

03 30 00	Cast-in-Place Concrete
03 37 13	Shotcrete
03 40 00	Precast Concrete
03 70 00	Mass Concrete

# MasterFiber<sup>®</sup> MAC 100

## Macrosynthetic Fiber

### Description

MasterFiber MAC 100 product, a macrosynthetic fiber, is manufactured from a proprietary blend of polypropylene resins, in compliance with ASTM D 7508/D 7508M, ASTM C 1116/C 1116M “Standard Specification for Fiber-Reinforced Concrete.”

### Applications

Recommended for use in:

- Industrial and warehouse floors
- Commercial slab construction
- Concrete pavement
- White topping and overlays
- Thin wall precast
- Shotcrete
- Composite metal decks

### Features

MasterFiber MAC 100 product is specifically engineered for use as shrinkage and temperature (secondary) reinforcement and provides excellent plastic shrinkage control and reduced settlement cracking.

MasterFiber MAC 100 has the following features:

- Uniform distribution throughout the concrete matrix
- Excellent finishability
- Excellent post-first crack performance

### Benefits

- Eliminates the need for welded-wire reinforcement (WWR) and conventional steel bars as secondary reinforcement, depending on the application
- Effective tight crack control
- Provides excellent plastic shrinkage crack reduction and settlement control
- Improves green strengths – permits earlier stripping of forms with less rejection
- Reduces construction time and overall labor and material costs
- Increases flexural toughness, impact and shatter resistance

### 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	60,000 psi (415 MPa)
Length	1.5 in. (38 mm)
Aspect Ratio	59
Chemical Resistance	Excellent

## Guidelines for Use

**Dosage:** The recommended dosage for MasterFiber MAC 100 product is 3 lb/yd<sup>3</sup> (1.8 kg/m<sup>3</sup>). It can be used at dosage rates from 3 lb/yd<sup>3</sup> (1.8 kg/m<sup>3</sup>) up to 13 lb/yd<sup>3</sup> (7.8 kg/m<sup>3</sup>) or the equivalent dosage of 0.2% to 0.9% by volume, unless otherwise specified.

For composite metal deck applications, minimum dosage is 4 lb/yd<sup>3</sup> (2.4 kg/m<sup>3</sup>) as recommended by the Steel Deck Institute.

**Mixing:** MasterFiber MAC 100 product is packaged in pre-weighed, ready-to-use, degradable bags which are designed to be introduced at any time before or during mixing of concrete produced in accordance with procedures specified in ASTM C 94/C 94M.

## Engineering Specifications

MasterFiber MAC 100 product, when used at an appropriate dosage, is an option for the replacement of WWR, as a safe and easy-to-use reinforcing system that is rust proof, alkali resistant, and compliant with Industry codes when used in concrete mixed in accordance with ASTM C 94/C 94M.

MasterFiber MAC 100 product should be specified for use in concrete slabs:

- For enhanced residual strength, toughness & durability
- To reduce plastic shrinkage cracking
- To increase abrasion resistance
- To improve impact resistance
- To reduce permeability

Master Builders Solutions does not recommend the fiber for use in slabs as a replacement for any structural steel reinforcement.

## Storage and Handling

**Storage Temperature:** MasterFiber MAC 100 product should be stored at temperatures below 140 °F (60 °C). Avoid storing near strong oxidizers and avoid sources of ignition. Use caution when stacking to avoid unstable conditions. Store in a sprinkled warehouse.

## Packaging

MasterFiber MAC 100 product is packaged in pre-weighed degradable 3 lb (1.36 kg), 4 lb (1.81 kg) and 5 lb (2.27 kg) bags that can be added directly to the mixing system.

## Related Documents

Safety Data Sheets: MasterFiber MAC 100 product

## Additional Information

For additional information on MasterFiber MAC 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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MasterFiber MAC 100 fiber, as marketed by Master Builders Solutions, is classified by Underwriters Laboratories Inc. for use in the following fire rated assemblies: UL D700, D800 and D900 Series Designs. Fibers to be added to the concrete mix at a maximum rate of 6.0 lb of fiber for each cubic yard (3.6 kg/m<sup>3</sup>) of concrete.