

# MasterFiber® M 100

## Monofilament Microsynthetic Fiber

### Description

MasterFiber M 100 product is a high-tensile strength, high modulus of elasticity, ultra-thin monofilament homopolymer polypropylene fiber designed to quickly distribute uniformly throughout the concrete matrix. At the engineered dosage level of 0.50 lb/yd<sup>3</sup> (0.3 kg/m<sup>3</sup>) MasterFiber M 100 product outperforms all other plastic shrinkage fiber reinforcements at their typical dosage of 1.0 lb/yd<sup>3</sup> (0.6 kg/m<sup>3</sup>).

### Applications

Recommended for use in:

- Residential slabs-on-ground
- Commercial slabs-on-ground
- Stucco
- Dry-packaged cement based products
- Precast products
- Pools and pool decks
- Water tanks
- Shotcrete

### Features

- 225 million 0.75 in. (19 mm) fibers in one pound (0.45 kg) of product
- Uniform distribution throughout the concrete matrix
- Excellent finishability

### Benefits

- Excellent reduction in plastic shrinkage cracking
- Transforms macro-cracks into micro-cracks
- Measurably reduces plastic settlement
- Measurably reduces the concrete permeability, thus increasing the durability and service life of the concrete
- Performs as an excellent companion in blends with macrosynthetic fibers and steel fibers

### Performance Characteristics

#### Physical Properties

Specific Gravity	0.91
Melting Point	320 °F (160 °C)
Ignition Point	1,094 °F (590 °C)
Absorption	Nil
Alkali Resistance	Excellent
Tensile Strength	70 ksi (480 MPa)
Modulus of Elasticity	1,230 ksi (8.48 GPa)
Available Lengths	0.5 in. (13 mm) and 0.75 in. (19 mm)
Equivalent Diameter	0.00047 in. (12 microns)
Denier	1 dpf

## Guidelines for Use

**Dosage:** The recommended dosage of MasterFiber M 100 product is 0.50 lb/yd<sup>3</sup> (0.3 kg/m<sup>3</sup>).

**Mixing:** Typically no modifications to the mixture proportions are required when the product is used at the engineered dosage of 0.50 lb/yd<sup>3</sup> (0.3 kg/m<sup>3</sup>). MasterFiber M 100 product fibers can be introduced into the mixing system at any time except when the cement is being introduced. Mixing time will vary based on when the fibers are introduced to the mixer. The normal range is 3-5 minutes of mixing with the higher number preferred when the fibers are added after all of the standard ingredients have been introduced and mixed.

## Engineering Specifications

MasterFiber M 100 product is a uniquely developed fiber to minimize plastic shrinkage cracking in concrete. With 112.5 million fibers in the engineered dosage of 0.50 lb/yd<sup>3</sup> (0.3 kg/m<sup>3</sup>), MasterFiber M 100 product is capable of reducing plastic shrinkage cracking by approximately 85%. Conventional monofilament polypropylene fibers at 1.0 lb/yd<sup>3</sup> (0.6 kg/m<sup>3</sup>) typically do not achieve 70% reduction in plastic shrinkage cracking.

MasterFiber M 100 product meets the requirements of ASTM C 1116/C 1116M, Section 4.1.3, Type III and Note 2 as well as ICC ES AC32, Section 3.1.1 when used at the engineered dosage of 0.50 lb/yd<sup>3</sup> (0.3 kg/m<sup>3</sup>).

## Product Notes

MasterFiber M 100 product is not a replacement for structural steel reinforcement and therefore, should not be used to replace any of the load-carrying steel reinforcement in a concrete element.

## Packaging

MasterFiber M 100 product is packaged in pre-weighed 0.50 lb (0.23 kg) and 2.5 lb (1.13 kg) degradable bags to ensure optimum dosing and homogeneous distribution of the product.

## Related Documents

Safety Data Sheets: MasterFiber M 100 product

## Additional Information

For additional information on MasterFiber M 100 product, contact your local sales representative.

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