PART 1 GENERAL

1.1 SECTION INCLUDES
   A. Alkali-resistant, natural cellulose concrete reinforcing fiber. (UltraFiber 500).
   B. Alkali-resistant, natural cellulose fiber blend with steel fibers. (UltraFiber 302 Blend).

1.2 RELATED SECTIONS
   A. Section 03 30 00 - Cast-in-Place Concrete.
   B. Section 03 41 16 - Precast Concrete Slabs.

1.3 REFERENCES
   D. ICC Evaluation Service ESR-1032.
   E. ACI 544 Fiber Reinforced Concrete.

1.4 SUBMITTALS
   A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
   B. Product Data: Manufacturer's data sheets on each product to be used, including:
      1. Preparation instructions and recommendations.
      2. Storage and handling requirements and recommendations.
      3. Submit manufacturer's product data, including mixing instructions, dosage rate, and fiber dispersion assessment procedure.
      4. Installation methods.
   C. Manufacturer's Certification:
      1. Submit manufacturer's certification that reinforcing fibers comply with specified requirements.

1.5 QUALITY ASSURANCE
A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
   1. Manufacturer shall have ISO 9001:2000 certification.

B. Installer Qualifications: Minimum 2 year experience installing similar products.

1.6 PRE-INSTALLATION MEETINGS
A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING
A. Delivery: Deliver bagged reinforcing fibers in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, manufacturer, and weight of fibers.

B. Storage: Store reinforcing fibers in dry area in accordance with manufacturer's instructions.
   2. Bulk Packaged Reinforcing Fibers: Install manufacturer's dispensing system in accordance with manufacturer's instructions to provide dry, watertight environment, when bulk packaged reinforcing fibers are loaded into dispensing system.

C. Handling: Protect reinforcing fibers during handling to prevent contamination.

1.8 PROJECT CONDITIONS
A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 SEQUENCING
A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 PRODUCTS
2.1 MANUFACTURERS
A. Acceptable Manufacturer: Solomon Colors, which is located at: 4050 Color Plant Rd.; Springfield, IL 62702-1060; Toll Free Tel: 800-624-0261; Tel: 217-522-3112; Fax: 800-624-3147; Email:request info (sgs@solomoncolors.com); Web:www.solomoncolors.com

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 FIBROUS REINFORCING
   1. Material: Alkali-resistant, natural cellulose fibers.
   2. Average Length: 2.1 mm (0.083 inch).
   3. Average Denier: 2.5 g/9,000 m.
   4. Average Diameter: 18 i (0.63 x 10-3 inch).
   5. Count: 1,590,000 fibers/g (720,000,000 fibers/pound).
   6. Density: 1.10 g/cm3.
   7. Surface Area: 25,000 cm2/g (12,200 ft2/pound).
   8. Average Tensile Strength: 750 N/mm2 (110 ksi).
9. Average Elastic Modulus: 8,500 N/mm² (1,200 ksi).
10. Fiber Spacing: 550 im at 0.9 kg/m³ dosage rate (0.026 inch at 1.5 pounds/cubic yard dosage rate).

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PART 3 EXECUTION

3.1 EXAMINATION
   A. Do not begin installation until substrates have been properly prepared.
   B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION
   A. Clean surfaces thoroughly prior to installation.
   B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 MIXING
   A. Add reinforcing fibers into concrete mixture in accordance with manufacturer's instructions and ASTM C 94.
   B. Add reinforcing fibers at a dosage rate of 1.5 pounds/cubic yard (0.6 kg/m³) of concrete directly into concrete mixer at beginning of batch cycle. Higher dosage rates of 2 - 4 pounds can be used for replacement of welded wire or mild temperature steel. Please refer to manufacturer's recommendations.
   C. Add reinforcing fibers at a dosage rate of 16.5 pounds (7.48 kg) per cubic yard of concrete directly into concrete mixer at beginning of batch cycle. Higher dosage rates of 2 - 4 pounds can be used for replacement of welded wire or mild temperature steel. Please refer to manufacturer's recommendations.
   D. Allow a minimum of 5 minutes at mixing speed in concrete mixer for full reinforcing fiber dispersion.
   E. Concrete shall be as specified in Section 03 30 00 - Cast-in-Place Concrete.

3.4 FIELD QUALITY CONTROL
   A. Confirm uniform fiber dispersion throughout concrete in accordance with manufacturer's instructions.

3.5 PROTECTION
A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION