



Very
High
Durability
Reinforced
Concretes



Certified Quality System since **FEBRUARY 1993**

From Project to Jobsite

FIB-energy® MC

FIB-energy® MC SYNTHETIC REINFORCEMENT FIBRES WITH HIGH FRACTURE ENERGY VALUES

Description FIB-energy® MC are special polymer fibres with high Elasticity Modulus, designed for the improvement of the mechanical properties of concrete and mortars allowing to obtain Mix Designs such as HFE-tec® - High Fracture Energy Technology.
The fibres are superficially treated to have an optimal adhesion with the interfacing cement matrix. FIB-energy® MC meets the requirements of UNI EN 14889 – 2.

Advantages

- Optimal dispersion in concrete and mortars
- Excellent tensile strength, pull-out, elasticity modulus and adhesion in cement based products.
- Alkali resistant
- No deterioration by UV rays nor in aggressive environments.
- Easy to use and to handle
- Ecological and chemical inert
- No health risks
- Increase of tenacity, ductility (fracture energy), shock resistance (resilience) of the concretes and mortars formulated with FIB-energy® MC fibres.

Use

- The FIB-energy® MC fibres can be used in each type of concrete in all types of exposition classes according European Normalisation EN-206.
- Specifically suitable for concrete which is applied in strong aggressive environments (e.g. sea water or chemical industrial floors where metal fibres can not be used due to corrosion).
- Everywhere where an increase in FRACTURE ENERGY OR DUCTILITY is required.
- Against fire, allowing the escape of gas developed without internal overpressure. Do not develop dioxin when combusted.

NOTE : Our Ufficio Assistenza e Promozione Progettuale has designed Special Mixtures that can be used in seismic sensitive areas.

The engineers of our Ufficio Assistenza e Promozione Progettuale are at your disposal for technical assistance to assure an optimal use of the FIB-energy® MC and for the set-up of special Mix Designs.

Fields of application

Infrastructural

- Structural elements of bridges and viaducts : ceilings, cross sections , pillars, connecting elements etc, especially in seismic sensitive areas.

Industrial flooring

- Pavements with increased static and dynamic loads
- Parking and transit areas
- Pavements without shrinkage-or joints.
- Warehouses, storage rooms, harbour loading areas, gas stations, freezing cells,...

Prefabrication

- Supporting and external walls
- Sewer tubes, biological depositing units, potable water reservoirs ,connecting tubes.
- Electrical and phone cabinets
- Waste pipes and various utility canalisations
- Pavements for heavy traffic and railway sleepers .
- Reservoirs for waste waters and secondary containment walls
- Niche applications



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Railway and Highway Tunnels- Overhead applications

- For structural dry spray concrete also with increased fire resistance.
- Internal coating for tunnels
- Walls, rocks, roads
- Underground, heavy duty structures

Private buildings

- Foundation slabs and beams
- Sealing, pillars
- Reinforcement in connection with other materials (wood ,iron,...)

Application The fibres are suitable to be added directly in the mortar or concrete, during the first phase of mixing.

Packaging FIB-energy® MC 40/8 : bags of 18 kg
FIB-energy® MC 200/12 : bags of 10 kg
FIB-energy® MC 310/15 : bags of 8 kg
FIB-energy® MC 660/30 : bags of 10 kg

Technical data
(typical values)

- Chemical composition Polyvinyl alcohol
- Form Monofilament specially treated
- Specific weight 1,3 Kg/lt
- Resistance for acids ,salt and alkali Completely resistant

TIPE	DIAMETER	LENGTH	TENSILE STRENGHT	ELASTICITY MODULUS	MORTARS AND CONCRETES WITH MAX DUCTILITY AND RESISTANCE	DOSAGE	DOSAGE
						Vol %	Kg/m³
	µm	mm	GPa	GPa			
FIB-energy® MC 40/8	40	8	1.6	42	mortars + concrete-ECC	0.05-0.10 1.5-2.5	0.65-1.3
FIB-energy® MC 200/12	200	12	1.0	30	mortars + concrete-ECC UHPP	1.5-2.5	9-15
FIB-energy® MC 310/15	310	15	1.0	29	mortars + concrete-ECC UHPP	0.7-1.2	9.1-15.6
FIB-energy® C 660/30	660	30	0.8	29	concrete-ECC UHPP	0.8-1.6	10.4-20.8

ECC = Engineered Cementitious Compositions
UHPC = Ultra High Performance Concretes
1 Gpa = 1000 Mpa

Safety Read carefully the safety indications on the packaging, or consult the relevant Material Safety Datasheet of this product.

The above data derive from our best actual practical and laboratory knowledge and are the result of applications of the product in different fields of use. Tecnochem Italiana cannot be held responsible for negative or inadequate results that are due to improper use of the product or due to causes unconnected to the quality of the product including the storage. The technical characteristics and performance contained in this datasheet are periodically updated. This datasheets replaces and supersedes the previous versions, and the data will be updated periodically. The revision data are indicated in the specific field. The site www.TECNOCHEM.IT contains the updated datasheets , which are updated in real time.

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