

## PROFESSIONAL TECHNICAL SUPPORT

In addition to providing commercial laboratory test reports ABC Polymer Industries offers professional in-house engineering support for specific projects that includes Letters of Certification and communicating with project engineers.

When you source from ABC Polymer, you have selected the absolute best FRC product(s) delivered with the *most comprehensive technical support in the industry.*

## CONCRETE INDUSTRY SUPPORT

ABC Polymer proudly participates in industry organizations including FRCA, ASTM, ACI, NRMCA, ICC, TRB, as well as, various state organizations.

## 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.

### 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.

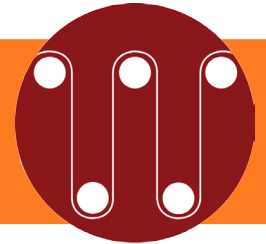
ABC's fibers are intended to reduce plastic shrinkage cracking and provide secondary temperature-shrinkage reinforcement. ABC's fibers should not be used as structural reinforcement. ABC Polymer Industries, LLC warrants that the product sold hereunder is of merchantable quality and conforms to the seller's 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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## SPECIFICATION DATA SHEET



## DESCRIPTION

Advanced Performance is a blend of a Type V steel fiber, Steel-Pro Type V and a microsynthetic fiber, Mono-Tuf. Both of these components of Advanced Performance meet the requirements of ASTM C1116. Steel-Pro V meets the requirements of Section 4.1.1 and Mono-Tuf meets the requirements of Section 4.1.3 and Note 2. **The specific properties of each of these products are available on the ABC Polymer website: [www.abcpolymerindustries.com](http://www.abcpolymerindustries.com).**

## SEPARATE, HIGH-PERFORMANCE PRODUCTS



*Mono-Tuf* is exclusively manufactured and distributed by ABC Polymer Industries.

ABC's Number One selling microsynthetic fiber, Mono-Tuf is a monofilament polypropylene fiber that is listed in ICC ES ESR-1699 and meets the requirements of ICC ES AC32, Sections 3.1.1 (plastic shrinkage cracking reinforcement) and 3.1.2 (temperature-shrinkage cracking reinforcement).



Steel-Pro Type V is sourced through a U.S. supplier. This product is a continuously deformed steel fiber 1.5" or 2" long that meets the requirements of ASTM A820.

ABC markets each of these products as a separate, high-performance concrete reinforcement system.

## WHY BLEND?

### COMPLETE CRACKING REINFORCEMENT SYSTEM

Advanced Performance's blend of steel and microsynthetic fibers provides a complete reinforcement package from plastic shrinkage cracking reinforcement to post-first crack toughness reinforcement, which translates into a more durable concrete with a longer expected life.

- Post-first crack toughness reinforcement as measured by ASTM C1609 or ASTM C1399.
- Temperature-Shrinkage cracking reinforcement equivalent to WWF.
- Plastic Shrinkage Cracking Reinforcement as measured by ASTM C1579.

### CONCRETE DURABILITY

Combining steel fibers and microsynthetic fibers enhances the long-term durability of the concrete. There are measurable quantifiable gains in:

- Impact resistance
- Surface abrasion resistance
- Reduced permeability
- Fatigue strength.

*The 3-dimensional fiber reinforcement system reduces the effects of multiple axle loadings from either forklift or truck traffic and produces a slab-on-ground which lasts longer and requires less maintenance.*

- Reduced volume change due to variations in moisture, temperature or both.

## STANDARD DOSAGE

The standard blend of these two products incorporates 23.0 pcy of the Steel-Pro Type V and 1.0 pcy of the Mono-Tuf. Other combinations of these products are available. The 23.0 pounds of Steel-Pro Type V and 1.0 pounds of Mono-Tuf are packaged in a single bag.

## PRIMARY APPLICATIONS

*Advanced Performance* primary applications include ingress and egress roadways as well as parking areas and service ramps, bonded concrete overlays, elevated decks where composite steel decking is used, water diversion channels and slope stabilization.

*Advanced Performance* is also an excellent choice for industrial and warehouse floor slabs, septic tanks, burial vaults, utility vaults and other specification type precast products.

NOTE: At 23.0 pcy, **the steel fibers function purely as secondary reinforcement**

## ADVANCED PERFORMANCE DETAILS

### DESIGN

**With FRC mix designs that include this quantity of fiber reinforcement we recommend** that trial mixes be fabricated in the plant laboratory to ensure there is sufficient mortar to coat both the coarse aggregate and the surface area of the fiber.

NOTE: ABC Polymer's in-house engineer is available for consultation on how best to establish the optimum design for your concrete project.

### MIXING

**Fiber is typically delivered to a jobsite already mixed in the concrete.** The fiber comes in small, water-soluble bags which are added to the concrete during batching. ABC Fibers recommends 5-7 minutes of mixing at high speed prior to pouring to ensure thorough dispersion of the fibers. The result is uniformly distributed fibers that provide three-dimensional reinforcement to the concrete. Fiber is hard at work in every square inch of concrete and not just along one plane, as with welded wire.

### PLACING

**When placing the FRC mixes that include this quantity of fiber reinforcement it is recommended that a mid-range or high-range water reducer be added to the mix to enhance workability.** No special tools or handling is required. When the higher dosage level mixes are being pumped we recommend a minimum reduction of 10% of the coarse aggregate, which is in line with ACI.

### FINISHING

**When finishing higher fiber dosage level mixes as with Advanced Performance, ABC Polymer recommends that a laser screed or vibrating screed be used in order to:**

- 1.Ensure that the fibers at the surface of the slab are encapsulated in the matrix
- 2.Improve the quality of the consolidation of the concrete.

## TESTED FIBER REINFORCEMENT

ABC Polymer is driven to be **the ultimate** source for first-quality **fiber reinforcement for concrete**. All of ABCs concrete fiber reinforcement systems are designed and manufactured to meet all of the applicable consensus standards and building codes of the industry. Our QA/QC program has met the standards set by ICC ES in Acceptance Criteria 10.

**ABC is focused on** moving the industry forward with an aggressive research and development program that will enhance current products, advance FRC technology and produce the new generation of FRC products.

## SUPERIOR CUSTOMER SERVICE

The handling of a customer's order is **THE** paramount function of our staff.

Our goals are to:

- Ship all orders within 72 hours and less than truckload orders within 48 hours
- Assure absolute order accuracy including product type, quantity and ship to address
- Minimize shipping costs and travel time door-to-door