

KraTos Micro 12 mm

Technical Data Sheet



DESCRIPTION

KraTos Micro 12 mm is a high-performance polymer-based monofilament micro synthetic fiber reinforcement that provides effective crack control against short-term plastic shrinkage and long-term drying shrinkage with its 3-dimensional homogeneous distribution property in concrete.

KraTos Micro 12 mm is locally manufactured according to EN 14889-2 Class 1 standard with Kordsa engineering from 100% virgin Polyamide 6.6.

APPLICATION AREAS

KraTos Micro 12 mm is used in all ready-mixed concrete, screed and precast concrete elements applications.

PHYSICAL PROPERTIES

Property	Unit	Value	Technical Specification
Specific Gravity / Density	gr/cm ³	1.14	EN 14889-2
Length	mm	12	
Filament Diameter	micron	27	
Tensile Strength	MPa	900	
Elongation at Break	%	17.55	
Melting Point	°C	260	
Alkaline Resistance	Very Good		
Corrosion Resistance	Very Good		
Num. of Fibers	~#/kg	111 Million	
Fiber Type	Monofilament		
Type of Raw Material	100% Polyamide 6.6		

PACKAGING

KraTos Micro 12 mm is produced in special water-soluble packages. The standard package amount is 600 gr (±1.5%). 300 kg of product is shipped in one palette.

SHELF LIFE AND STORAGE

The suitable shelf life for unopened packages is 2 years. It is recommended to store the product in its original packaging in a closed environment, protected from moisture, water and direct sunlight.

DOSAGE

KraTos Micro 12 mm is used in all ready mixed concrete, screed and precast concrete elements applications at a dosage of 600 gr/m³. In precast concrete elements, plaster, mortar and construction chemicals applications, the dosage is determined specifically according to the project or application area.

DIRECTIONS FOR USE / MIXING

KraTos Micro 12 mm is produced in special water-soluble packages. It provides speed and convenience by mixing with concrete together with its pack during plant and on-site mixing. KraTos Microfibers are compatible with all types of concrete additives and classes.

FEATURES & BENEFITS

- Prevents shrinkage cracks in concrete up to 98.3% and limits the crack width by 95% at 600 gr/m³ use
- Provides long-term and effective protection against crack formation with its 900 MPa tensile strength
- Easy mixing and fast application
- Creates less labor and equipment cost advantage
- High durability against corrosive, alkaline and acidic environments
- Easy to store. Provides advantageous logistics costs
- Does not affect magnetic fields with its polymer structure
- Increases concrete resistance against freeze-thaw effects
- Prevents bleed in concrete by increasing the surface properties of concrete
- Reduces spalling of concrete by reducing the internal pressure stress during a fire

CONFORMITY / COMPLIANCE

For the performance to prevent shrinkage cracks; tests have been carried out and reported in accordance with DIN09A-B-C-D and DIN11 Aachen University Building Materials Research Institute in Germany and ASTM C157/M-08 at Boğaziçi University.

In line with the project needs, ASTM C1579-13 test can be done and reported in Kordsa Technology Center with samples taken from the project jobsites.

For performance during fire; tests have been carried out and reported in the V-S-H-Hagerbach laboratory in accordance with ISO 834-2: 2019 standard.

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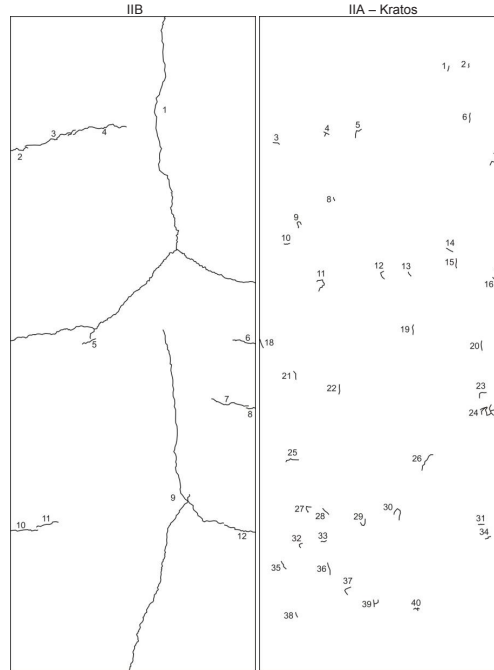
GRAPHS AND TABLES

As a result of the shrinkage tests carried out in accordance with DIN09A-B-C-D and DIN11 standards at Aachen University Building Materials Research Institute in Germany, KraTos Micro 12 mm prevents shrinkage cracks in concrete by 98.3% and limits the crack width by 95%.

Table 1: Results of the Tests on the Reduction of Plastic Shrinkage

Parameter	Unit	Concrete Mixture	
		Plain Concrete	600 gr/m ³ KraTos 12 mm Reinforced Concrete
1	2	3	4
Number of cracks	-	12	40
Total crack length	mm	3,132	869
Maximum crack width	mm	2	0.1
Medium crack width	mm	0.83	0.05
Total crack area	mm ²	2596.6	43.9
Water Evaporation	% by mass	1.22	1.61

Figure 1: Crack Shapes in Concrete



*IIB: Plain Concrete

*IIA - Kratos: 600 gr/m³ KraTos 12 mm Reinforced Concrete

LEGAL DISCLAIMER

The recommendations regarding the use of KraTos Micro 12 mm product presented by Kordsa Teknik Tekstil A.Ş. under the document are only recommendations and may vary according to the customer's purpose of using the product and technical data. Since the customer has the expertise and knowledge regarding the intended use of the product and the products made from the product in question, regardless of whether the product is used alone or with other materials, the customer undertakes all the risks and responsibilities arising from the use of the product. Kordsa Teknik Tekstil A.Ş. expressly declares that it is not liable for any loss and/or expense that may arise in the eye of the customer, regardless of whether it is used in accordance with the usage recommendation offered to the customer.