

FIBERMESH® I50

PRODUCT DATA SHEET



FIBERMESH® I50 SYNTHETIC FIBER

Fibermesh I50, formerly Stealth® e3®, micro-reinforcement system for concrete—100 percent virgin homopolymer polypropylene multifilament fibers containing no reprocessed olefin materials. Specifically engineered and manufactured in an ISO 9001-2000 certified facility for use as concrete reinforcement at an application rate of 1.5 lbs per cubic yard (.90 kg per cubic meter).* UL Classified. Complies with National Building Codes and ASTM C III6 Type III 4.1.3.

ADVANTAGES

Non-magnetic • Rustproof • Alkali proof • Requires no minimum amount of concrete cover • Is always positioned in compliance with codes • Safe and easy to use • Saves time and hassle.

FEATURES & BENEFITS

- Inhibits and controls the formation of intrinsic cracking in concrete
- Reinforces against impact forces
- Reinforces against abrasion
- Reinforces against the effect of shattering forces
- Reinforces against water migration
- Provides improved durability
- Reduces plastic shrinkage and settlement cracking
- Alternate system to traditional reinforcement when used for secondary (crack control) reinforcing in concrete

PRIMARY APPLICATIONS

Applicable to all types of concrete which demonstrate a need for resistance to intrinsic cracking and improved water tightness and an aesthetic finish.

- Slabs-on-ground
- Stucco
- Slope paving
- Sidewalks
- Curbs
- Exposed aggregate
- Driveways
- Overlays & toppings

CHEMICAL AND PHYSICAL PROPERTIES

Absorption	Nil	Melt Point	324°F (162°C)
Specific Gravity	0.91	Ignition Point	1100°F (593°C)
Fiber Length**	Graded	Thermal Conductivity	Low
Electrical Conductivity	Low	Alkali Resistance	Alkali Proof
Acid & Salt Resistance	High		

*Note: Lower addition rates may be acceptable depending upon local building codes

**Also available in single cut lengths

DO SPECIFY FIBERMESH I50 FIBERS:

- Reduced plastic shrinkage cracking
- Improved impact, shatter and abrasion resistance
- Reduced water migration and damage from freeze/thaw
- Improved durability
- Areas requiring non-metallic materials
- Concrete that needs an architectural finish

DO NOT SPECIFY FIBERMESH I50 FIBERS:

- Crack control from external stresses
- Increasing joint spacing beyond ACI and PCA guidelines
- Decreasing thickness of slabs
- Replacing any moment or structural steel

FIBERMESH® 150

PRODUCT USE

MIXING DESIGNS AND PROCEDURES: Fibermesh® 150 micro reinforcing is a mechanical, not chemical, process. The addition of Fibermesh 150 multifilament fibers do not require any additional water or other mix design changes at normal rates. Fibermesh 150 fibers are added to the mixer before, during or after batching the other concrete materials. Mixing time and speed are specified in ASTM C 94.

FINISHING: Fibermesh 150 micro-reinforced concrete can be finished by any finishing technique. Exposed aggregate, broomed and tined surfaces are no problem.

APPLICATION RATE: The application rate for Fibermesh 150 fibers is 1.5 lbs per cubic yard (.90 kg per cubic meter).*

GUIDELINES

Fibermesh 150 fibers should not be used to replace structural, load-bearing reinforcement. Fibermesh 150 fibers should not be used as a means of using thinner concrete sections than original design. Fibermesh 150 fibers should not be used to increase joint spacing past those dimensions suggested by PCA and ACI industry standard guidelines.

COMPATIBILITY

Fibermesh 150 fibers are compatible with all concrete admixtures and performance enhancing chemicals, but require no admixtures to work.

PACKAGING

Fibermesh 150 fibers are available in a variety of packaging options. Special packaging is available for full truckload addition. Fibermesh 150 fibers are packaged, packed into cartons, shrink-wrapped and palletized for protection during shipping.

*Note: Lower addition rates may be acceptable depending upon local building codes

TECHNICAL SERVICES

Trained Propex Concrete Systems specialists are available worldwide to assist and advise in specifications and field service. Propex Concrete Systems representatives do not engage in the practice of engineering or supervision of projects and are available solely for service and support of our customers.

REFERENCES

- ASTM C 94 Standard Specification for Ready-Mixed Concrete Uniformity Requirements.
- ASTM C 1399 Average Residual Strength of Fiber Reinforced Concrete.
- ASTM C 1436 Standard Specification for Materials for Shotcrete.
- ASTM C 1609/C 1609M Standard Test Method for Flexural Performance of Fiber-Reinforced Concrete (Using Beam With Third-Point Loading). Replaces ASTM C 1018.
- ASTM C 1116 Standard Specification for Fiber-Reinforced Concrete And Shotcrete.
- ACI 304 Guide for Measuring, Mixing, Transporting and Placing Concrete.
- ACI 506 Guide for Shotcrete.
- UL® Approvals for use as an alternate or in addition to welded wire fabric used in floor-ceiling D700, D800 and D900 series designs.
- International Code Council (ICC) NER-414 Evaluation Report.

SPECIFICATION CLAUSE

Use Fibermesh 150 only 100 percent virgin polypropylene fibers containing no reprocessed olefin materials and specifically engineered and manufactured in an ISO 9001-2000 certified facility for use as concrete secondary reinforcement. Application per cubic yard shall equal a minimum of 1.5 lb/yd³ (.90 kg/m³). Fibers are for the control of cracking due to plastic shrinkage, plastic settlement and thermal expansion/contraction, lowered permeability, increased impact, abrasion and shatter resistance. Fiber manufacturer must document evidence of five-year satisfactory performance history, compliance with applicable building codes and ASTM C 1116 Type III, 4.1.3. Fibrous concrete reinforcement shall be manufactured by Propex Concrete Systems, 6025 Lee Highway, Suite 425, PO Box 22788, Chattanooga, TN, 37422, USA, tel: 423 892 8080, fax: 423 892 0157, web site: fibermesh.com.



THE ADVANTAGE CREATORS.™

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07/06



Date: September 28, 2006

Certificate of Compliance: FIBERMESH® 150

This letter is to certify that FIBERMESH® 150 fibers meet our published specifications and the requirements of ASTM C-1116-03, Type III 4.1.3. FIBERMESH® 150 polypropylene fibers are manufactured and tested at Propex Chattanooga facility that has maintained ISO-9001 certification for its systematic approach to quality.

The micro monofilament fibers are made from 100% virgin polypropylene and are designed to separate out in a network of reinforcement that provides early age concrete benefits and toughness. FIBERMESH® 150 has excellent mixing properties and will not ball or clump during normal mixing procedures and conforms to the following properties:

Absorption:	Nil
Melt Point:	324 degrees Fahrenheit
Specific Gravity:	0.91
Ignition Point:	680 degrees Fahrenheit
Fiber Length:	¼” – ¾”
Thermal Conductivity:	Low
Electrical Conductivity:	Low
Alkali Resistance:	Alkali Proof
Acid & Salt Resistance:	High

Thank you for choosing FIBERMESH® 150 fibers. Please do not hesitate to contact Propex Concrete Systems if we can be of further assistance.

Sincerely,

Carl Labbe; Quality Manager

Phil Dyer, PE; Engineering Services Manager

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Legacy report on the 2000 *International Building Code*® the 2002 *Accumulative Supplement to the International Codes*™, the BOCA® *National Building Code/1999*, the 1999 *Standard Building Code*®, the 1997 *Uniform Building Code*™, the 2000 *International Residential Code*® and the 1998 *International One- and Two- Family Dwelling Code*®

DIVISION 03—CONCRETE

Section 03240—Fibrous Reinforcing

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1.0 SUBJECT

- 1.1 Fibermesh® 150 Fibers
- 1.2 Blended Fibermesh 150 e3® Fibers

2.0 PROPERTIES FOR WHICH EVALUATION IS SOUGHT

- 2.1 Reduction of plastic shrinkage cracking in plain concrete.
- 2.2 Reduction of shrinkage and temperature cracking in plain concrete slabs on grade.

3.0 DESCRIPTION

Fibermesh® 150 Fibers are extruded from polypropylene olefin resin and collated in small bundles that distribute upon mixing when added to a concrete mix. The fibers are 1/2 and 3/4 inch in length and used to inhibit plastic shrinkage cracking of concrete.

Blended Fibermesh 150 e3® Fibers are a blend of the 1/2 inch and 3/4 inch length Fibermesh® 150 Fibers.

The fibers are used in plain concrete for inhibiting plastic shrinkage cracking and in plain concrete slabs on grade for reduction of shrinkage and temperature cracking. Proper location and spacing of control joints are required in accordance with the applicable Code.

Structural plain concrete is defined in Section 22 of ACI 318-95 and -99. Use of the fibers shall not reduce the requirements for contraction or isolation joints. Contraction or isolation joints shall be provided in accordance with Section 22.3 of ACI 318-95 and -99.

4.0 INSTALLATION

Fibermesh® 150 and Blended Fibermesh 150 e3® Fibers shall be dispersed uniformly through the concrete mixture according to ASTM C 1116.

The fibers are used at a minimum of 3/4 pound per cubic yard of concrete. Fibers are introduced into the mixer before, during or after the charging operation—at the plant or in the truck mixer at the jobsite. The fibers shall be uniformly distributed throughout the concrete after mixing at rated time and speed. Over-mixing will not alter its performance.

The manufacturer's published installation instructions and this report shall be strictly adhered to and a copy of these instructions shall be available at all times on the job site during installation.

The instructions within this report govern if there are any conflicts between the manufacturer's instructions and this report.

5.0 IDENTIFICATION

Each container of Fibermesh® 150 and Blended Fibermesh 150 e3® Fibers are identified with the manufacturer's name and/or trademark, address and telephone number, product trade name, dosage rate, use instructions and this ICC-ES legacy evaluation report number NER-414 for field identification.

6.0 EVIDENCE SUBMITTED

- 6.1 Manufacturer's descriptive literature and product specifications.
- 6.2 Test reports of Concrete Properties, prepared by H. H. Holmes Testing Laboratories, Inc., Lab. No. CH 2962, File No. 6698.2, dated May 29, 1987, signed by Glenn O. Schumacher and Richard E. Nelson.
- 6.3 Test report on Crack Comparison, STEALTH® Fibers vs. Plain Concrete, prepared by Paul P. Kraai, P.E., Report No. K027-061786, dated June 17, 1986, signed by Paul P. Kraai, P.E.

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- 6.4 Test report on Freeze-thaw Durability in accordance with ASTM C 666, Procedure A, prepared by Wiss, Janney, Elstner Associates, Inc., Report No. WJE No. 885014, dated May 12, 1988, signed by J. Robert Landgren.
- 6.5 Letter report on field exposure test of slabs on grade subjected to two winters of freezing and thawing, prepared by CLM Engineering Associates, Inc., dated June 7, 1988, signed by C. Lee Mason, P.E.
- 6.6 Alkaline solution exposure test prepared by Synthetic Industries, dated March 16, 1988, signed by O.Z.Tyler.
- 6.7 Engineering analysis, evaluation of Blended Stealth® e3™ fibers, blend of 1/2 inch and 3/4 inch fibers, Krazan & Associates, Inc., KA Project No. 096-02069, December 19, 2002, signed and sealed by Timothy G. Beckerle, P.E.

7.0 CONDITIONS OF USE

The ICC-ES Evaluation Subcommittee for the National Evaluation Service finds that Fibermesh® 150 and Blended Fibermesh 150 e3® Fibers as described in this report complies with or are suitable alternates to that described in the 2000 *International Building Code*® the 2002 *Accumulative Supplement to the International Codes*™, the BOCA® *National Building Code/1999*, the 1999 *Standard Building Code*®, the 1997 *Uniform Building Code*™, the 2000 *International Residential Code*® and the 1998 *International One- and Two- Family Dwelling Code*® subject to the following conditions:

- 7.1 Fibers shall not be used as a replacement for any reinforcement required for structural purposes.
- 7.2 Structural design of the concrete shall comply with the applicable building Code.
- 7.3 Fibers shall be blended into the concrete mix in accordance with Section 4.0 of this report.
- 7.4 Contraction or isolation joints shall be provided in accordance with Section 22.3 of ACI 318-95 and -99.
- 7.5 The scope of this evaluation is limited to the properties stated in Section 2.0 of this report.
- 7.6 The fibers shall be used only in normal-weight plain concrete.
- 7.7 This report is subject to periodic re-examination. For information on the current status of this report, contact the ICC-ES.