

MasterFiber 080

Synthetic polypropylene micro-fibers for the prevention of plastic shrinkage and for the reduction of the concrete spalling phenomenon because of fire, in water soluble paper bags.

Description

MasterFiber 080 fibers are polypropylene micro-fibers agglomerated in flake form. They are characterized by a high specific surface area and are specially designed to prevent plastic shrinkage of concrete and cement-based mixtures, as well as to prevent and reduce the explosive peeling - firing effect of concrete. MasterFiber 080 micro fibers is a CE marked product, according to EN 14889-2 standard (Polymer for concrete). Also based on fire tests carried out, it is a certified product as BBG Fire Protection Fiber, in accordance with the Austrian Construction Technology Association Directive (ÖBV Österreichischen Bautechnik Vereinigung): **"Increased Structural Fire Protection for Underground Projects of Concrete"**, issued on April 2015. <<OVBB Richtlinie Erhohter baulicher Brandschutz für unterirdische Verkehrsbauwerke aus beton>>, April 2015, für die Einstufung in die Brandklasse BBG erfüllen.

Fields of application

MasterFiber 080 are packaged and weighed in a special water-soluble package.

Used for the production of concrete related to:

- architectural and industrial floors,
- prefabricated elements,
- concrete for the Final Lining in tunnels / segments, to prevent explosive peeling – spalling, providing increased Structural Fire Protection - Firefighting concrete.



Micro Fibers MasterFiber 080

Properties: cracking and fire resistance of concrete

The role of the MasterFiber 080 micro synthetic fibers is to limit the shrinkage cracking of cement-based materials during the short curing period. MasterFiber 080 synthetic micro fibers are particularly suitable for use in cementitious matrices due to their high adhesion to the matrix and their high chemical resistance in an alkaline environment.

MasterFiber 080 synthetic micro fibers are perfectly dispersed and evenly distributed in the fresh mix.

- Significantly reduce the shrinkage of mortar and concrete during the plastic phase.
- Better coherence and reduction of separation and separation phenomena.
- In the fresh phase they facilitate the finishing and of the surfaces, while in the hardened phase they contribute to the acquisition of a more durable cement paste structure. The concrete structure is free of cracks and therefore more resistant to attack by aggressive agents.

Main interesting application of the MasterFiber 080 polypropylene micro fibers, is to improve the fire resistance of concrete structures and to reduce the explosive peeling effect of concrete cover exposed directly to fire.

This is due to the fact that, as the temperature rises, the moisture in the capillary pores evaporates partly to the outside environment and partly to the inside of the structure where it can condense to form a layer of water which prevents further vapor movement. This obstruction creates pressure in the cortical area of the concrete which, having exceeded the tensile strength of the material, is responsible for the phenomenon of peeling off the cortical walls.

The addition of MasterFiber 080 fibers, (in the alternative to MasterFiber 246 polypropylene structural fibers, can dramatically reduce the damage caused by the fact that, as the temperature rises due to fire, the fibers melt (at 150 ÷ 170°C) leaving additional porosity within the mass-structure of the

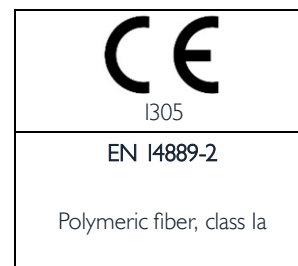
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concrete (depending on the dosage and number of fibers in the mass), where the water vapor produced by the heating of the material can be diluted by reducing the pressure which is responsible for the explosive peeling effect.

It thus offers certified increased structural fire protection essential to underground concrete structures.

In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the product is provided with the CE marking according to UNI EN 14889-2 and the relative DoP (Declaration of Performance).



Technical Information	
Fiber class	Ia
Water adsorption	null
Alcaly Resistance	high
Melting point (° C)	150-170
Essential characteristic in accordance to EN 14889-2	Performance
Type of polymer	polypropilene
Colour	Transparent
Density [kg/m ³]	910
Linear density [dtex]	6.6
Longitudinal shape	straight
Section shape	circular
diameter [mm]	0.018
Length [mm]	6
Length / Diametre Ratio	400
Tensile strength (N/mm ²)	600-700
Toughness [cN/dtex]	4.8
Effect on the consistency of the concrete [fiber dosage in kg / m ³ , Vebe time in s with fibers]	0.9 7.2

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Dosage

The general recommended dosage of synthetic micro fiber MasterFiber 080 is 0,6 ~ 3,0 kg per m³ of concrete.

For use in the construction of underground road and railway projects to counter the explosive exhaustion effect of fire, a MasterFiber 080 micro fiber dosage of 1,6 kg per m³ of concrete is recommended.

Different dosages are possible with respect to specific jobsite working conditions and requirements.

Packaging and storage

MasterFiber 080 micro synthetic fibers are available in pre-dosed 1,0 kg water soluble paper bags.

The packages are delivered in cardboard boxes with a total content of 18 kg (18 pieces).

It is recommended to store the packages in a dry place not in direct contact with the floor (preferable on top of wood pallets).

Method of use

MasterFiber 080 synthetic micro fibers must be added to the dry ingredients before mixing or directly to the concrete mixer or to the ready mix before casting. In any case, a few minutes of mixing is sufficient to achieve a good dispersion of the fibers. **It is recommended that you do not add MasterFiber 080 micro fibers directly to the mixing water before adding any other concrete components.**

Compatibility

MasterFiber 080 are compatible with all the other admixtures manufactured by Master Builders Solutions Italia Spa.

Safety information

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

Other services

For additional technical information, brochures, references, technical reports and technical support please visit www.master-builders-solutions.com/it-it or alternatively contact infomac@masterbuilders.com.

Scan QR code to visit the product page and download the latest version of this technical data sheet and any additional documentation.



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Disclaimer

Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.

Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.

This version supersedes all the previous ones.

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