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FIBRASOL F

Fibrillated Polypropylene Micro Fiber for Concrete

Product Description

FIBRASOL F is a collated fibrillated polypropylene fiber designed to provide integral secondary reinforcement of concrete. FIBRASOL F fibers are engineered and manufactured from virgin polypropylene exclusively for use in concrete and cementitious based products.

Benefits

- Controls plastic shrinkage cracks, and restrains crack growth.
- Provides multi-dimensional reinforcement.
- Alkaline resistance improves plastic and hardened concrete properties.
- Improves ductility and toughness and resistance to spalling.
- Improves compressive, flexural and tensile strengths.
- Improves impact, shatter and abrasion resistance.
- Reduces permeability of hardened concrete.

Dosage

Dosage for FIBRASOL F is 1.5 lbs. per cubic yard (.89 kg/m^3) of concrete.

Fiber Addition

FIBRASOL F fibers can be added to the mixture at any time prior to placement of concrete. It is recommended to add any fiber material at the ready-mix concrete plant during batching.

Fibers must be mixed with concrete for a minimum of five minutes at maximum mixing speed to ensure complete dispersion and uniformity.

Recommendations

FIBRASOL F is used as a cost-effective replacement of standard welded wire mesh (WWM) in concrete. Fibrillated fibers exhibit a superior bond with the cement matrix when compared with monofilament fibers. This network of fibrillated fibers produces an enhanced surface cross section in the concrete. Concrete containing FIBRASOL F demonstrates modest increases in flexural and tensile strengths.

FIBRASOL F is chemically inert, it will not degrade in the high alkaline environments of concrete. It can be used in ready-mix concrete and placed using conventional concreting methods. FIBRASOL F does not easily segregate from the mix.

The addition of FIBRASOL F to a concrete mix does not increase water demand. FIBRASOL F can help to reduce the quantity of surface bleed water thus leading to a greater water retention at early stages of hydration. Recommended applications include wet mix and dry mix, shotcrete, slabs on grade and precast concrete members.

Applicable Standards

FIBRASOL F meets or exceeds the requirements of ASTM C 1116, Type III; and and ASTM E 11985.

Directions For Use

Refer to ACI 544.3R for detailed mixing and placing instructions. FIBRASOL F can be added during or after the charging of the mixer. Mix for five minutes at mixing speed to assure adequate distribution. Over mixing is not harmful. FIBRASOL F has a minimal effect on slump. Do not add additional water. FIBRASOL F disperses quickly and uniformly throughout the concrete mix. FIBRASOL F is not a substitute for any structural or negative movement reinforcement.

All ingredients for concrete are calculated into the mix design by volume. Fiber reinforcement is no different. To be considered secondary reinforcement, a fiber volume of 0.1% is the minimum requirement. Toughness is the measure of fibrous concrete's ability to sustain load after first crack. (Ref: ASTM C 1018). Research indicates that a minimum fiber volume of 0.1% is necessary to meet the ASTM Performance Level 1 toughness requirements. Different synthetic fibers vary in density as indicated by the difference in their specific gravity. Their dosage rates must therefore vary in order to contribute the minimum 0.1% by volume.

Packaging

FIBRASOL F fibers are packaged in 1.0 lb. (0.45 kg), 1.5 lb. (0.68 kg) and 5.0 lb. (2.25 kg) water-soluble bags.

Technical Information

Material: fibrillated polypropylene
Color: white
Specific Gravity: 0.91
Length: 0.25, 0.5 and 0.75 inch (6, 13 and 19 mm) blend.
Typical dosage rate: 1.5 lbs./yd^3 (.89 kg/m^3)
Tensile Strength: 80 ksi (551 MPa)
Modulus of Elasticity: 660 ksi (4554 MPa)
Melt Point: 312°F (155°C)
Fiber Count: Approx. 804,000 per lb. (0.45 kg)
Denier: 400.0
Diameter: 0.0035 inch (0.0889 mm)
Water Absorbability: Negligible
Acid Resistance: High
Alkali Resistance: High
Thermal Conductivity: Low
Electrical Conductivity: Low

Health and Safety

Refer to the MSDS for additional health and safety information.

Technical Service

A trained Axim representative is available to assist in the preparation of specifications, and the resolution of concrete problems in the field.

Warranty

Axim warrants its products to be free of manufacturing defects and that they will meet Axim's current published physical properties when applied in accordance with Axim's directions and tested in accordance with ASTM and Axim standards. Axim makes no warranty or guarantee, express or implied, including warranties of fitness for a particular purpose or merchantability, respecting its products, and Axim shall have no other liability with respect thereto.

Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith.

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