New generation of polypropylene fibre for concrete reinforcement

K A L C I F I L M I K R O / N A N O

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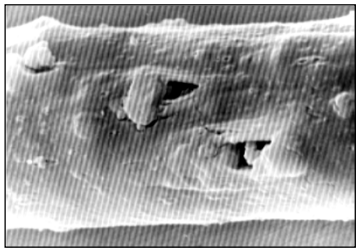
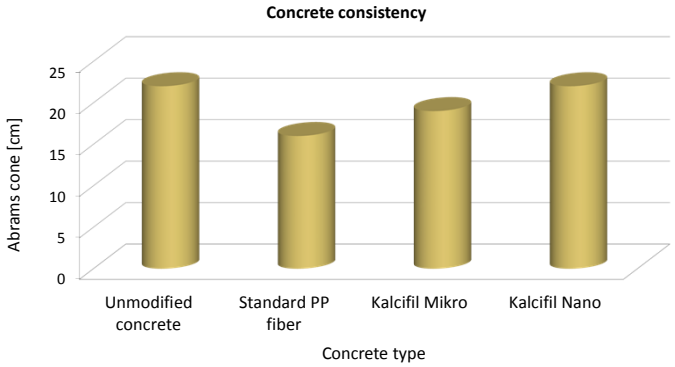
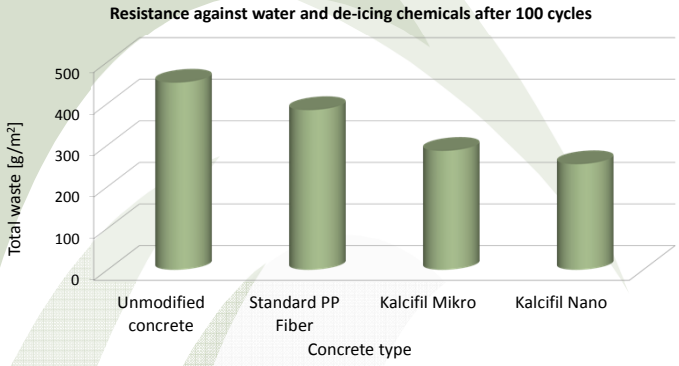
Kalcifil Mikro/Nano is an advanced type of modified polypropylene staple fibre characterized with an improved adhesion to the concrete matrix. Anchoring improvement of PP fibres develops a significant increase in the mechanical properties of concrete or mortars, freeze/thaw resistance and resistance against de-icing chemicals.
Compared to the standard PP fibres, inorganic micro or nano particles on the fibres' surface positively influence processing properties of the fresh concrete mixture. Their application limits a loss of the concrete consistency and improves rheological parameters of its properties compared to the standard PP staple fibres.

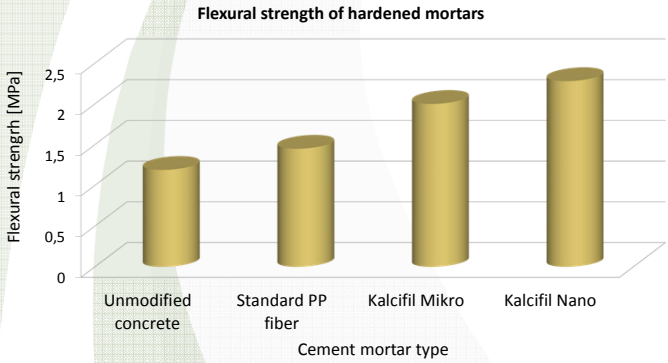
Modification and additivation of **Kalcifil Mikro/Nano** fibre helps to significantly improve utility properties and durability of hardened concrete compared to the types containing standard PP fibre.

Modified fibre **Kalcifil Mikro/Nano** develops an improvement in the resistance against de-icing chemicals by at least 25 – 30%, substantially increases freeze/thaw resistance and increases flexural strength of hardened mortar by at least 35 – 50% compared to types containing standard PP fibre.









Improved properties of concrete and mortars incorporating new PP fibres.

- reduction of shrinkage crack formation during the concrete and mortar hardening process
- advanced freeze/thaw and de-icing chemicals resistance
- increased flexural strength by up to 0.5 – 1.0 MPa (important for masonry mortar)
- advanced overall strength and resistance against mechanical stress
- positive impact on processing properties of concrete and mortars
- improved explosive spalling reduction in concrete

Applications of advanced concrete and mortars

- increase of durability and lifetime of all concrete and mortar types
- increase of fire safety of concrete constructions
- industrial cast flooring
- prefabricated concrete products
- production of light concrete elements
- parking areas, road infrastructure
- rendering mortars
- admixture for dry cement mixes
- recommended fibre dosage is 0,6 - 2 kg per m3 of concrete mixture

APVV

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