



**ENDURO**<sup>®</sup>  
BY PROPEX

# PRODUCT DATA • ENDURO<sup>®</sup> MIRAGE<sup>™</sup>



## ENDURO MIRAGE MACRO-SYNTHETIC FIBER

ENDURO MIRAGE<sup>™</sup> (formerly ENDURO HPP) is the latest high performance macro-synthetic fiber developed from the innovative HPP technology which was pioneered and patented by FiberMesh. ENDURO MIRAGE has been specifically designed to reinforce a concrete slab on grade with great finishing characteristics. Specifically engineered and manufactured in our ISO 9001:2008 certified facility for use as concrete reinforcement.

## FEATURES & BENEFITS

- Geometrically engineered to resist matrix pullout
- Increases flexural toughness
- Increases cohesion and reduces segregation
- Increases impact and shatter resistance
- Non-magnetic
- Rustproof
- Chemically inert and alkali proof
- Reduced wear on concrete pumps and hoses
- Safe and easy to handle
- Simplified logistics
- Economical alternative to steel wire mesh and/or steel fibers

## PRIMARY APPLICATIONS

- Slab on ground
- Precast
- Pavement

## COMPLIANCE

- Complies with ASTM C 1116/C1116M Type III Fiber Reinforced Concrete
- Complies with European Standard EN 14889-2: 2006 Fibres for Concrete Part 2: Class II
- ISO 9001:2008 Quality Assured Facility

## CHEMICAL AND PHYSICAL PROPERTIES

Absorption	<i>Nil</i>	Ignition Point	<i>759.2°F (404°C)</i>
Acid & Salt Resistance	<i>High</i>	Melt Point	<i>320°F (160°C)</i>
Alkali Resistance	<i>Alkali Proof</i>	Specific Gravity	<i>0.91</i>
Electrical Conductivity	<i>Low</i>	Thermal Conductivity	<i>Low</i>
Fiber Length	<i>2.1 in (54 mm)</i>	Equivalent Diameter	<i>0.031 in (0.79 mm)</i>

## ADVANTAGES OF ENDURO MIRAGE FIBERS:

- Non-magnetic
- Rustproof
- Alkali proof
- Requires no minimum amount of concrete cover
- Always positioned in compliance with codes
- Safe and easier to use than traditional reinforcement.
- Saves time
- Packaged for easy dosing into the concrete mix
- Fiber engineered for improved finishing characteristics over other macro synthetic fibers

**WE ARE THE CONCRETE FIBER EXPERTS**

[WWW.FIBERMESH.COM](http://WWW.FIBERMESH.COM)



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### PRODUCT USE

**MIXING:** The specified dosage per m<sup>3</sup> or yd<sup>3</sup> should be added to the mixer after batching the other concrete materials. After the addition of the fibers, the concrete should be mixed for sufficient time (batch plant: minimum 5 minutes or 70 revolutions) at full mixing speed to ensure uniform distribution of the fibers throughout the concrete mix. Mixing times may vary, please contact Fibermesh representative.

**PLACING:** ENDURO MIRAGE macro synthetic polyolefin fibers can be pumped, sprayed or placed using conventional equipment.

**FINISHING:** Conventional techniques and equipment can be used when finishing ENDURO MIRAGE fiber concrete.

**APPLICATION RATE:** The application rate for ENDURO MIRAGE macro-synthetic fibers will vary depending on the application, mix design and the toughness requirements of each particular project. ENDURO MIRAGE macro synthetic fiber will have a minimum dosage of 3 pcy (1.8 kg/m<sup>3</sup>) in concrete. For specific performance and dosage recommendations see your local Fibermesh representative.

### COMPATIBILITY

ENDURO MIRAGE fibers are compatible with all concrete admixtures and performance enhancing chemicals.

### SAFETY

No special handling is required with ENDURO MIRAGE macrosynthetic fibers. Full Safety Data Sheets are available upon request.

### PACKAGING

ENDURO MIRAGE macrosynthetic fibers are collated in degradable water soluble wrapped bundles (pucks), packaged in a range of box weights. Other packaging options are available such as bulk bags. Store materials in a cool dry place. Do not store in direct sunlight.

### TECHNICAL SERVICES

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

### REFERENCE DOCUMENTS

- ACI 304 Guide for Measuring, Mixing, Transporting and Placing Concrete
- ASTM C1116/C1116M Standard Specification for Fiber-Reinforced Concrete and Shotcrete
- 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).
- Concrete Society (UK) Technical Report 65 Guidance on the use of Macro-synthetic Fibre Reinforced Concrete
- Concrete Society (UK) Technical Report 66 External In-situ Concrete Paving
- European Standard EN 14889-2: 2006 Fibres for Concrete

### SPECIFICATION CLAUSE

Fibers for concrete shall be ENDURO MIRAGE polyolefin high performance macro-monofilament fiber conforming to ASTM C1116 Type III and manufactured specifically for the reinforcement of concrete

or

Fibers for concrete shall be ENDURO MIRAGE polyolefin high performance macro-monofilament fiber conforming to EN14889-2: 2006 Class II and manufactured specifically for the reinforcement of concrete

The fibers shall be manufactured in an ISO 9001:2008 certified manufacturing facility. Unless otherwise stated, ENDURO MIRAGE macro-synthetic fibers shall be mixed at the batch plant, at the recommended rate of ... lbs/yd<sup>3</sup> (... kgs/m<sup>3</sup>), and mixed for sufficient time (minimum 5 minutes) to ensure uniform distribution of the fibers throughout the concrete mix. Fibrous concrete reinforcement shall be manufactured by Fibermesh, 4019 Industry Drive, Chattanooga, TN. 37416 USA, tel: 800 621 1273, web site: www.Fibermesh.com.

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