

Durafiber™

Tech-Spec Sheet

POLYPROPYLENE FIBERS

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PRODUCT DESCRIPTION

Durafiber polypropylene olefin fiber is a low denier fiber that quickly and easily mixes with the concrete mass creating a very effective multi-directional secondary reinforcement. The use of Durafiber will greatly reduce the formation of plastic shrinkage cracking by increasing the tensile capacity of the paste fraction of the concrete. This reduction of plastic cracks enables the concrete to develop its optimum design strength. Durafiber is most often used as an alternative system to wire mesh in slabs on grade. Durafiber will provide greater impact, abrasion and shatter resistance, reduces permeability, increases freeze-thaw resistance, and, in addition, increases toughness, residual strength and durability.

Applications: Slabs on Grade, Driveways, Parking Lots, Patios, Sidewalks, Shotcrete, Toppings, Septic Tanks, Burial Vaults and other Precast Items.

Product Composition: Durafiber is a 100% polypropylene olefin fiber. Multifilament or Collated Fibrillated. Fiber lengths are 1/4" 1/2", 3/4" and 1 1/2". The 3/4" fiber is the standard size. The fibers are manufactured with an additive to prevent ultraviolet degradation, thus preventing the degradation of any fibers that may be exposed to U.V. A water-soluble dispersant finish is utilized to provide excellent fiber distribution. Durafiber is alkali and acid-resistant and will not corrode in the concrete.

TECHNICAL DATA

Physical Properties

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| Tensile Strength - 80-110 KSI |
| Modulus of Elasticity - 0.55x106 PSI |
| Water Absorption - NIL |
| Alkali Resistance - High |
| Acid Resistance - High |
| Melt Point - 320°F |
| Ignition Point - over 1,000°F |
| Electrical Conductivity - Low |

The technical information listed below represents some of the extensive research and testing that Durafiber has conducted.

Plastic Shrinkage: Test report on crack propagation. The test procedure was developed by Paul Kraai and performed by Wilrick Engineers. Durafiber had up to 100% reduction of plastic shrinkage cracking.

Freeze-Thaw Resistance: Test procedure ASTM C666. Test provided considerable increase in freeze-thaw resistance. H.H. Holmes Laboratories completed this test.

Chemical Resistance: High chemical resistance to alkalis in concrete. Law Engineering performed this test.

Permeability: Test report using the Von Test Water Migration Method showed 62% reduction in permeability. The Hill Bros. Research Lab conducted test.

Bond Strength of Durafiber Reinforced Concrete to Steel: ASTM-C234 comparing concrete containing Durafiber on the basis of the bond development with reinforcing steel. Results indicate Durafiber does not interfere with ability of concrete to bond to reinforcing steel. Law Engineering performed this study.

Compressive, Flexural and Split Tensile: Test procedures ASTM-C39 Compressive, ASTM-C78 Flexural and ASTM-C496 Tensile showed greater or equal results compared to plain concrete. The South Dakota School of Mines completed test.

Impact Resistance: Test Procedure recommended by ACI committee 544. The number of blows to failure is 35% greater than normal concrete. South Dakota School of Mines conducted this test.

Toughness Index: Test procedure ASTM-C1018 to measure the concrete's ability to sustain load after first crack. Durafiber meets and exceeds levels 1 and 2. Tests completed by the south Dakota School of Mines.

Residual Strength Index: Test procedure ASTM C 1399 showed an average RSI of 46 psi at 1.5#/yd³ of concrete.

Related Compliance Testing: ASTM C 173: Air content and Unit Weight.

ASTM C 1116: Standard Specification for Fiber-Reinforced Concrete and Shotcrete.

ASTM C 143: Slump of Portland Cement and Concrete.

ASTM C 231: Fresh concrete Unit Weight.

ASTM C 995: Inverted Slump Cone.

ASTM C 469: Static Modulus

ASTM C 597: Pulse Velocity

ASTM C 1399: Residual Strength

Code Approvals: SBCCI & ICC
Underwriters Laboratories (UL)

Approval: For Durafiber fibers as an alternate or addition to welded wire fabric in floor ceiling D700 and D800, G256 and G514.

INSTALLATION/AVAILABILITY

Durafiber is packaged in pre-measured toss & mix bags with dosages ranging from 1/2# to 3.0# per cubic yard. 1.5# per cubic yard is the standard dosage for meaningful secondary concrete reinforcement properties. Add Durafiber into the mixer and mix 4-5 minutes or 60-70 revolutions at full speed. Durafiber is available throughout the United States. For purchases, or inquiries regarding Durafiber please contact us at 800-243-0097.