



newcrete S - for improved coherency (spray)

PRODUCT PAGE



fiberfor
engineered construction solutions

newcrete S - for improved coherency (spray)

The Problem

Depreciation

Certain applications, such as sprayed concrete, demand a high coherency level of the cement plaster mix. In the concrete spraying process, a significant portion of the sprayed concrete (~ 20%) falls from the coated wall to the ground, where it becomes waste that must be treated.

Cracking

Low coherency of sprayed concrete also causes plastic cracking, created in the first stages following the sprayed application, during the initial setting of the cement plaster mix.

Bonding

A higher concrete coherency is required to improve the concrete's bonding with the wall it is covering, to accelerate the setting and solidification of the cement matrix and acquire the necessary strength in a relative short period of time.

The Solution

Improved concrete coherency causes the matrix to have a higher energy absorption capacity and greater durability in the sprayed concrete's contact with the wall.

The fibers are specially adapted for an increased concrete coherency and improved spraying process. The increased bonding between the sprayed aggregates prevents pop-outs from the wall and enables the construction of a greater coat thickness. The coherency improves the spraying's effectiveness, the rate of spraying increases (while reducing the number of required coats) and reduces depreciation.

The concrete's coherency develops through the use of the fibers that serve to improve the surface quality of the sprayed concrete mix, prevents plastic cracking and aids in the curing process.

The fibers are thin microfibers with a high ratio length/diameter. The geometric properties create a labyrinth that increases the coherency.

The fibers' flexibility strength and energy absorption capacity enables greater durability of the sprayed mix in its contact with the wall.

Furthermore, the fibers are specially adapted to restrain plastic cracking and cracking caused by hosted drying of the concrete.

Capabilities and Benefit

The fibers improve the spraying process in that it prevents depreciation, accelerates material solidification and prevents cracking.

In applications in which polymer or steel fibers are necessary for construction reinforcement, the addition of nylon fibers supplements these fibers' capabilities and upgrades the cementic matrix's performances, i.e., coherency, cracking and curing. The fibers aid in the following parameters:

- ▶ Reduced depreciation and pop-outs
- ▶ Builds a thicker coat
- ▶ Accelerates building of material strength
- ▶ Prevents Plastic Cracking
- ▶ Improves the spraying surface
- ▶ Improves Concrete Coherency
- ▶ A clean and safe application process
- ▶ Provides solutions for spraying on problematic ceilings and structures
- ▶ Internal Curing
- ▶ Receive high strength
- ▶ Improves concrete flow in the spray piping

Advantages

In contrast to the other solutions offered in today's market, thanks to the nylon fibers' mechanical and chemical properties, it is possible to obtain high fiber contents, for greater surface areas, strengths and flexibility, to improve significantly the concrete's coherency.

Correct use of newcrete S fibers enables a savings in resources and processes required with other fibers; curing frequency, the amount of depreciation and the creation of cracks, alongside a significant improvement in strength and flexibility that improves the performance of spray concrete.

Primary Applications

The fibers may be used in a wide variety of applications:

- ▶ Tunnels
- ▶ Ceilings
- ▶ Slopes
- ▶ Structural Restoration
- ▶ Cellars
- ▶ Parking Garages
- ▶ Cladding (Wall Coverings)
- ▶ Protective Walls
- ▶ Water Reservoirs
- ▶ Plaster and Stucco (Regular and Imported)

Product Properties

The fibers are microfibers, with a high length/diameter ratio, made from 6.6 nylon and a patented protected, uniquely thin structure.

The fibers are characterized by the mechanical properties of strength, flexibility and highly energy absorbent to blows, contributing to an efficient spraying process.

The fibers are characterized by chemical properties that enhance their hydrophilic attributes, their bonding capacity in concrete and consequently improve the interaction with the cementic matrix to receive a preliminary initial strength and prevent plastic cracking.

Technical Specifications

Structure	Filamentary
Length.....	12 millimeter
Nominal Diameter.....	12 micron
Density	1.14 grams/cubic cm
Nominal DiTex.....	1.5
Tensile Strength.....	350 MPa
Elastic Modulus	2200 MPa
Liquefaction Temperatures.....	.264°C
Alkali Resistance:.....	.Very High
UV Radiation ResistanceVery High
Color	Transparent

Dosage and Quantity

Fiber Quantity per Cubic Meter

The optimal fiber quantity is one product bag containing 300 to 600 gram fibers per cubic meter concrete.

Cement Quantity per Cubic Meter

The recommended quantity is according to SII 118 or the engineer's specifications.

Service and Support

The Laboratory

The product was developed in our laboratory. The laboratories are state of the art and among the most advanced in the field of fibers and concrete, servicing to adapt the solution to each application

and project for technical consultation purposes during any application for the benefit of meeting the specific needs of each of our customers.

Experts in the Field

The product is adapted to the specifications of each application, at both the fiber and the concrete levels.

The company's experts offer technical support services at the design level to assist and define the solution's scope and character (the quantity and type of fibers required) and during implementation and execution, through accompanying, consulting and providing expert technical support as required.

Actual Application

Blending Fibers into the Aggregate

- ▶ It is possible to add fibers during each of the concrete preparation stages
- ▶ There is no need to modify the composition of the planned concrete aggregate.
- ▶ The product bags decompose in the concrete aggregate and release the fiber content into the mixture with the fibers disperse uniformly across the matrix.
- ▶ Add the amount of fibers suitable to the concrete volume in the drum, according to the required dose and mix at the maximum speed (at least 70 rotations) for at least 4 minutes.

Packaging and Storage

Storage

The shelf-life of the packaged product is approximately one year. The product must be stored in a dry and protected environment.

Delivery

The product is manufactured and packaged in the company's facilities.

The product comes packaged in decomposable paper bags or in bulk.

The quantity of fibers in the packaging can be adapted according to the customers specific needs and requirements.

The shipped product arrives in decomposable bags, packed in carton boxes.

A label containing the product's specifications is attached to each carton.

Packaging

The dimensions of the carton packaging are 46 x 34 x 39 (height, length, width) and each carton contains a quantity of packets that varies according to dosage:

50 packets of 300 grams fiber per bag.

40 packets of 400 grams fiber per bag.

30 packets of 500 grams fiber per bag.

25 packets of 600 grams fiber per bag.

The product comes with the following documentation:

Bill of Lading

Invoice

Instructions for Use

MSDS Safety Instructions

Product Quality Compatibility Approval



Our Development, Your Success

www.fiberfor.com

For further information and details please write to info@fiberfor.com

Fiberfor Co. Ltd, 5 Hamada St. Hi Tech Park (South) Yochneam

Telephone +972- (0)4 - 9593990 | Fax +972- (0)4- 9593991

