

MasterFiber® 153 SPA

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Polypropylene macro fiber for use in concrete and sprayed concrete

TYPICAL APPLICATIONS

MasterFiber is used for structural purposes in concrete, mortar and sprayed concrete. It is ideal for providing rock support in underground rock support in mines and tunnels.

ADVANTAGES

- Improves the ductility of concrete
- Transfers tensile stresses and bridges cracks in cementitious applications
- Decreases crack propensity due to constrained deformations induced by drying shrinkage and temperature gradients and allows to partially or fully substitute related mesh reinforcement.
- Replace mesh in tunnel rock support.
- Excellent resistance in alkaline and acidic environment

- Provides rust free reinforcing solutions
- Easy to dose with limited impact on workability
- Safe to handle
- No negative impact regarding machinery wear

PACKAGING

MasterFiber 153 SPA / MasterFiber 154 SPA / MasterFiber 155 SPA are wrapped in water-soluble PVA to form bundles.

MasterFiber 153 SPA 5 kg

MasterFiber 154 SPA 5 kg

MasterFiber 155 SPA 6 kg

Other pack sizes available on request.

TYPICAL PROPERTIES*

Polymer type	Polypropylene		
Color	Colourless		
Density	0.91 kg/m ³		
Fiber sectional shape	Irregular		
Fiber longitudinal shape	Straight		
Fiber surface	Embossed		
Equivalent diameter	0.95 mm		
	MasterFiber 154 SPA	MasterFiber 155 SPA	MasterFiber 153 SPA
Fiber length	65 mm	55 mm	35mm
Aspect ratio	68	58	37
Tensile strength (acc. EN 14889-2)	440 MPa		
Modulus (secant) of elasticity (acc. EN 14889-2)	4500 MPa		
Young's modulus	> 7000 MPa		
Melting point T _s	ca. 150 – 170°C		
Ignition point T _i	ca. 350°C		

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APPLICATION GUIDELINES

DOSAGE AND MIXING

Appropriate fiber dispersion can be achieved either by adding the fibers to the aggregate belt or by adding the fibers via a sufficient dosing equipment directly into the mixer or ready-mix truck to the already mixed concrete. While processing attention shall be paid that fibers do not separate or agglomerate (e.g. during discharge to mixer), regarding the latter one special care should be taken that fibers are added to zones with sufficient shear. Our recommendation is to continue mixing for minimum 90-120 seconds after the addition of fibers. Very high fiber dosages may require significantly higher mixing time in order to achieve sufficient fiber dispersion.

Recommended dosage

2.5 - 8.0 kg/m³

Higher dosages are generally possible but substantial re-design of a given concrete mix design is required.

Advice

The addition of fibers to a concrete might decrease its consistency. This should not be compensated by adding water to the mix. The recommendation is to optimize the mix either by adapting the mix design or by adding a superplasticizer. The mechanical performance of fibers is influenced by the concrete mix design and cementitious materials used. In order to evaluate properly preliminary tests under practical conditions with regard to mixing, placing and curing are advisable.

For any further advice, please contact your local technical sales contact.

Combination

Because of its inert nature, these fibers are combinable with all products of the Master Builders Solutions product range. As generally recommended also for combination of these fibers with MasterAir products initial and identity testing should be performed.

STORAGE AND SHELF LIFE

The shelf life is 48 months, if stored in original packaging between +5°C and +30°C protected from humidity and direct sunlight. Protect against fire.

HEALTH AND SAFETY

MasterFiber 151 SPA is extremely stable, presenting little hazard to health. However, in fire conditions, carbon monoxide, carbon dioxide and other gases or fumes may be evolved.

The usual precautions and measures should be taken for handling any chemical substance. For example, use protective gloves and glasses. Wash hands before a break and on finishing work. Do not eat, drink or smoke during application.

The disposal of the product and its packaging is the responsibility of the end user and should be carried out according to current legislation.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory controlled tests.

® = Registered trademark of the MBCC Group in many countries.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions, are responsible for carrying out procedures appropriate to a specific application.

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