

03 30 00	Cast-in-Place Concrete
03 40 00	Precast Concrete
03 70 00	Mass Concrete

MasterFiber[®] F 100

Enhanced Fibrillated Microsynthetic Fiber

Description

MasterFiber F 100 product enhanced fibrillated polypropylene fiber is a unique technology that creates additional micro fibrils that are attached to the principle fibrillated network. These additional anchorage sites provide increased bonding between the mortar matrix and the fiber network and enhances the performance of MasterFiber F 100 product as a shrinkage and temperature (secondary) reinforcement. MasterFiber F 100 product complies with ASTM D 7508/D 7508M, ASTM C 1116/C 1116M Section 4.1.3, Type III, and Note 2 and the requirements of ICC ES AC32 Sections 3.1.1 (Plastic shrinkage reinforcement) and 3.1.2 (shrinkage and temperature reinforcement).

Applications

Recommended for use in:

- Residential and commercial slabs-on-ground
- Statuaries/ornamentals
- Marine elements
- Precast steps and other products
- Whitetopping/overlays
- Concrete form elements
- Stucco
- Wall systems

Features

- Excellent bond with mortar
- Excellent distribution
- Excellent finishability

Benefits

- Replacement for typical light gauge welded-wire reinforcement [(6 x 6 W1.4 x W1.4) (152 x 152 MW9.1 x MW9.1)], depending on the application
- Inhibits and controls the formation of plastic and drying shrinkage cracking in concrete
- Improves toughness, impact, shatter and surface abrasion resistance
- Reduces plastic settlement shrinkage cracking
- Enhances long-term durability
- Improves green strength

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
Electrical Conductivity	Low
Thermal Conductivity	Low
Tensile Strength	60,000 psi (415 MPa)
Modulus of Elasticity	800 ksi (5.52 GPa)
Available Lengths	0.25 in. (6 mm) and 0.75 in. (19 mm)
Aspect Ratio	29

Guidelines for Use

Dosage: The recommended dosage for MasterFiber F 100 product is 1.5 lb/yd³ (0.9 kg/m³). This dosage provides excellent secondary reinforcement for residential and commercial slab-on-ground applications.

In accordance with the recommendations of the Steel Deck Institute, fibrillated microsynthetic fibers, including MasterFiber F 100 product fibers, should not be used to replace welded-wire reinforcement in composite metal decks.

Mixing: The MasterFiber F 100 product bags can be introduced at any time during the mixing cycle, except at the same time as the cement. Three to five minutes of mixing will be required to disperse the fibers depending on when the product is added to the mixer. Master Builders Solutions recommends utilizing good concrete mixing practice as outlined in ASTM C 94/C 94M.

Engineering Specifications

MasterFiber F 100 product, at 1.5 lb/yd³ (0.9 kg/m³), is an option for conventional secondary reinforcement in structural plain concrete. MasterFiber F 100 product outperforms other microsynthetic fibers in providing an optimum three-dimensional shrinkage and temperature reinforcement system in concrete. MasterFiber F 100 product meets the requirements of ASTM D 7508/D 7508M, ASTM C 1116/ C 1116M, Section 4.1.3, Type III, and Note 2, and ICC ES AC32, Sections 3.1.1 and 3.1.2.

Placement and Finishing

Master Builders Solutions recommends that the standard practices detailed in ACI 302.1R for placing, finishing and curing concrete be followed when using MasterFiber F 100 product fibers.

Product Notes

MasterFiber F 100 product is not a replacement for primary/structural steel reinforcement. It will not replace conventional structural steel reinforcement where the area of the steel is used in the calculation of the load-carrying capacity of the concrete composite.

Packaging

MasterFiber F 100 product is packaged in pre-weighed bags, 1.5 lb and 2.5 lb, for U.S. trade and 0.9 kg bags for the international market. These bags are degradable and readily break down in a concrete mixing system, ensuring rapid and homogeneous distribution of the product.

Related Documents

Safety Data Sheets: MasterFiber F 100 product

Additional Information

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

Master Builders Solutions, a brand of MBCC Group, is a global leader of innovative chemistry systems and formulations for construction, maintenance, repair and restoration of structures. The Admixture Systems business provides advanced products, solutions and expertise that improve durability, water resistance, energy efficiency, safety, sustainability and aesthetics of concrete structures, above and below ground, helping customers to achieve reduced operating costs, improved efficiency and enhanced finished products.

Utilizing worldwide resources, the Master Builders Solutions community of experts are passionate about providing solutions to challenges within all stages of construction, as well as the life cycle of a structure. At Master Builders Solutions we create sustainable solutions for construction around the globe.

Limited Warranty Notice

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