

Wiking® 50 Micron

Wiking® 50 Micron is a monofilament fibre that has been extruded into very fine fibres. It has been developed especially for dry mortar and is very efficient in the prevention of crack formation in the actual drying/hardening phase of concrete/mortar.

The fibre is applicable in all forms of concrete where an attempt is made to prevent crack formation caused by plastic shrinkage.

Advantages and properties

- Alternative to crack controlling mesh reinforcement
- Increases impact resistance
- Increases inflexional strength
- Increases ductility
- Fire-retardant ability in tunnel construction

General fields of application

- Indoor floor units
- Ground decks

- Concrete products
- Elements
- Shotcrete

Specifications

Wiking® 50 Micron is physically resistant to all chemicals in the concrete and the look and durability of the concrete do not deteriorate.

Concrete is liable to develop cracks in the early drying phases, as the shrinking tension is then at its highest. In this phase Wiking® 50 Micron prevents the formation of cracks extremely effectively as the fibre has a high dispersing ability in matrix, and the unique fineness of the fibre causes such a high fibre frequency that these catch and counteract the formation of cracks as soon as it is occurring.

The very large specific fibre surface ensures that maximum tensile strength is effectively transferred to the concrete. This makes the early shrinkage tension distribute evenly in the concrete, and thus the formation of cracks and long-term weaknesses in the concrete will be avoided. The Wiking® fibre ensures that the matrix will mature to developing full strength potential.

Resistance to explosive fragmentation

On the background of the high fibre frequency, Wiking® 50 Micron is particularly well-suited as a fire-retardant material in tunnel construction projects. The explanation for this is that with the development of high degrees of heat (in connection with accidents) the fibres will melt and create small capillary cavities in the concrete, which will delay explosive fragmentation of the concrete. This

will increase the time to rescue people who might be trapped in a tunnel. The addition of fibres in tunnel construction projects is today a requirement in many countries.

Surface treatment

The surface of the fibres has been specially treated with a view of high dispersing and adhesive abilities in the concrete. At the same time this treatment reduces the air-intake in the concrete to about 1% and thus creates low porosity in the concrete, which increases its strength.

Application

Wiking® 50 Micron is used for wet and dry shot creating and for manual use.

Delivery programme

Wiking® 50 Micron is available in lengths of 3, 4, 6, 8, 9, 12, 18 and up to 150 mm – cutting up and packing as requested.

Besides, the fibres are available in rope form, so that it is possible to cut the fibre in the requested length for the production of concrete. We can arrange a contact for the purchase of such cutting equipment.

Extent of Guarantee

Wiking® 50 Micron complies with EN-14.889-2, fibre class 1b, system 1 and is produced in an installation that is certified with ISO 9001-2004. Danish Fibres does not have control over the installation of their products and their processing, and therefore cannot take responsibility for the final products.

Health and safety

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

Technical consultancy

The Danish Fibres technical department is at your disposal and can advise you on the correct use of our products.

Specifications - Wiking® 50 Micron

Raw material:	Polypropylene C ₃ H ₆
Conductivity:	Minimal
Chemical resistance:	Satisfactory
Fibre length:	3, 6, 12 and 18 mm
Fibre diameter:	50 µm
Form:	Round, smooth
Surface:	Treated for dispersing and adherence
Specific gravity:	0.91g/cu cm
Colour:	Natural
Absorption:	Zero
Tensile strength:	152 MPa
E-module:	1135 MPa
Fibre frequency	100 million/kg
Specific surface:	90 sq m/kg
Softening temperature:	Approx. 160°C
Dosing:	0.9 – 2.0 kg/cu m

Wiking® 17 dtex 50 micron fulfils the EN-14.889-2, Fiberclass 1b, System 1 and is manufactured in an ISO 9001-2004 certified facility. However, Danish Fibres is not in control of how the products are used and processed and can consequently not be made liable for the end product.

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