

# MasterFiber I43

Polypropylene fibre for reinforcement in sprayed concrete and cast concrete applications as alternative and/or supplement to existing concrete reinforcement products

## Material Description

**MasterFiber I43** is engineered for use as secondary reinforcement to control shrinkage, settlement and temperature cracking both in sprayed and cast in-situ applications. The inclusion of **MasterFiber I43** in a concrete mix will contribute to improving the durability of concrete by increased crack propagation resistance and by its energy absorption characteristics. The fibres will disperse uniformly throughout the concrete mix and act as an anchoring mechanism within the cement matrix thereby improving the toughness and ductility of the material.

**MasterFiber I43** can maximize concrete service life by providing superior resistance to attack from damaging environmental elements such as water, chlorides and corrosive environments such as sewerage conduits and/or saline water.

## Areas of Application

**MasterFiber I43** is appropriate for use in ground supported slabs, industrial flooring, pavement, and precast elements.

**MasterFiber I43** can also be used in shotcrete applications for increased energy absorption and reduced rebound.

**MasterFiber I43** increases:

- Concrete durability
- Toughness
- Post-residual flexural strength

**MasterFiber I43** decreases:

- Hardened shrinkage
- Shotcrete rebound
- Manual labour

## Characteristics and Benefits

- Easy to dose either at the batch plant or on site concrete mixer truck prior to application
- Only minor impact on flow & slump properties of fresh concrete

- High resistance to acid/alkalis attack suitable for use in wet underground conditions and subsurface constructions exposed to damp conditions
- Reduces labour, construction, transport, and storage costs compared to a solution with conventional reinforcement

## Properties

Polymer type	Virgin polypropylene
Colour	Colourless
Shape (Cross section)	Rectangular
Shape (Longitudinal)	Straight
Surface	Embossed
Thickness (approx.)	0.6mm $\pm$ 10%
Width (approx.)	1.2mm $\pm$ 10%
Length	47mm
Tensile strength (EN 14889-2)	550 MPa
Modulus of Elasticity (EN 14889-2)	10 GPa
Density	0.91g/cm <sup>3</sup>
Melting point (°C)	Approx. 170°
Acid/alkali resistance	High
No. of fibres per kg	28000

## Dosing & Batching

Add fibres to the concrete mixer after water and admixtures. After addition of the fibres mix for at least 2-3 minutes to ensure even distribution of fibres within the concrete mix. Note that in the event that a slight slump loss is experienced after the addition of the fibres – the mix design should be reviewed such to allow for fibre inclusion and avoidance of addition of extra water.

Site trials with the intended concrete mix design must be conducted to verify and determine the performance of the fibre with the proposed sprayed concrete mix.

It is recommended that where automated fibre dosing systems are utilised, that they be checked for suitability and calibrated accordingly.

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## Packaging

1 pallet of **MasterFiber I43** is made up of:

- 114 x 5kg mulchable boxes = 570kg per pallet
- 225 x 2.5kg mulchable boxes = 562.5kg per pallet

Each pallet is covered by a waterproof cover.

**MasterFiber I43** is wrapped in water-soluble PVA to form bundles.

## Storage & Shelf Life

**MasterFiber I43** is to be stored undercover and protected from the weather.

## Note

Field service support, where provided in no way constitutes supervisory responsibility. For additional information please contact your local Master Builders Solutions representative. MB Solutions reserves the right to have the true cause of any technical challenge determined by accepted test method.

## Disclaimer

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### STATEMENT OF RESPONSIBILITY

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#### MB Solutions Australia Pty Ltd

ABN 69 634 934 419

Suite 102, 2 Burbank Place

Norwest NSW 2153

**Freecall: 1300 227 300**

[www.master-builders-solutions.com/en-au](http://www.master-builders-solutions.com/en-au)

#### MB Solutions New Zealand Ltd

45C William Pickering Drive

Albany, Auckland

New Zealand

**Phone: +64 9 414 7233**

#### Emergency Advice:

1300 954 583 within Australia (24hr)

0800 001 607 within New Zealand