

Description

MasterFiber M100 is a unique microsynthetic fiber. There are 225 million 0.75-in. (19-mm) long MasterFiber M100 fibers in one pound (0.45 kg) or 112.5 million fibers in the standard engineering dosage of 0.50 lb/yd³ (0.3 kg/m³) when used as plastic shrinkage reinforcement. This ultra-thin fiber has been engineered to provide the ultimate three-dimensional plastic shrinkage reinforcement.

MasterFiber M100 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 0.5 lb/yd³ (0.3 kg/m³) MasterFiber M100 outperforms all other plastic shrinkage fiber reinforcements at their typical dosage of 1.0 lb/yd³ (0.6 kg/m³).

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 retention tanks

MasterFiber™ M100

Microsynthetic Fiber

Features

- Uniform distribution throughout the concrete matrix
- Excellent finishability
- Excellent reduction in plastic shrinkage cracking
- Transforms macro-cracks into micro-cracks

Benefits

- 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
Melt Point	320 °F (160 °C)
Ignition Point	1094 °F (590 °C)
Water Absorption	Nil
Alkali Resistance	Excellent
Modulus of Elasticity	800 ksi (5.52 GPa)
Tensile Strength	110 ksi (760 MPa)
Tenacity	5.5 g/den
Percent Elongation	<25%
Available Length	0.75 in. (19 mm)

Product Data: MasterFiber M100

Engineering properties:

ICC-ES AC308

Test Criteria	Control (MPa)	MasterFiber M100	% of Control	AC308
Compressive Strength	7,580 psi (52.3 MPa)	7,800 psi (53.8 MPa)	103%	≥ Control
Flexural Strength	780 psi (5.4 MPa)	774 psi (5.3 MPa)	100%	≥ Control
Freeze/Thaw Durability Factor	93.5	95	102%	≥ Control
Bond Strength	21,100 lb (9,590 kg)	21,600 lb (9,820 kg)	102%	≥ Control
Plastic Shrinkage			84%	Min. 40%
Cracking			Reduction	Reduction

Data extracted from Stork-TCT Project No. 325036R2 Dated 15 November 2005.

Guidelines for Use

Dosage: The recommended dosage of MasterFiber M100 is 0.50 lb/yd³ (0.3 kg/m³).

Mixing: Typically no modifications to the mixture proportions are required when the product is used at the engineering dosage of 0.50 lb/yd³ (0.3 kg/m³). MasterFiber M100 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, with the higher number preferred when the fibers are added after all of the standard ingredients have been introduced and mixed.

Packaging

MasterFiber M100 is packaged in pre-weighed 0.50-lb (0.23-kg) degradable bags to ensure optimum dosing and homogeneous distribution of the product.

Product Notes

MasterFiber M100 is not a replacement for structural steel reinforcement. It can not be used to replace any of the load-carrying steel reinforcement in a concrete element.

Engineering Specifications

MasterFiber M100 is a uniquely developed plastic shrinkage reinforcement for concrete. With 112.5 million fibers in the engineered dose of 0.50 lb/yd³ (0.3 kg/m³), MasterFiber M100 is capable of actually reducing plastic shrinkage cracking by 90%. Conventional monofilament polypropylene fibers at 1.0 lb/yd³ (0.6 kg/m³) typically do not achieve 70% reduction in plastic shrinkage cracking. MasterFiber M100 is compatible with admixtures and additives that meet the applicable ASTM specifications.

MasterFiber M100 meets the requirements of ASTM C 1116/ C 1116M, Section 4.1.3, Type III and Note 2 as well as ICC-ES AC308, Section 3.1.1 when used at the engineered dosage level of 0.50 lb/yd³ (0.3 kg/m³).

Additional Information

For additional information on MasterFiber M100, contact your local sales representative.

The Admixture Systems business of BASF Construction Chemicals is a leading provider of innovative admixtures for specialty concrete used in the ready-mixed, precast, manufactured concrete products, underground construction and paving markets throughout the North American region. The Company's respected Master Builders brand products are used to improve the placing, pumping, finishing, appearance and performance characteristics of concrete.

BASF Construction Chemicals
Admixture Systems

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