1. Product

FIBRACEM

2. Definition

100 % virgin polypropylene fibre, obtained from polymer monofilaments following cutting-edge systems for extrusion and spinning. This provides the product with the highest standards of quality and suitable characteristics for ideal complementation of concrete and mortar, used as additive.

Used for concrete and mortars reinforcement.

3. Properties

- High tenacity
- High flexibility
- High tensile strength
- Homogenous distribution and high adhesion on the concrete matrix.
- Resistant to concrete and alkalis aggregates.
- It is environmentally sustainable as the material is inert and harmless to nature.

4. Characteristics

CE

9003712 -1035
GEOTEXAN S.A.
Year of CE marking acquisition: 2009
Standard UNE-EN 14889-2 Fibres for concrete (polymeric fibres, definitions, specifications and conformity)

Characteristics	Test specimen	Unit	Value
Density	-	g / m3	0.91
Humidity	-	%	2.65
Fluidity	EN ISO 1133	g/10′	6.12
Section	-		circular
Colour	-		natural
System	-		monofilaments
Young's modulus	-	kN/mm2	3.5
Young's modulus	-	MPa	300 -400
Heat deflection temperature	ISO 11357-3	ºC	110
Decomposition temperature	ISO 11357-3	ºC	280
Flash point	ISO 11357-3	ºC	164.41
Consistency on concrete	EN ISO 12350-3	seconds	11.6
Fibre length	-	mm	12
Doses	-	g / m3	600
Lineal density	EN ISO 1973	dtex	6.70
Tenacity	EN ISO 5079	cN/tex	40(± 5)
Diameter	-	µm	31

This product must not be classified as hazardous in accordance with the CE regulation (67/548/CEE-88/379/CEE).. Therefore, no especial marking will be added.

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5. Area of application

Main applications:

- Conventional pavements and industrial floors.
- Highly-resistant concrete (dykes, docks, plane runways, etc.)
- Extruded concrete.
- Pre-manufactured concrete.
- Roads.
- Weak concrete.
- Concrete slabs.
- Gunites.

6. Advantages resulting from it use

Used as additive on concrete and mortars:

- High chemical resistance, both in acid and basic mediums.
- It reduces the cracks emerging by shrinkage, quick drying or temperature gradient. It decreases the strain generated during the cement hydration process, delays evaporation and reduces exudation.
- It reduces plastic settlement.
- It reduces the concrete permeability, which enlengthens its durability as it reduces the inner formation of ice and prevents corrosion of the inner metallic structures.
- Multi-directional reinforcement of concrete, intersecting fissures from the time of emergence.
- It increases impact resistance, dimensional stability, fire resistance and the tenacity rate of hardened concrete. Maximum protection on edges and corners thanks to the perfect homogenisation of fibres in the concrete mass.
- It increases the mechanical properties (abrasion, compression, bending) of hardened concrete.
- It decreases fragmentation.
- It absorbs energy in the whole mass of the concrete thanks to its uniform multi-dimensional distribution.
- It reduces significantly the risk of spalling in highly-resistant concrete employed for tunnel building, contributing to a greater amount of passive safety.
- It reduces workforce costs.
- The material supports any additive for concrete given its non-absorbent capacity.

7. Operating instructions

FIBRACEM is presented in water-soluble bags of 600 g, which can be employed both dry and after water dosing.

The mixture obtained must adapt to the granular composition of the aggregates, the type of mixer employed, the concrete plasticity and the load moment to support.

- In the industrial plant, the bags will be introduced into the mixer, preferably before the components' dampening.
- On site, the bags will be introduced into the concrete mixer truck and mixed for 5 to 8 minutes to disperse the fibres properly.

The cements employed will comply with the regulations in force, as well as with the doses. The amount of water added must always be in accordance with the regulations in force and not exceed the proportion water/cement of 0.60. The additives employed can be fluxing agents or plasticiser, always complying with the regulations in force.

For your safety, they must be used at temperatures lower than 40 ºC, to prevent the polypropylene plasticising.

Recommended dosing: One bag of 600 g each m_3 of concrete. Mixing time: 50 sec/m^3 in concrete mixer truck and 30-45 sec/m^3 in the concrete plant mixer.

For highly-resistant concrete, a dosing of 1kg/m_3 is recommended.