

LYKSOR® Macro 540 T

Macro Synthetic Polypropylene Fiber

LYKSOR® Macro 540 T is composed of twisted polypropylene fibers. Its twisted shape enhances the fiber's adhesion to concrete. It is a twisted polypropylene fiber added to fresh concrete to prevent plastic shrinkage and settlement cracks, and to reduce crack density and width.



Uses

- ◆ Large-area slab and coating concrete
- ◆ Industrial slabs
- ◆ Parking lots and loading areas
- ◆ Precast panel, facade and wall element production
- ◆ Concrete canal, precast concrete saddle and water structures
- ◆ Agricultural structure slab and ground concretes

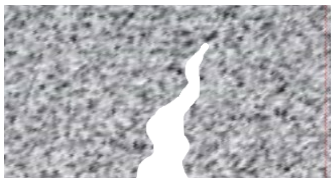
Advantages

- ◆ Do not migrate to the surface in large-surface concrete elements.
- ◆ Reduces plastic shrinkage and settlement crack risk
- ◆ Increases the energy absorbing capacity of concrete
- ◆ Enhances flexural performance of hardened concrete
- ◆ Improves durability of concrete by reducing and limiting cracks
- ◆ Improves fire resistance of concrete
- ◆ Increases impact resistance of concrete
- ◆ Improves the cohesiveness of fresh concrete, reduces bleeding.
- ◆ Reduces the amount of steel mesh reinforcement



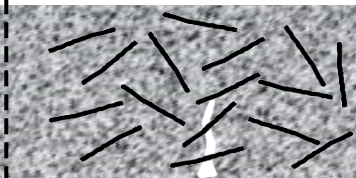
LYKSOR® Macro 540 T PROVIDES AN EFFECTIVE CRACK CONTROL

Plain concrete



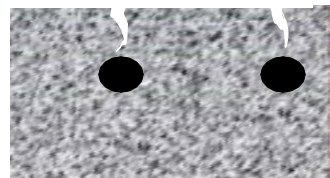
In plain concrete, the crack-tip concentration is very high and leads to a very rapid crack propagation.

LYKSOR® Macro 540 T added concrete



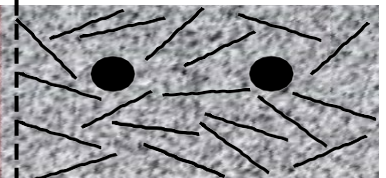
The crack-tip concentration of the cracks encountering the LYKSOR® Macro 540 T fibers reduces and hence their widths lessen and propagation is limited.

Plain concrete



In plain concrete, the settlement of fresh concrete is restrained by the reinforcement and the cracks form at the surface.

LYKSOR® Macro 540 T added concrete



LYKSOR® Macro 540 T prevents plastic settlement cracks and provides crack free surface.

	Welded steel mesh	Hooked-end steel fibre	Micro-synthetic fibre	LYKSOR® Macro 540 T
Ease of handling & lightness	☹	☹	☺	☺
Corrosion resistance	☹	☹	☺	☺
Preventing plastic settlement cracks	☹	☹	☺	☺
Preventing plastic shrinkage cracks	☹	☹	☺	☺
Performance as a secondary reinforcement	-	☺	☹	☺
Load carrying capacity after peak load	☺	☺	☹	☺

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Technical Properties

Color	Gray
Chemical structure	100% Polypropylene
Nominal density (g/cm ³)	0,91 (EN 13392)
Water absorption	None
Length (mm)	54.0 ± 4.0
Tensile strength, R _m (MPa)	> 500
Melting temperature (°C)	160
Ignition point (°C)	200
Heat & electrical conductivity	Low
Acid resistance	High
Alkali & salt resistance	High
Corrosion resistance	Does not corrode

Property	Average Results (MPa)
Compressive Strength	46.57
Flexural Strength	4.8
CMOD* 0.5mm	1.8
CMOD 1.5mm	1.8
CMOD 2.5mm	2.0
CMOD 3.5mm	2.1
*Crack Mouth Opening Displacement 3 kg/m ³ LYKSOR® Macro 540 T	



Package, storage & shelf life

- LYKSOR® Macro 540 T is available in 5 kg nylon bags.
- Depending on the target performance, the recommended dosage ranges 1 kg—5 kg /m³ concrete.
- The shelf life is 36 months. Protect from high temperature and direct sunlight.

Usage

LYKSOR® Macro 540 T should be added to fresh concrete at the concrete plant. In case of adding at the concrete plant, LYKSOR® Macro 540 T should be added to the aggregate belt homogeneously. If it is possible, LYKSOR® Macro 540 T is advised to be added to the half of the mixing water and mixed in a high speed together with the other concrete ingredients for obtaining more homogeneous fiber dispersion. LYKSOR® Macro 540 T can directly be added to the fresh concrete inside a mobile mixer at the construction site. In case of adding to fresh concrete inside the mobile mixer, LYKSOR® Macro 540 T should be added step by step by avoiding fiber clustering and coagulation. To obtain more homogeneous fiber dispersion, an additional mixing time (3 – 5 minutes at normal speed) should be applied and must be ensured that the homogeneous fiber dispersion is obtained.

Legal liability

The technical recommendations in this product data sheet are based on the experimental studies performed on reference concrete mixtures designed in the R&D laboratories of Kalekim LYKSOR. The results may not be applicable to different concrete mixtures produced with different materials than the ones used in the experiments in Lyksor. All customers and users are required to determine the appropriate Kalekim LYKSOR products for their intended use and to test the suitability of Kalekim LYKSOR product for their application. Please contact Kalekim LYKSOR for the appropriate product selection and usage details. Kalekim LYKSOR is not responsible for the improper usage of the products.