

MasterFiber® 151

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

DESCRIPTION

MasterFiber 151 is a fiber extruded from polyolefin polymers and formed into a flat fiber that can be used in concrete mixes for both spray and cast in-situ applications. The inclusion of fibers in a concrete mix will contribute to improving the durability of concrete by increased crack propagation resistance and by its energy absorption characteristics. The fibers will disperse uniformly throughout the concrete mix and effectively act as an anchoring mechanism within the cement matrix thereby improving the toughness and ductility of the material.

MasterFiber 151 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.



APPLICATIONS

Recommended for use in:

- Wet shotcrete applications in tunneling or mining applications
- Any subsurface construction
- Any structure where impact toughness shall be increased

FEATURES & 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 construction time compared to a solution with conventional reinforcement.

PACKAGING

MasterFiber 151 is wrapped in water-soluble PVA to form bundles. Bundles are filled either in 6kg transparent bags or in big-bags of 450kg.

TYPICAL PROPERTIES*

Polymer Type	Polyolefin
Colour	Colourless
Shape (Cross Section)	Flat
Shape (Longitudinal)	Straight
Equivalent diameter deq	0.85 mm +/- 50 %
Length L	50 mm +/- 10 %
Aspect ratio L/deq	59 +/- 50 %
Tensile Strength (EN 14889-2)	490 MPa +/- 15 %
Secant Modulus (EN 14889-2)	4.000 MPa +/- 15 %
Density	0.91 g/cm ³
Melting point (°C)	160-167 °C
Acid/Alkali resistance	High
No of fiber per kg	40000
Shelf-life	24 month

DOSAGE & BATCHING

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

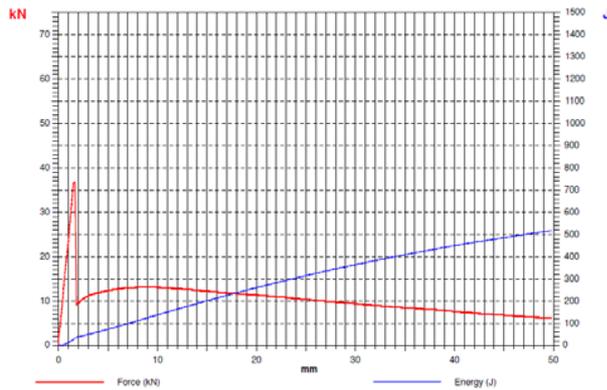
Site trials with the intended concrete mix design must be conducted to verify and determine the performance of the fiber with the proposed sprayed concrete mix.

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

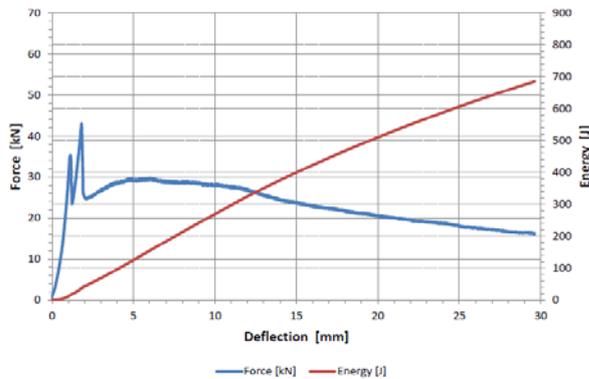
MasterFiber® 151

TYPICAL PERFORMANCE DATA

With 8kg/m³ **MasterFiber 151** more than 280 J at 25mm deflection and 400 J at 40mm deflection determined according to ASTM C-1550 have been achieved in a C40 concrete.



8kg/m³ **MasterFiber 151**, ASTM C-1550 test EFNARC panel tests have shown that for a 30MPa sprayed concrete with 5kg/m³ **MasterFiber 151** an energy absorption value of 600 J can be achieved.



5kg/m³ **MasterFiber 151**, 425kg/m³ CEM II/A-LL 42.5N, w/c = 0.47, 4.4 % **MasterRoc SA 167**, 1,20 % **MasterRheobuild UG 3**, EFNARC test

STORAGE

Material is very stable, no foreseen hazards. Opened bags shall be protected from humidity. Big-bags should be kept dry in case of longer storage on side. Protect against fire.

SAFETY PRECAUTIONS

Material is extremely stable, presenting little hazard to health. In the event of fire it should be noted that the product may produce carbon monoxide, carbon dioxide and other gases.

NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

QUALITY AND CARE

All products originating from BASF's 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, ISO 14001 and OHSAS 18001.

* Properties listed are based on laboratory controlled tests.

® = Registered trademark of the BASF-Group in many countries.

BASF_CC-UAE/MFiber_151_01_16/v1/

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this BASF 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 BASF either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not BASF, are responsible for carrying out procedures appropriate to a specific application.