

Polytwist® PTB 54

Twisted Macro Synthetic Fiber Reinforcement That Provides Excellent Surface Finishing Together With High Performance And Long Service Life In Concrete, Even Under Heavy And Intense Traffic Loads

Polytwist® PTB is a structural macro synthetic fiber reinforcement composed of twisted monofilament fiber bundles, manufactured from 100% pure copolymer/polypropylene material. Thanks to its specially developed twisted structure for industrial site concrete applications and the fibrillated fibers contained within, Polytwist® PTB provides long-term maximum durability without any risk of corrosion, while also reducing plastic shrinkage and plastic settlement cracks.

Polytwist® PTB eliminates the need for traditional reinforcement methods such as welded wire mesh and steel fibers. In addition, it is corrosion-resistant, non-magnetic, and 100% resistant to alkalis and acids. Due to its soft structure, it embeds better after finishing and does not protrude to the surface, thereby reducing labor requirements and the number of finishing passes. With its fibrillated blended structure, it combines macro fibers that serve as primary reinforcement and micro fibers that prevent surface cracking in a single product.

Usage Instructions and Mixing

Depending on the project requirements, Polytwist® PTB recommended dosages vary between 2 kg/m³ and 5 kg/m³. Homogeneous mixture is obtained by addition of Polytwist® PTB to the aggregate band at the concrete batching plant or by mixing in a high speed concrete mixer (on-site or at the concrete plant) for at least 5 minutes in the field. It is recommended to use plasticizer additives at high fiber dosages.

Packaging Types

- 3 and 5 kg recycled PE pack or 1 kg degradable packaging.
- Custom packaging available if requested.

Dosing

Polytwist® macro synthetic fibers can be used as reinforcement instead of steel mesh and steel fiber within concrete. Our engineering department provides technical assistance on demand for necessary project calculations such as energy (joule) absorption and flexural capacity calculations. We state that it is the customer's responsibility if the dosage deviates from the values specified in the TDS or does not rely on a structure report provided by Polyfibers. In such cases, Polyfibers will not assume any responsibility or warranty for the product's performance.

Applications

Field Applications

- Industrial Floors
- Slabs on grade
- Concrete Pavements
- Logistics Facility Floors
- Slabtrack and Sleepers
- Extruded Curbs and Gutters

Coastal Structures & Ports

- Ports and Piers
- Shipyards
- Marinas

Water Structures

- Hydroelectric Power Plants
- Irrigation Projects
- Channels
- Drinking Water Projects

Residential Applications

- Parking Lot Floors
- Residential Driveways
- Screed Concrete

Precast Elements

- Concrete Pipes and Blocks
- Segments
- Walls

Advantages

Single Product Comprehensive Solution: Twisted macro fibers serve as primary reinforcement, providing load-bearing capacity. Microfibers are no longer necessary in field concretes. Fibrillated fibers minimize shrinkage and potential shrinkage cracks due to temperature changes.

Smooth Surface Finishing: Its soft and twisted structure requires less polishing and labor for a smoother surface appearance

End to Corrosion Risks: Unlike steel reinforcement, its polymer structure eliminates corrosion risks, contributing to more durable and longer-lasting concrete designs.

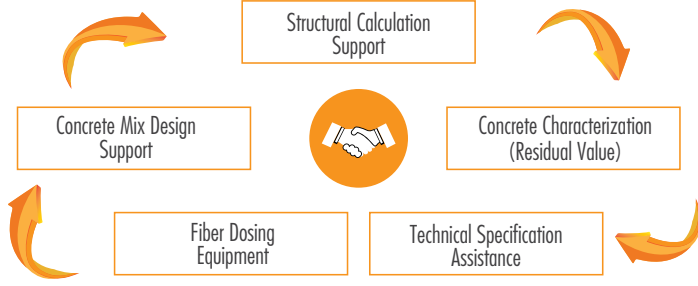
Homogeneous Distribution in 3 Dimensions: With its filament count, it evenly distributes throughout the concrete, ensuring maximum crack bridging performance.

More Environmentally Friendly: Its carbon footprint per cubic meter of concrete is negligible compared to steel mesh and steel fibers.

NOTE: If the slab thickness is below 12 cm, Polytwist® PTB36 should be preferred.

*Please refer to our brochure 'Why Polytwist® PT Macro Synthetic Fiber Reinforcement for Your Industrial Concrete Applications' for a more detailed list of advantages.

Full Solution



Storage & Disposal

- It is recommended to store fibers within original packages, between +5°C and 30°C, protected from moisture and direct sunlight.
- Should not be stored near flammable or oxidizing materials.
- Should not be stacked unless proper precautions are taken.
- It is the responsibility of the end user to dispose the product and the package.

Typical Properties - Polytwist® PTB 54

Composition	100% virgin polypropylene copolymer
Type	Macro synthetic fiber reinforcement for structural use
Geometric Shape	Twisted bundle
Standards & Certifications	EN 14889-2 Type II, ASTM C1116 Type III, ASTM D7508, ICC AC 383, CE 1922-CPR-2164
Available Lengths	Standard Length 54 mm Other lengths 25-30-40-48-50 mm are available upon request
Aspect Ratio Avg.	112
Color	White or Gray
Specific Weight	0.91gr / cm ³
Elastic Modulus	8.5 GPa
Tensile Strength	600-650 MPa
Number of Fibers	100000+/kg
Corrosion	Non-corrosive
Water Absorption	N/A
Chemical Resistance	Excellent alkali resistance
Cement Compatibility	Excellent
Magnetism	Non-magnetic
Melting Point	165°C
Ignition Point	> 360°C



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