



Concrete Admixtures and Fiber

## ULTIMAX

Fibrillated Macrosynthetic Blend

### DESCRIPTION

**ULTIMAX** is a blend of a highly modified fibrillated polyolefin tape fiber and a embossed polyolefin tape, which meet the definition of the new generation FRC, (i.e. macrosynthetic fibers). Macrosynthetic fibers move the envelop forward in 3-dimensional reinforcement performance. Fiber lengths are 1.5” and 2.0” and the dosage range is 3.0 to 11.0 lbs/ Yd<sup>3</sup> (4.0 to 14.0 lbs/ Mt<sup>3</sup>). **ULTIMAX** Macrosynthetic Fibers are designed to perform at a higher level than the first generation microsynthetic fibers. This higher level of performance focused on post-first crack toughness where the fibers become responsible for carrying imposed loads across load created cracks. To perform this task the macrosynthetic fibers must be able to mechanically bond within the concrete matrix and then absorb the applied load to predetermined level. This predetermined level is a percentage of the maximum load developed at the point of first crack of the concrete. **ULTIMAX** fibers have been designed to utilize the physical properties of both polypropylene and polyethylene resins in a unique pairing of a modified fibrillated tape and an embossed tape. This blend of dissimilar materials optimizes the mechanical bonding potential that translates into higher post first-crack toughness numbers, as measured by ASTM Test Methods C1399, C1550 and/or C1609. **ULTIMAX**, when used in the 3.0 to 11.0 lbs/Yd<sup>3</sup> dosage range is typically used in commercial, industrial and warehouse slab-on-ground and elevated steel deck applications as well as exterior slabs-on-ground such as roadways and truck terminals and precast products that include septic tanks and utility vaults. **ULTIMAX** replaces conventional secondary reinforcement, which includes wire mesh and #3 and #4 rebar when used as temperature-shrinkage reinforcement. The in-place cost differential always favors **ULTIMAX** particularly when all of the cost components of placing the conventional secondary reinforcement are considered....including the concrete pump when calculating costs for slabs-on-ground. **ULTIMAX** Fibers comply with ICC-ES AC308 where applicable, ASTM C1116 Type III, Section 4.1.3 and Note 2. ASTM C1399, C1550 and C1609 test data for the **ULTIMAX** product are available.

### TYPICAL APPLICATIONS

Standard placement and finishing techniques are recommended for **ULTIMAX** Fibers reinforced mixes. To optimize the slab surface finishing process, utilize a laser or vibrating screed. The use of a soft cut saw is recommended.

## INTERNATIONAL MATERIALS INDUSTRIES, L.L.C.

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The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability, nothing herein shall constitute a warranty, express or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.

## ENGINEERING SPECIFICATIONS

Conforms to: ASTM C1116, Type III, Section 4.1.3 and Note 2.

Test Reports from Stork-TCT Laboratories, TEC Services and University of British Columbia are available on request by Engineering and Architectural Firms as well as Government Agencies: Federal, State and Local.

### PHYSICAL PROPERTIES

Materia:	100% virgin polyolefin
Absortion:	Negligeble
Specific Gravity:	0.91
Acid & Salt Resistance:	Excellent
Tensile Strength:	70 ksi avg.
UV Resistance:	Excellent
Ignition Point:	1100 °F (590°C)
Fiber Length:	1-1/2" and 2"
Melting Point:	330°F (165°C)
Water Absorption:	Negligeble
Alkali Resiatance:	Excellent
Electrical Conductivity:	Low

**ULTIMAX** Fibers should be added per engineer's instructions or government agency with the dosage rate established by testg or a specific dosage established for a given application. **ULTIMAX** Fibers are packaged in pre-measured degradable bags that can be added directly to the mix.

Concrete mixing planilet personnel should establish the correct mix design based upon the quantity of **ULTIMAX** Fibers being added to the mix. Adjustments to the mix may be required and a mid-range or hi-range water reducer is recommended. **ULTIMAX** fibers may be added to the concrete at any time before, during or after the batching process, with a single exception...bags: may not be added at the same time as the cement. Minimum increase in mixing time may need to be increased to ensure complete dispersion of the fibers. Follow ASTM C-94, "Standard Specifications for Ready-Mixed Concrete" in assembling a homogeneous mix. Please contact AFS if a Letter of Certification for Mono-Tuf is needed to show compliance with the specifications referenced above or specific project requirements.

## 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!