

Wiking® 18 Micron

Wiking® 18 micron is a monofilament fibre which is extruded into very fine fibres and is especially effective in preventing possible cracking of the concrete during its drying phase.

The fibre is being used in every form of concrete in which one would want to prevent cracking caused by plastic shrinkage and is especially well suited for tunnel construction as a flame retardant, examined by the RWS- curve 1,300°.

Benefits and characteristics

- Fire prevention fibre
- Improves shock resistance
- Improves resistance to bending
- Increases time to escape safely, tunnels, underpasses, parking decks etc.
- Our fibres are not magnetic
- Reduced risk of explosive fragmentation

Specifications - Wiking® 18 Micron	
Material:	polypropylene C 3 H 6
Fibre length:	6, 12 and 18 mm
Fibre cross section:	18 µm
Density:	0.91g/cm ³
Design:	monofilament
Diameter:	18 µm
Tensile strength:	223 MPa
E-module:	3710 MPa
Resistance against alkalis:	good
Water absorption:	zero
Softening temperature:	approx. 160°C
Dosage:	0.6 - 2.0 kg/m ³

BBG / RWS 1,300° examined, IBS Linz test report No 09070605 - E requirements of the EN 14889-2, fiber class 1a
 DIBT, AbZ- approval No Z-3.73-2066, DIN EN 206-1
 CE- declaration of conformity No 1077- CPR - 44302101 - E
 declaration of performance appendix III of the EU, No B 3303 BVFS
 Requirements of EN 14.889-2, Fiber class 1a, System 1 Determination of design values,
 Austria Association for Concrete and Structural Engineering (ÖVBB) Guideline (RILI) Fiber concrete 2008 a. EN 1990
 Crack opening area (-82%), average crack width (0.29 mm), shrinkage reduction (-68%) according to DIN EN 206 -1 and DIN 1045-2: 2013, with proven effectiveness
 Approved for applications in contact with food in the EU, February 2016 / German Federal Law Gazette (BGBl.) I p.198

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General fields of application fire prevention

- Tunnel segments
- Interior shells
- Prefabricated concrete parts
- Underpasses
- Basement walls
- Parking garages

Mixing instructions

When preparing wet cement mixtures, the fibre should be added to the concrete mixer together with all the other ingredients. The fibres spread very well within the mixed batch and increase its rigidity. Balance out the consistency by using super plasticizer.

The fibre guarantees a quick and even spread into the concrete matrix.

The mixing time per mixing volume is 50-70 seconds; however, preliminary tests are always advised, due to slight variance between the different formulations.

The mixing time per mixing volume (at 2.5 m³) approx. 50-80 seconds, execute preliminary tests in the truck trailer, at highest rotation for approx. 8-10 min.

A manual installation, using an extractor and a plastering trowel, as well as the installation by a laser controlled screeding machine are possible.

Delivery program

Wiking® 2.3dtex 18 µm is available in 600 kg pallets, 24 x 25 kg carton, carton 25 x 1 kg packages. Minimum quantity is to be determined in a common agreement.

Specifications application

Wiking® 18 µm is physically resistant against all the chemicals in concrete, and the appearance and durability of the concrete are not impaired.

Flame retardant

Due to its high fibre density, Wiking® 18 µm is especially well suited for tunnel construction as a flame retardant. The fibre melts at high temperatures, and small capillary cavities form which retards the explosive peeling of the concrete. Thus, more time is left for people who are possibly trapped in a tunnel, to be rescued. By now, the addition of fibres in tunnel construction is legally required! e.g.: ÖVBB Guideline, edition April 2015: Increased fire prevention in concrete for underground traffic constructions

Extent of Guarantee

Wiking® 2.3dtex 18 µm complies with EN-14.889-2, fibre class 1b, system 1 production control and is produced in a facility that is certified with ISO 9001-2004.

Danish Fibres strives for high quality but does not have control over all stages of the value chain. We therefore accept no responsibility for third-party production, customer processing, application, or the final result where our materials are used. All data is for guidance only, and the customer is responsible for assessing suitability for the intended purpose.

Health and safety

Please read the specific safety data sheets or contact the technicians at Danish Fibres.

Technical consultation

The technical department at Danish Fibres is available to you and can give you advice about the correct use of our products.

It is always the user's responsibility to ensure the correct selection and application of Danish Fibres' products. This includes, but is not limited to, product selection, mixing, placement, design, manufacturing, and testing of materials in which the products are incorporated.

Danish Fibres provides general, non-binding information only, and has no control over third-party production, customer processing, application, or the final outcome where our materials are used. We therefore accept no responsibility for end products or for how our materials are used in practice.

Any losses or damages - direct or indirect - arising from incorrect use of information or products are the sole responsibility of the user. For further details, please refer to Danish Fibres' general terms and conditions of sale and delivery.