

POLYPROPYLENE®

Monofilament Polypropylene Fiber



RAMKA
CONSTRUCTION
CHEMICALS

POLYPROPYLENE® fibres reinforce concrete and cement- or gypsum-based mixes. Their low density, small cross-section and high tensile strength allow them to disperse in concrete without absorbing mixing water or changing cement water demand. They mix without settling and do not disrupt the alkaline concrete environment. Lengths of 12 and 18 mm are supplied for concrete; 6 mm fibres are produced for gypsum and thin mortars.

Applications

- Ductile, flexible concrete
- Replacement of all or part of reinforcing bars and mesh in concrete
- Fire-resistant concrete
- Ready-mixed concrete and precast elements
- Gypsum and precast gypsum panels
- Cement sheets
- Polymer mosaic, cement plaster and artificial stone
- Shotcrete
- Concrete repair, particularly vertical and thin sections
- Lightweight concrete blocks including CLC and AAC
- High-quality foam concrete
- Thin cementitious mortars including microcement
- Hydraulic structures and water-storage tanks
- Roller-compacted concrete (RCC)

Approvals / Standards

- ASTM C1116/C1116M
- EN 14889-2

Guideline for Use

The fibres can be added during concrete production at the batching plant or to the truck mixer at the project site. Batching-plant addition is preferred.

For job-site addition, preferably add the fibres with a concrete powerplasticizer to improve dispersion. If this is not considered before placement, excessive vibration in the formwork can cause bleeding.

Dosage

0.5 to 2 kg per cubic metre of concrete.

Determine the exact dosage according to the application and cementitious mix.

Compatibility

POLYPROPYLENE may be combined with all types of Portland cement, concretes containing pozzolanic materials such as; GGBS, PFA, micro-silica.

Product Information

Raw Material	100% Virgin Polypropylene
Melting Point	160°C-170°C
Density	0.91 ± 0.05 g/cm ³ at 20°C
Fiber Length	6, 12 and 18 mm
Thickness	3 Denier
Shape	Monofilament Fiber
Surface	Coated for Dispersion
Tensile Strength	≥400 MPa
Water Absorption	No
Acid Resistance	High
Alkali Resistance	100%
Thermal Conductivity	Low
Electrical Conductivity	Low
Modulus of Elasticity	≥3500 MPa
Packaging	25KG Bags
Form / Color	White Monofilament fibers
Shelf Life	2 years from date of production if stored properly
Storage Condition	Store in undamaged, unopened, original sealed packaging in dry conditions at temperatures between +5°C and +40°C. Protect from direct sunlight and frost.
Recommended Dosage	0.5-2 kg per cubic metre of concrete
State	Solid
Elongation	80%

Advantages / Benefits

- Increased impact resistance
- Increased abrasion resistance
- Made from 100% polypropylene
- Increased concrete tensile strength
- Increased concrete flexural strength
- Reduced cracking and hairline cracks
- Increased durability and lower permeability
- Reduced plastic settlement
- Reduced shrinkage
- Reduced bleeding and improved consistency

Effects

POLYPROPYLENE increases the tensile strength of concrete up to 28 days of age.

Storage

This product must be stored in original sealed packaging at above +5°C under cover, out of direct sunlight and protected from extremes of temperature. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage condition contact RAMKA Technical Services Department.

Basis of Data

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

Health and Safety

It should not be swallowed or allowed to come into contact with skin and eyes.

Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. If swallowed seek medical attention immediately - do not induce vomiting.

Additional Information

For additional information on POLYPROPYLENE fibers, consult our Technical Services Department.



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Important Notes: The information, and, in particular, the recommendations relating to the application and end-use of RAMKA products, are given in good faith based on RAMKA's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with RAMKA's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. RAMKA reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.