1. IDENTIFICATION

PRODUCT NAME: FiberForce 300™ (Fibril-Tuf™)
OTHER IDENTIFICATION: Polypropylene

SOURCE: ABC Polymer Industries, LLC
545 Elm Street, Helena, AL 35080

2. DESCRIPTION

FiberForce 300 is a fibrillated polypropylene fiber manufactured from 100% virgin homopolymer polypropylene resins.

FiberForce 300 is primarily used as a plastic-shrinkage reinforcement in concrete. The fibers measurably reduce plastic settlement, while offering excellent distribution and finishing abilities. FiberForce 300 also extends service life of the concrete by enhancing impact and surface abrasion resistance.

The fibrillation pattern optimizes the mechanical bonding between the mortar mix and the fiber networks, thus allowing it to better control plastic drying shrinkage cracking in concrete.

3. APPLICATIONS

- Residential and Commercial Slabs-on-Ground
- Ultra-thin whitetopping (UTW)
- Slipformed curbs and gutters
- Irrigation ditches and channels
- Shotcrete applications

4. FEATURES & BENEFITS

- Replaces light WWR in slab-on-ground applications
- Excellent distribution throughout the concrete mix
- Excellent temperature-shrinkage reinforcement
- Excellent reduction in plastic shrinkage and settlement cracking
- Extends service life of the concrete with reduced maintenance
- Increases concrete durability - including impact and abrasion resistance and fatigue strength
- Measurably reduces permeability, thus increasing freeze-thaw durability

5. PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Material</th>
<th>Polypropylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorption</td>
<td>Nil</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.91</td>
</tr>
<tr>
<td>Alkali Resistance</td>
<td>Excellent</td>
</tr>
<tr>
<td>Melting Point</td>
<td>320 °F (160 °C)</td>
</tr>
<tr>
<td>Acid &amp; Salt Resistance</td>
<td>Excellent</td>
</tr>
<tr>
<td>Electrical Conductivity</td>
<td>Low</td>
</tr>
<tr>
<td>Equivalent Diameter</td>
<td>0.019 in (0.48 mm)</td>
</tr>
<tr>
<td>Standard Length</td>
<td>0.75 in (19 mm)</td>
</tr>
<tr>
<td>Other Available Lengths</td>
<td>0.25 in (6.4 mm), 0.5 in (12.7 mm), 1.5 in (38 mm), Graded</td>
</tr>
</tbody>
</table>
6. MIXING INSTRUCTIONS

Typically, no modifications are required when FiberForce 300 is used at 1.5 lb per cubic yard. Standard mixing and finishing practices can be employed.

FiberForce 300 may be added to the concrete mix at any time before, during or after the batching process, except at the same time as the cement.

The normal mixing range is 3-5 minutes with the higher mixing time preferred when the fiber is added after the standard ingredients have been introduced and mixed.


Our Professional Engineers are available for consultation on how to establish the optimum design.

7. PRODUCT APPROVALS & COMPLIANCE WITH INDUSTRY STANDARDS

- ASTM C1116 Section 4.1.3 and Note 2
- ASTM D7508
- ICC ES AC32 Section 3.1.1
- ICC ES AS32 Section 3.1.2
- Listed as ICC ESR-1699

Please contact us with any questions regarding this product, or if a Letter of Certification for FiberForce 300 is needed to show compliance with the specifications referenced above or specific project requirements.

FiberForce 300 is also known as Fibril-Tuf™. All Fibril-Tuf test data and approvals apply to FiberForce 300.

8. GENERAL SPECIFICATIONS

FiberForce 300 should be added per project specifications or engineer’s instructions.

FiberForce 300 is typically introduced at 1.5 lbs. per cubic yard. The fibers are packaged in pre-measured degradable bags that can be added directly to the concrete mix.

For dosage rates outside the typical range, please contact your Regional FiberForce Representative.

9. ICC ES AC32 ENGINEERING PROPERTIES

<table>
<thead>
<tr>
<th>Test</th>
<th>FiberForce 300</th>
<th>% of Control</th>
<th>ICC Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength, psi</td>
<td>4,920</td>
<td>4,920</td>
<td>100%</td>
</tr>
<tr>
<td>Flexural Strength, psi</td>
<td>560</td>
<td>580</td>
<td>103.6%</td>
</tr>
<tr>
<td>Freeze/Thaw Durability</td>
<td>87</td>
<td>90</td>
<td>103.4%</td>
</tr>
<tr>
<td>Bond Strength, psi</td>
<td>1,160</td>
<td>1,200</td>
<td>103.5%</td>
</tr>
<tr>
<td>Plastic Shrinkage Cracking</td>
<td>79.1% reduction</td>
<td>40% reduction</td>
<td></td>
</tr>
<tr>
<td>Impact Resistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 days, blows</td>
<td>4</td>
<td>8</td>
<td>200%</td>
</tr>
<tr>
<td>28 days, blows</td>
<td>6</td>
<td>10</td>
<td>167%</td>
</tr>
</tbody>
</table>

10. PLACING & FINISHING

Standard placement and finishing techniques are recommended for FiberForce 300 fiber reinforced mixes.

To optimize the slab surface finishing process, make sure that the fibers on the surface of the slab are encapsulated in the concrete matrix.

To improve the quality of consolidation of the concrete,

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 products(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 on-site 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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