

# Polymacro<sup>®</sup> PM54

## High Performance Structural Macro Synthetic Fiber Combination of Technical Expertise & Innovative Solutions

Polymacro<sup>®</sup> PM54, designed in a special form to enhance the strength and flexural resistance of shotcrete, tunnel linings, and field concretes, is made from pure polypropylene. Fiber distribution through out the concrete matrix creates a three dimensional reinforcement network that allows high level energy absorption and toughness. These features increase crack control under high stress, minimize shrinkage and provide resilience and extended service life of concrete elements. Polymacro<sup>®</sup> fibers also prevent the risk of corrosion compared to steel fiber and wire mesh reinforcement, hence the crack-width limitation becomes obsolete for durability.

### Applications

#### Tunnels

- Linings & Segments
- Slope Stabilization
- Shotcrete

#### Mining

- Shotcrete
- Gallery
- Passages

#### Coastal Structures & Ports

- Ports and Quays
- Shipyard
- Marinas

#### Water Structures

- Hydroelectric Power Plant
- Irrigation Projects
- Channels
- Drinking Water Projects
- Shotcrete

#### Precast Applications

- Concrete Pipes & Blocks
- Segments
- Walls

#### Field Applications

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

#### Residential Applications

- Parking Lot Floors
- Residential Driveways

### Usage Instructions and Mixing

Depending on the project requirements, Polymacro<sup>®</sup> recommended dosages vary between 2 kg/m<sup>3</sup> and 6 kg/m<sup>3</sup>. Homogeneous mixture is obtained by addition of Polymacro<sup>®</sup> to the aggregate band at the concrete batching plant or by mixing in a high speed concrete mixer for at least 5 minutes in the field. It is recommended to use plasticizer additives at high fiber dosages.

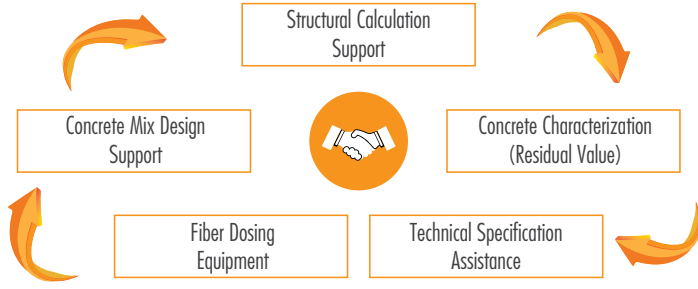
### Packaging Types

- Water soluble puck bundles in 4-5 kg recycled PE pack or 1- 2-3 kg degradable packaging.
- Custom packaging alternatives by project requirements.

### Dosing

Polymacro<sup>®</sup> 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.

## 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 - Polymacro® PM54

Composition	100% Virgin Polypropylene Copolymer
Type	Macro synthetic fiber reinforcement for structural use
Geometric Shape	Embossed pattern
Standards & Certifications	EN 14889-2 Tip II, ASTM C1116 Tip III, ASTM D7508, ICC AC 383, CE 1922-CPR-2165
Available Lengths	Standard Length 54 mm Other lengths 40-48-50-58 mm are available upon request
Aspect Ratio Avg.	90
Color	White or Gray
Specific Weight	0.91gr / cm <sup>3</sup>
Elastic Modulus (After Embos)	9 GPa
Elastic Modulus (Before Embos)	12.5 GPa
Tensile Strength	500 -550 MPa
Number of Fibers	50000+/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



## LEGAL DISCLAMIER

The information in this technical document is based on our scientific and practical knowledge. **Polipropilen Elyaf San. ve Dış Tic. A.Ş.** is responsible solely for the quality of the product. **Polipropilen Elyaf San. ve Dış Tic. A.Ş.** cannot be held liable for any consequences resulting from the use of the product beyond the written recommendations for its application or from any misuse. This technical document is valid until a new edition is issued, at which point previous versions become invalid.



Polipropilen Elyaf San. ve Dış Tic. A.Ş.

Corporate Office: Cumhuriyet Mah. Yüzyıl Cad. No: 64 Kartal - İstanbul

Factory: Bilecik Kayı Osb Mahallesi 18. Cadde İdari Bina No: 7 İç Kapı No :1 Merkez / Bilecik

Tel: +90 216 452 90 16 - info@polyfibers.com

[www.polyfibers.com](http://www.polyfibers.com)