

**SECTION 03 24 00
SYNTHETIC FIBER REINFORCEMENT**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Polypropylene fibers used as concrete secondary reinforcement.

1.02 RELATED REQUIREMENTS

- A. Section 03 21 00 - Reinforcing Steel.
- B. Section 03 30 00 - Cast-in-Place Concrete.
- C. Section 03 30 54 - Fiber Reinforced Cast-in-Place Concrete

1.03 REFERENCE STANDARDS

ISO 9001 - QUALITY MANAGEMENT SYSTEMS — REQUIREMENTS; 2015, WITH AMENDMENT (2024).

- A. ASTM C 94 - Standard Specification for Ready-Mixed Concrete.
- B. ASTM C 1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
- C. Southwest Certification Services (SWCS), Omega Point Laboratories No. 8662-1.
- D. UL Report File No. R8534-11.

2.02 SUBMITTALS

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including application rate and mixing instructions.
- C. Samples: Submit manufacturer's sample of synthetic fiber reinforcement.
- D. Documentation showing proposed fiber dosage in relation to meeting or exceeding the Re3 (RT150) value.
- E. Submit documentation showing that the synthetic fibers used in composite metal decks are Underwriters Laboratories (UL) rated for floor-ceiling D700, D800 and D900 series designs for assemblies having a 2 hour maximum fire resistance rating.
- F. Manufacturer's Certification:
 - 1. Submit manufacturer's certification that synthetic fiber reinforcement complies with specified requirements.
 - 2. Submit evidence of manufacturer's ISO 9001:2000 certification.
 - 3. Submit evidence of satisfactory performance history of synthetic fiber reinforcement.

2.03 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 - 1. Synthetic fiber reinforcement manufactured in ISO 9001:2000 certified facility.
 - 2. Minimum 3-year satisfactory performance history of specified synthetic fiber reinforcement.

2.04 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver synthetic fiber reinforcement in manufacturer's original, unopened, undamaged containers and packaging, with labels clearly identifying product name, unique identification number, code approvals, directions for use, manufacturer, and weight of fibers.
- B. Storage:
 - 1. Store synthetic fiber reinforcement in clean, dry area indoors in accordance with manufacturer's instructions.
 - 2. Keep packaging sealed until ready for use.
- C. Handling: Protect synthetic fiber reinforcement during handling to prevent contamination.

PART 2 PRODUCTS

3.01 MANUFACTURERS

- A. SI Concrete Systems, 4019 Industry Drive, Chattanooga, Tennessee 37416. Toll Free (800) 621-1273. Phone (423) 892-8080. Fax (423) 892-0157. Website www.siconcretesystems.com <http://www.siconcretesystems.com/???>. E-mail fibermesh@sind.com.
- B. The Euclid Chemical Company, 19215 Redwood Road, Cleveland, OH 44110-2799. Phone (800) 321-7628. Website www.euclidchemical.com.
- C. Fiber manufacturer shall have ISO 9001 certification.

3.02 SYNTHETIC FIBER REINFORCEMENT

- A. Synthetic Fiber Reinforcement: Fibermesh 150.
 - 1. Material: 100 percent virgin homopolymer polypropylene multifilament fibers, containing no reprocessed olefin materials.
 - 2. Conformance: ASTM C 1116, Type III, minimum 2 inch length, and aspect ratio 50 to 90.
 - 3. Fire Classifications:
 - a. UL Report File No. R8534-11.
 - b. Southwest Certification Services (SWCS), Omega Point Laboratories No. 8662-1.
 - 4. Fiber Length: Graded.
 - 5. Alkali Resistance: Alkali proof.
 - 6. Absorption: Nil.
 - 7. Specific Gravity: 0.91.
 - 8. Melt Point: 324 degrees Fahrenheit.
- B. Euclid Chemical Company (The); Tuf-Strand SF
- C. Or Equal

PART 3 EXECUTION

4.01 MIXING

- A. Add synthetic fiber reinforcement to concrete mixture in accordance with manufacturer's instructions.
- B. Add synthetic fiber reinforcement into concrete mixer before, during, or after batching other concrete materials.
- C. Application Rate: Add synthetic fiber reinforcement at standard application rate of 1.5 pounds per cubic yard (0.90 kg/m³) of concrete.
- D. Mix synthetic fiber reinforcement in concrete mixer in accordance with mixing time and speed of ASTM C 94 to ensure uniform distribution and random orientation of fibers throughout concrete.
- E. Concrete shall be as specified in Section 03 30 00 Part 2.

4.02 PLACING AND FINISHING

- A. Placing and finishing concrete shall be as specified in Section 03 30 00 Part 3.

END OF SECTION 03 24 00