addition of SikaFiber® HP at the normal recommended dosage rate does not require any mix design or application changes. A water reducer or high range water reducer is recommended in concrete placements where improved workability and finishability are desired.

Tooling & Finishing

Fiber reinforced concrete can be finished by most finishing techniques. SikaFiber® HP does not affect the finishing characteristics of concrete. SikaFiber® HP can be used in power/hand troweled concrete, colored and broom finished concrete.

Packaging

SikaFiber® HP is available in 0.5” (13 mm) length in various pack sizes in degradable bags.

Storage and Shelf Life

SikaFiber® HP should be stored in dry warehouse. Protect product from the rain.

If stored in dry conditions shelf life is 5 years.