MACRO-SYNTHETIC FIBER

pymanFibre Twist 54

It is a macro-synthetic fiber reinforcement based on polypropylene (99%) in a copolymer structure. When added to the concrete mix at the appropriate dosage, it acts as primary fiber reinforcement and can replace welded wire mesh or bar reinforcement.

TECHNICAL INFORMATION

Raw material	Copolymer (99% polypropylene)	**Appearance**	Twisted monofilaments
Tensile strength	600-750 MPa	**Surface**	Embossed
Fiber length	54 mm	**Odor**	None
Number of fibers per kg	> 200,000	**Resistance to acids and salts**	High
Specific gravity	0.91 g/cm³	**Alkali resistance**	High
Melting temperature	160 – 170 °C	**Electrical conductivity**	Very low
Combustion temperature	>350 °C	**Thermal conductivity**	Low
Ignition point	± 400	**Water absorption**	None

ADVANTAGES

- Acts as the main reinforcement in concrete and can replace welded wire mesh or bar reinforcement.
- Eliminates plastic-phase shrinkage cracks by 80-100%.
- Prevents cracking of edges and corners.
- 3D reinforcement of concrete. Provides resistance to tensile stresses and internal stresses per cm².
- Increases the ductility of concrete thanks to its high energy absorption capacity.
- Increases the abrasion resistance of the surface, resulting in a durable floor.
- Increases the impact resistance and fatigue resistance of concrete.
- Eliminates the labor of installing wire mesh and speeds up project execution by up to 50%.
- Works mechanically in the concrete, which means it does not change its chemical structure.
- Minimizes the formation of micro-cracks, including plastic-phase shrinkage and contraction cracks, thanks to its high fiber content.
- Does not corrode.
- Reduces concrete segregation and maintains aggregate-cement integrity.
- Increases cohesion, preserving the integrity of the concrete.
- Compared with steel alternatives, it is lighter, does not corrode and provides a great economic advantage.



54 mm
FIBER LENGTH

>200,000
FIBERS PER KG

600-750 MPa
TENSILE STRENGTH

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TECHNICAL DATA SHEET

pymanFibre Twist 54

MACRO-SYNTHETIC FIBER

DOSAGE

1.8 – 10

kg/m³

Varies according to the performance requirements of each project; it is defined by the Engineering Department of PGA Companies in a calculation report.

APPLICATIONS

- Concrete floors.
- Precast concrete elements.
- Shotcrete.
- Pre-lining in tunnels.
- Exterior pavements.
- Parking areas and airport runways.
- Marine / coastal concrete structures.

USE AND APPLICATION



PYMANFIBRE Twist 54 is used by adding it directly to the concrete mix; this can be done at the concrete plant or in a truck mixer on site.

Depending on the predetermined concrete mix design, the packages with the determined dosage are thrown into the mixer one by one at certain intervals. After the last package is added to the mix, it is prepared for application by mixing for 6-7 minutes at high speed. Store the materials in a cool, dry place. Do not store in direct sunlight.

CERTIFICATES

PYMANFIBRE Twist 54 holds certificates of conformity to the standards ASTM C-1116 “Standard Specification for Fiber-Reinforced Concrete and Shotcrete” and TS EN 14889-2: 2006.

Concrete standards to apply: the concrete onto which PYMANFIBRE 54 will be applied must have a minimum strength of C20/25.

SAFETY

No ecological, toxicological or safety risks. Unlike steel reinforcement, there is no risk of injury from protruding fibers.

Protruding fibers disappear with polishing. In unpolished concrete, they can be removed with a flame torch.

PACKAGING AND TARIFF CODE

CONTAINER	KG	PACKAGING
20’ DC	4,000	10 pallets of 400 kg each, 100 bags of 4 kg per pallet
20’ HC	6,400	16 pallets of 400 kg each, 100 bags of 4 kg per pallet
40’ DC	8,800	22 pallets of 400 kg each, 100 bags of 4 kg per pallet
40’ HC	16,000	40 pallets of 400 kg each, 100 bags of 4 kg per pallet

Tariff code: 5503400000

As part of our integrated offering, we provide engineering and design of fiber-reinforced concrete, as well as recommendations for dosing and finishing of floors and pavements.

Engineering, Products and Expertise in Industrial Concrete Floors

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