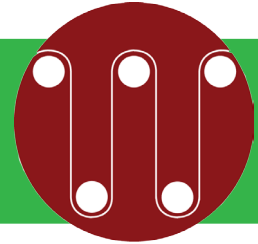


FIBRIL-TUF
Fibrillated Microsynthetic Fibers



SPECIFICATION DATA SHEET



DESCRIPTION

FIBRIL-TUF®, a Microsynthetic Fiber, is a 1,500 denier fibrillated polypropylene fiber manufactured by ABC from 100% virgin homopolymer polypropylene resins.

GENERAL

FIBRIL-TUF® is designed to distribute quickly through out the concrete mix. The fibrillation pattern was designed to optimize the mechanical bond between the mortar matrix and the fiber networks. The enhanced mechanical bond means that the product provides better control of plastic shrinkage and drying shrinkage cracking. **FIBRIL-TUF®** is an excellent secondary reinforcement option when used at 1.5 pcy.

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
Available Lengths	1/2" (12mm), 3/4 (19mm), 1" (25mm), 1.5" (38mm)

APPLICATIONS

- Residential and Commercial Slabs-on-Ground
- Ultra Thin Whitetopping
- Architectural Precast Products and Ornamental Elements
- Irrigation Ditches/Channels
- Shotcrete Applications

FEATURES & BENEFITS

- Excellent Distribution
- Excellent temperature-shrinkage reinforcement
- Modifies macro-micro cracking mechanism
- Reduces plastic settlement
- Extends service life with reduced maintenance
- Enhances Fatigue Strength
- Enhances impact, pullout and surface abrasion resistance
- Reduces permeability

PRODUCT APPROVALS

FIBRIL-TUF® conforms to the requirements of ASTM C1116, Section 4.1.3 and Note 2 as well as meeting the requirements of ICC ES AC32 Sections 3.1.1 (plastic shrinkage reinforcement) and 3.1.2 (temperature-shrinkage reinforcement). **FIBRIL-TUF®** is approved by ICC ES and is listed in ICC ES ESR-1699.

MANUFACTURER'S RECOMMENDATIONS:

FIBRIL-TUF®, is a fibrillated polypropylene fiber used primarily as secondary/temperature-shrinkage reinforcement in concrete. The standard dosage rate for **FIBRIL-TUF®**, is 1.5 pcy. **FIBRIL-TUF®**, is an excellent replacement for conventional secondary reinforcement. Three dimensionally distributed throughout the cross-section **FIBRIL-TUF®** is proactive not reactive.

FIBRIL-TUF®, is packaged in pre-weighed degradable bags that can be added directly to the mixing system. The bags can be introduced at any time during the mixing cycle, except at the same time as the cement. Three to five minutes will be required to disperse the fibers depending on when the product is added to the mixer.

ENGINEERING SPECIFICATIONS:

When specifying an option to conventional secondary reinforcement **FIBRIL-TUF®**, is the answer. **FIBRIL-TUF®** outperforms the other Microsynthetic Fibers when it comes to providing the optimum 3-dimensional temperature-shrinkage reinforcement system for concrete. A principle reason for this is the additional fibril elements available to the concrete matrix due to the ultra low denier.

Specify ABC's ¾" long fibrillated polypropylene fiber **FIBRIL-TUF®**, at 1.5 pcy (0.9 kgs/m³) as the secondary reinforcement in Plain Structural Concrete. **FIBRIL-TUF®**, meets the requirements of ASTM C1116, Section 4.1.3 and Note 2 plus ICC ES AC32, Sections 3.1.1 and 3.1.2.



ICC ES AC32 ENGINEERING PROPERTIES

Test	Control	Fibril-Tuf	% of Control	ICC Criteria
Compressive Strength, psi	4,920	4,920	100%	> Control
Flexural Strength, psi	560	580	103.6%	> Control
Freeze/Thaw Durability	87	90	103.4%	> Control
Bond Strength, psi	1,160	1,200	103.5%	> Control
Plastic Shrinkage Cracking	79.1% (reduction)		Min 40%	
Impact Resistance, blows				
7 days	4	8	200%	Min 200%
28 days	6	10	167%	Min 150%

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.

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