

ICC-ES Evaluation Report

ESR-1165

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DIVISION: 03 00 00—CONCRETE
Section: 03 24 00—Fibrous Reinforcing
REPORT HOLDER:
PROPEX CONCRETE SYSTEMS CORP.
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EVALUATION SUBJECT:
FIBERMESH® 300 FIBERS, FIBERMESH® 300 e3® FIBERS, FIBERMESH® 150 FIBERS, AND FIBERMESH® 150 e3® FIBERS
1.0 EVALUATION SCOPE
Compliance with the following codes:

- 2009 and 2006 *International Building Code*® (IBC)
- 2009 and 2006 *International Residential Code*® (IRC)
- BOCA® *National Building Code* /1999 (BNBC)
- 1999 *Standard Building Code*® (SBC)
- 1997 *Uniform Building Code*™ (UBC)
- 1998 *International One- and Two-Family Dwelling Code*®

Properties evaluated:

- Fiber durability
- Crack control in concrete

2.0 USES
2.1 Fibermesh® 300 Fibers and 300 e3® Fibers:

These fibers are recognized for use as admixtures to reduce plastic shrinkage cracking in reinforced concrete and to reduce shrinkage and temperature cracking in structural plain concrete slabs on grade.

2.2 Fibermesh® 150 Fibers and 150 e3® Fibers:

These fibers are recognized for use as admixtures to controlling plastic shrinkage cracking of reinforced concrete and structural plain concrete.

3.0 DESCRIPTION

Fibermesh® 300 Fibers are collated fibrillated polypropylene olefin fibers ³/₄ inch (19.1 mm) in length. Fibermesh® 300 e3® Fibers are multi-length-design collated fibrillated polypropylene olefin fibers with fiber lengths of ¹/₂ inch (12.7 mm) and ³/₄ inch (19.1 mm).

Fibermesh® 150 Fibers are extruded from polypropylene olefin resin and collated in small bundles that, when added to a concrete mix, distribute upon mixing. The fibers are ¹/₂ inch (12.7 mm) in length. Fibermesh 150 e3® Fibers are a blend of the ¹/₂-inch (12.7 mm) and ³/₄-inch (19.1 mm) Fibermesh 150 Fibers.

Fibers are furnished in small bundles and are designed to disperse during mixing, when added to a concrete mix. Fibermesh® 300 Fibers and 300 e3® fibers are intended to be used in normal-weight or lightweight concrete. Fibermesh® 150 Fibers and 150 e3® Fibers are intended to be used in normal-weight concrete.

Structural plain concrete provisions are found in Chapter 22 of ACI 318. Use of the fibers must not reduce the requirements for contraction or isolation joints. Contraction or isolation joints must be provided in accordance with Section 1909.3 of the IBC, Section 22.3 of ACI 318 (BNBC or SBC) or Section 1922.3 of the UBC, as applicable.

4.0 INSTALLATION

Fibermesh® 300 Fibers, 300 e3® Fibers, Fibermesh® 150 Fibers and 150 e3 Fibers must be dispersed uniformly through the concrete mixture in accordance with ASTM C1116.

Fibermesh® 300 Fibers and 300 e3® Fibers must be blended into the concrete mix at a rate of 1.5 pounds per cubic yard (0.1 percent by volume) of concrete (0.89 kg/m³). The dosage must not exceed 15 pounds per cubic yard (1.0 percent by volume) of concrete (8.9 kg/m³). Fibermesh® 150 Fibers and 150 e3® Fibers must be blended into concrete at a minimum of ³/₄ pound per cubic yard (0.05 percent volume) of concrete (0.45 kg/m³).

The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the manufacturer's instructions must be available at all times on the jobsite during installation. The instructions within this report govern if there are any conflicts between the manufacturer's published installation instructions and this report.

5.0 CONDITIONS OF USE

The Fibermesh® 300, Fibers and 300 e3® Fibers, Fibermesh® 150 Fibers and 150 e3® Fibers described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** The fibers must not be used as a replacement for any reinforcement required for structural purposes. Structural reinforcement is described in Section 3.5 of ACI 318.

- 5.2 Structural design of the concrete must comply with the applicable building code and ACI 318.
- 5.3 Fibers must be blended into the concrete mix in accordance with Section 4.0 of this report. If there is a conflict between this report and the manufacturer's published installation instructions, this report governs.
- 5.4 Contraction or isolation joints must be provided in accordance with Section 1909.3 of the IBC or Section 22.3 of ACI 318 (SBC or BNBC), or Section 1922.3 of the UBC.
- 5.5 For reinforced concrete, structural reinforcement and shrinkage and temperature reinforcement must be provided as required in Section 1907.12 of the IBC, Section 7.12 of ACI 318-08 (2009 IBC) or ACI 318-05 (2006 IBC) or ACI 318-95 (SBC or BNBC) or Section 1907.12 of the UBC.
- 5.6 Use of fibers must be approved by the registered design professional, if applicable.

- 5.7 A ticket, signed by a weigh master, must be available to the code official upon request. The delivery ticket must include, in addition to the items noted in Section 13.1 of ASTM C94-07 (2009 IBC) or ASTM C94-04 (2006 IBC) or Section 16.1 of ASTM C94-94 (SBC, UBC) or Section 16.1 of ASTM C94-96 (BNBC), the type and amount of fibers added to the concrete mix.

6.0 EVIDENCE SUBMITTED

Data in accordance with ICC-ES Acceptance Criteria for Concrete with Synthetic Fibers (AC32), dated October 2003 (editorially revised December 2010).

7.0 IDENTIFICATION

Each container of Fibermesh[®] 300 Fibers, 300 e3[®] Fibers, Fibermesh[®] 150 Fibers and 150 e3[®] Fibers are identified with the name and/or trademark, and the address and telephone number, of Propex Concrete Systems; the product trade name; the dosage rate; use instructions; and the ICC-ES evaluation report number (ESR-1165).