



MONO

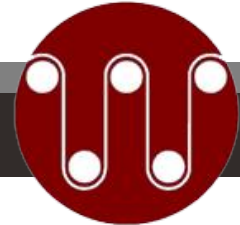
Monofilament Microsynthetic Fiber



AFS

Fibers for Asphalt,
Concrete & Stucco

**ADVANCED
FIBER
SOLUTIONS, INC.**



SPECIFICATION DATA SHEET

DESCRIPTION

MONO-PRO® is a unique 3 denier monofilament polypropylene fiber. Mono-Pro is available in two cut lengths; 3/4” and 1/2”. There are approximately 200 million individual 3/4” long fibers in one pound of product. This means there are approximately 100 million individual fibers in the 1/2 lb/CY recommended dosage as a plastic shrinkage crack reinforcement. The 1/2” long Mono-Pro will yield yet a

higher fiber count and as reflects in the May, 2010 TEC Services report out performs the 3/4” long Mono-Pro at the same dosage level. Reducing plastic concrete shrinkage cracking is a very important element in enhancing the long term durability of the concrete. ABC Polymer’s Mono-Pro provides proven performance at the 1/2 lb/CY dosage level.

Since Dr. Hannant proclaimed in the late 1970’s that critical fiber spacing was important to controlling the propagation/formation of plastic shrinkage cracks and the growth of these cracks, the industry has strived to develop a product that would fully meet the requirements. **MONO-PRO®** is that product. Dr. Antoine Naaman and his colleagues in a paper from 2005 intended to study the effect of fiber count opine “...decreasing the fiber diameter or equivalently increasing the number of fibers crossing a unit area significantly improves the control of plastic shrinkage cracking.” **MONO-PRO®** test data definitely supports this theory.

MONO-PRO® is high tensile strength, high modulus of elasticity, ultra thin monofilament homopolymer polypropylene fibers designed to quickly distribute uniformly throughout the concrete matrix. At the engineered dosage level of 0.50-lb/cy, **MONO-PRO®** is a stellar plastic shrinkage reinforcement.

Furthermore, **MONO-PRO®** is the ideal plastic shrinkage reinforcement component in steel fiber and microsynthetic fiber blends and macrosynthetic fiber and microsynthetic fiber blends. Check with the ABC Engineering Group to help to select the proper blend for the application.

PHYSICAL PROPERTIES

Specific Gravity	0.91
Melt Point	320°F (160°C)
Ignition Point	1,094°F (590°C)
Water Absorption	Nil
Acid and Alkali Resistance	Excellent
Modulus of Elasticity	800ksi
Tenacity	4.5grams/den
Tensile Strength	55 ksi (min)

GENERAL

MONO-PRO® is highly modified monofilament polypropylene fiber with excellent plastic shrinkage reinforcement properties. **MONO-PRO®** dramatically reduces plastic shrinkage cracks as well as plastic settlement with the engineering dose of 0.50-lb/cy. The competition requires more than 1.0-lb/cy to achieve the same reduction in plastic shrinkage cracking.

MONO-PRO® is packaged in pre-weighed degradable bags to ensure optimum dosing and homogeneous distribution of the product. Typically no modifications to the mix design are required when the product is used at the engineering dosage of 0.50-lb/cy. **MONO-PRO®** fibers can be introduced into the mixing system at any time except when the cement is being introduced. Mixing time will vary based on when the fibers are introduced to the mixer. The normal range is 3-5 minutes, with the higher number preferred when the fibers are added after all of the standard ingredients have been introduced and mixed.

MONO-PRO® is not a replacement for structural steel. It will not **replace any of the steel that is used in calculating the load carrying capacity of the concrete element.**

APPLICATIONS

- Residential slabs-on-ground
- Commercial slabs-on-ground
- Stucco
- Dry packaged cement based products
- Precast products
- Pools and pool decks
- Water retention tanks

FEATURES & BENEFITS

- Uniform Distribution Throughout the Concrete Matrix
- Excellent Finishability
- Excellent Reduction in Plastic Shrinkage Cracking
- Transforming Macro Cracks into Micro Cracks
- Measurably Reduces Plastic Settlement
- Measurably Reduces the Concrete Permeability, Thus Increasing Freeze-Thaw Durability and Wet-Dry Durability
- Increases a Number of Durability Properties, Thus the Service Life of the Concrete
- Performs as an Excellent Companion in Blends with Macro Synthetic Fibers and Steel Fibers.

ENGINEERING SPECIFICATIONS:

MONO-PRO® is uniquely developed plastic shrinkage reinforcement for concrete. With approximately 100 million, 0.75” long fibers in the engineered dose of 0.50- lb/cy, **MONO-PRO®** is capable of actually reducing plastic shrinkage cracking by up to 25% more than conventional monofilament fibers at 1.0-lb/cy dosage rates. **MONO-PRO®** is compatible with admixtures and additives that meet the applicable ASTM specifications.

MONO-PRO® meets the requirements of ASTM C1116, Section 4.1.3 and Note 2 as well as ICC ES AC32, Sections 3.1.1 at the engineered dosage level of 0.50-lb/cy.

PACKAGING AND SHIPPING

We strive to meet our customers’ needs and specifications by shipping our fiber in an inexpensive and timely manner, and by packaging our fiber in infinite ways. We ship within 48-hours of purchase order receipt for less than truckload orders. We can package into bags as small as 0.50-lb. and as large as 30-lbs. Our pallets range in weight from 648-lbs. to 1080-lbs. We remember that we are here because of our customers, and strive to keep them happy!

WARRANTY AND LIMITATION OF LIABILITY

As used herein, the term “ABC” shall refer to ABC Polymer Industries, LLC and its subsidiaries.

The terms of ABC’s invoices shall be governed by and construed in accordance with the laws of the State of Alabama.

ABC’s fibers are intended to reduce plastic shrinkage cracking and provide secondary temperature-shrinkage reinforcement. ABC’s fibers should not be used as structural reinforcement. ABC Polymer Industries, LLC warrants that the product sold hereunder is of merchantable quality and conforms to the seller’s standards and specifications. The seller’s sole liability for claim shall be limited to replacement of defective or non-conforming product. In no event shall the seller be liable for any special, incidental, consequential, or exemplary damages. ABC Polymer Industries, LLC recommends that each user determine the suitability of the product(s) for their particular application.

ABC engineering and sales personnel are available to assist in selecting the appropriate fiber for a given specification / application. Said personnel will provide an overview of anticipated performance based upon experience and testing data. ABC personnel will provide recommendations, but are not the final arbiters on design. ABC personnel will provide onsite support where our products are utilized and when deemed necessary, but will not participate in the supervision of any project. ABC’s responsibility is to support our customers and to provide our customers with the best materials and assistance in marketing these products.