Technical Data Sheet

PP Twisted Bundle Fiber

Product Description

POLYVIA™ Polypropylene Twisted Bundle Fiber is a high-performance synthetic reinforcement fiber designed for concrete and cement-based applications.

Manufactured from polypropylene resin through a specialized extrusion, drawing and surface treatment process, the fiber features a twisted bundle structure designed to facilitate dispersion and reinforcement within the concrete matrix.

With high tensile strength, good alkali resistance, low density and non-absorbent characteristics, this fiber helps improve crack control, impact resistance, abrasion resistance and the overall toughness of concrete.

Its distributed reinforcement mechanism helps control the development of cracks and improve the integrity of concrete under various service conditions.

Unlike conventional steel reinforcement fibers, polypropylene fibers do not corrode in the alkaline environment of concrete and can be incorporated into concrete using conventional mixing equipment.

POLYVIA™ Polypropylene Twisted Bundle Fiber is suitable for mass concrete, industrial flooring, roads, bridges, tunnels, shotcrete, precast concrete products and other construction applications.

Technical Data:

Items	Standard
Color	White or Grey
Type	Twisted-Bundle Macro Synthetic Fiber
Length, mm	40 / 50 / 56
Equivalent Diameter, mm	0.6 ± 0.05
Equivalent Diameter, mm	0.8-1.0
Density, g/cm³	0.91
Tensile Strength, Mpa	≥ 500
Elastic Modulus, MPa	≥ 4,500
Elongation, %	20 ± 5
Melting Point, ºC	160-170
Acid & Alkali Resistance	≥ 95
Water Absorption	Non-absorbent

Application:

Mass Concrete: Dams, transfer beams, columns, large structural slabs and other mass concrete structures.

Industrial Flooring: Concrete hardstands, industrial floors, abrasion-resistant floors and heavy-duty floor slabs.

Building Construction: Roof slabs, basement structures and other reinforced concrete applications.

Roads & Bridges: Concrete pavements, bridge decks, road surfaces and slope protection structures.

Hydraulic Engineering: Reservoirs, water tanks, swimming pools and other hydraulic concrete structures.

Precast Concrete: Concrete pipes, panels, boards and other precast components.

Underground Engineering: Tunnels, mines, culverts and sprayed concrete applications.

Specialty Concrete: Concrete exposed to demanding mechanical, environmental and chemical service conditions.

Package:

1-3kg/bag, 10-20kg/bag, 400kg/pallet

Recommended Dosage & Application Guidelines:

General Crack Control: 1–1.5 kg/m³ of concrete.

Enhanced Crack Control: 3–6 kg/m³ of concrete.

Combined Fiber Application: 1–1.5 kg/m³ of polypropylene twisted bundle fiber combined with 0.4–0.6 kg/m³ of polypropylene mesh fiber.

Recommended Mixing Sequence:

Add aggregates into the concrete mixer.

Gradually introduce polypropylene twisted bundle fiber while the aggregates are mixing.

Continue mixing to promote initial fiber distribution.

Add cementitious materials and mix further.

Introduce the required mixing water and other concrete admixtures.

Continue mixing until the fibers are uniformly dispersed throughout the concrete