MasterFiber 143

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

Material Description

MasterFiber 143 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 143 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 143 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 143 is appropriate for use in ground supported slabs, industrial flooring, pavement, and precast elements. MasterFiber 143 can also be used in shotcrete applications for increased energy absorption and reduced rebound.

MasterFiber 143 increases:
- Concrete durability
- Toughness
- Post-residual flexural strength

MasterFiber 143 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 ± 10%
Width (approx.)	1.2mm ± 10%
Length	47mm
Tensile strength (EN14889-2)	550 MPa
Modulus of Elasticity (EN14889-2)	10 GPa
Density	0.91g/cm^3
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 143** is made up of:

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

Each pallet is covered by a waterproof cover.
MasterFiber 143 is wrapped in water-soluble PVA to form bundles.

Storage & Shelf Life

MasterFiber 143 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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