

POLYPROPYLENE FIBERS®

Synthetic Fibers for Concrete and Mortar



POLYPROPYLENE FIBERS® are synthetic fibers intended for concrete, cementitious mortars and selected gypsum-based mixtures. Uniformly dispersed fibers are used primarily for crack control and to support toughness, impact resistance and durability.

Applications

- Water-retaining and hydraulic concrete structures
- Ready-mixed and precast concrete
- Concrete requiring crack control, toughness or impact resistance
- Concrete systems designed to reduce explosive spalling, subject to validated design
- Polymer tiles, artificial stone and compatible mortar systems

Reference Standard

ASTM C1116/C1116M covers fiber-reinforced concrete and classifies concrete containing synthetic fibers as Type III. Project conformity must be verified by test documentation.

Advantages / Benefits

- Helps reduce the width of shrinkage cracks
- Supports energy absorption and resistance to impact and dynamic loading
- Supports tensile and flexural performance
- Low water absorption and electrically non-conductive
- Can support improved durability and reduced moisture penetration
- Odourless according to current ALPAKA information

Guideline for Use

Add during concrete or mortar production and mix until uniformly distributed. Site addition to a high-speed mixer may be used only with a validated procedure. Do not spread fibers onto concrete after placement.

Dosage

Recommended range: 0.5-3.0 kg/m³. Where no special project requirement governs, ALPAKA identifies 1.0 kg/m³ as a typical rate. Confirm by trials.

Mixing

- Add gradually to prevent fiber balls
- Maintain sufficient mixing energy and time for uniform dispersion
- Verify workability, pumpability, finishing and air content
- Do not use post-placement surface broadcasting as reinforcement

Compatibility

Evaluate the selected fiber geometry with the actual cementitious system, admixtures, production equipment and placement method. Adjust workability without adding uncontrolled water.

Trial Requirements

- Fiber dispersion throughout the load
- Fresh-concrete workability and finishing
- Required crack-control, impact or toughness performance
- Pumping and production-scale repeatability

Limitations

Fiber length, diameter and mechanical properties depend on the ordered grade. Polypropylene fibers do not replace structural reinforcement unless a qualified design specifically allows it.

Product Information

Material	Polypropylene
Physical Form	Synthetic fibers
Odour	Odourless
Water Absorption	Low
Primary Function	Crack control and toughness support in cementitious mixtures
Storage Condition	Dry, covered and protected from sunlight and contamination
Recommended Dosage	0.5-3.0 kg/m ³ ; typical 1.0 kg/m ³ where appropriate
Fiber Geometry / Packaging	Refer to the ordered grade specification
Reference Classification	ASTM C1116/C1116M Type III concrete; verify project compliance

Storage

Store dry, under cover and away from direct sunlight. Keep packaging closed and protect the fibers from contamination, moisture and physical damage. Retain grade and batch identification for quality control.

Basis of Data

Technical information in this sheet is based on ALPAKA product information and general industry references. Values described as approximate are not release specifications. Actual performance may vary with raw materials, formulation, temperature, process and site conditions. Verify critical properties on the current batch documentation.

Precautions

Avoid ingestion and eye contact and prevent unnecessary airborne fiber or dust. Wear eye protection and gloves; use respiratory protection where the risk assessment requires it. Follow the current product-specific SDS and good industrial hygiene practice.

Fire / Cleaning and Disposal

Polypropylene is combustible. Keep away from ignition and high heat and follow the current SDS. Use an extinguishing medium suitable for the surrounding fire. Collect spilled fibers to prevent dispersal, and recycle or dispose of product and packaging under local requirements.

Additional Information

For current specifications, application support and trial guidance, contact ALPAKA Chemical Group:
info@alpakagroup.com | +98 933 202 3003 |
www.alpakagroup.com.

Important Notes

The information and recommendations in this Product Data Sheet are given in good faith and reflect ALPAKA's current knowledge of the product when correctly stored, handled and used under normal conditions. Materials, formulations, substrates, production methods and site conditions vary; therefore no warranty of merchantability or fitness for a particular purpose can be inferred from this document. The user is responsible for confirming suitability through representative trials and for complying with applicable laws, standards, approvals and third-party rights. The current commercial specification, batch Certificate of Analysis and product-specific Safety Data Sheet take precedence over this document. Refer to the most recent issue for the product concerned.