



# FIBERCEM

## DESCRIPTION

Polypropylene filaments at high molecular weight; the fibres are of regular and uniform shape without ramifications or fibrillation.

The nominal diameter is of about 19 micron, the weight is of 2,2, grams for 10 kilometres of a single filament (above 150,000,000 fibres of 18mm in a 600 grams packet).

The FIBERCEM is very resistant to acids and alkalis and it is perfectly stable to the ultra violets rays to bacteria and moulds , it has a remarkable adhesion to concrete thanks to the chemical ties which take place (Hydrogen bridges between CN fibres groups and Oh of Hydrated silica of the cement matrix).

Because of its dimensions FIBERCEM can not be inhaled and therefore is not harmful to the workers and users.

## STANDARD SPECIFICATIONS OF FIBERCEM

Length in mm.	18
Diameter	2,8 dtex
Water absorption	nil
Density	0.91
Traction resistance	400-500 Mpa
Elastic Modulus	7-9 Gpa
Fire reaction 2 of CCE directive	The product is not inflammable as stated in article No.67/458 but is inflammable and it burns very slowly.
Durability	Optimum resistance to acids, to bases and chemical agents present in the cement mixes.

The concrete prepared with FIBERCEM has the following characteristics.

- Higher resistance to compression in the range of 10% having still a remarkable residual load capacity after the rupture of the cement matrix up to the rupture of the fibres.

- Higher resistance to bending in the range of 20%; furthermore the rupture it happens in a progressive way and not at once, because fibres, sowing small fractures, absorb kinetic energy until their complete rupture.

- Higher resistance to the impact because fibres provide to the concrete an higher capacity to absorb pure energy prior complete rupture. Example the absorbed energy during a 10 mm bending has a value of 2-8 N/mm for the concrete without fibres to about 40 N/mm in a fibres reinforced concrete



- Three dimensional reinforcing action; Billions of fibres randomly distributed in side the mix perform their action in the three dimensions therefore, in a more efficient way compared to a normal welded mesh which acts always on a single plain.
- Reduced hair cracks and micro fractures in the concrete (especially on the external part) because FIBERCEM allows an higher retention of mix water, in the first 2-4 hours and avoids quick evaporation which is the primary cause of formation of hair cracks, Which also in cases where they could develop in a limited amount they would encroach the various fibres who would sow them to the main concrete body; furthermore water flows away and evaporates in an homogeneous way along the whole surface using the billions of micro channels avoiding so differential shrinkage actions

## **MANUFACTURE SIZES**

FIBERCEM is available in bags of 600 Grams

## **QUALITY**

We hereby certify that this product is prepared in accordance with the international standards, is continuously tested in appropriate laboratories and checked prior any shipment; it is therefore a “GOOD QUALITY” Product.

### **IMPORTANT:**

What's in this data sheet is based on best knowledge derived from practical experience and laboratory. This document cancels and replaces the previous ones. The data can be modified at any time. The customer has the responsibility to verify that the product is suitable for the application they want to perform. The manufacturer assumes no responsibility for the results of incorrect applications. It is strongly recommended to test the product on a small area before application. The product is for professional use. The International Stone regularly organizes training courses for its customers who request it. Those who use these products without being entitled do so at their own risk.

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