ALL ABOUT FIBERS

polyfibers®

Building a Sustainable Future

By 2050, nine billion people will live on this planet in which three-quarters will be living in cities. The increasing urbanization of the population will require new concepts for housing and construction. For over 15 years, we have worked closely with industry stakeholders to enable sustainable construction projects - so that structures can be more durable and require few resources for maintenance.

We offer innovative solutions that add value to our customers and help them grow their business. That is what makes us better together.

We believe that long term business relationships can only be sustained by a commitment to provide the highest quality products and services and by adding long term value to our customers' business. The achievement of these objectives is directly linked to our ability to deliver creative and cost-effective solutions to our customers, designed to assist them in meeting their business goals safely.

Polyfibers® has transformed and revolutionalized its products by combining space-age synthetic materials with unique designs and shapes. We now supply the international construction market with reinforcement fiber products that minimize cracking, improve material performance and add long-term durability in a wide variety of concrete and other applications.

Since 2001, products, services and people of Polyfibers® have played an important role in the design, construction and preservation of enduring roads, bridges and buildings around the globe.

Through an ongoing commitment to research and development, Polyfibers® will continue to envision and construct the future of fibers.

As being the first 'Micro and Macro Fiber Reinforcement Systems' producer in Turkey, in our CE, ISO 9001: 2001 and ISO 14001 certified manufacturing facilities we serve the world market. With a constant commitment to R&D, we as Polyfibers® team, will continue to imagine and build on the future of fiber.

Fiber Reinforced Concrete Flooring for Industrial Heavy-Duty Floors

Industrial concrete floors are expected to meet extreme requirements - to have the strength and endurance to resist tensile, compressive and flexural stresses, including impact and abrasion.

Safety At Work

Flooring costs reach around 20% of single-story buildings and consumes 40-50% of total concrete and its quality is directly associated to the quality of production, labor comfort and human health. Thus, should be able to resist very harsh mechanical impacts.

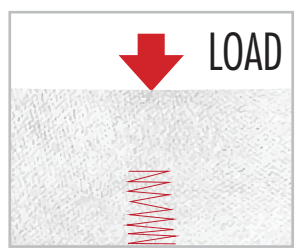
Consistent Reinforcement

Polyfibers® offers a complete range of polypropylene micro and macro fibers, specifically engineered to provide right solution for concrete reinforcement of all kinds of industrial floor applications - from standard to heavy duty pavements.

The role of randomly distributed fibers is to bridge across the cracks and provide post-cracking ductility.

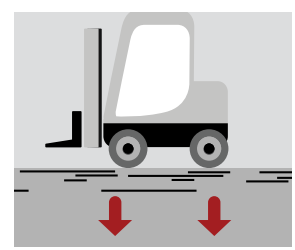
Advantages

- Optimal load bearing
- High fatique resistance
- Superior crack control
- Excellent impact resistance



Every floor has its needs

From liquid-tight surfaces to the foundations for high-tech clad racks, modern floors play a crucial role in ensuring safe and efficient operation.



Cost Effective Solutions

The use of fiber greatly enhances resistance to shocks, dynamic loading, impact and fatique and extends useful working life. Reinforced concrete reduces the thickness of the slab and it increases the resistance to tensile loads - saves concrete by reducing the thickness. Better resistance also reduces maintenance costs by 10-30%.

Polymono 12

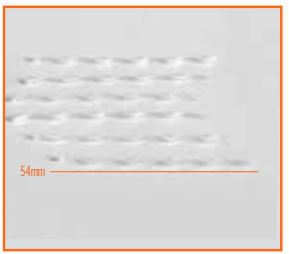
Heavily used in screed concrete and shotcrete applications due to high binding ability. Reduces costs by reducing rebound.

Polymono 18

Used in any concrete application to provide plastic shrinkage and settlement crack reduction.

Polyfibril 18

Its fibrillated web structure surrounds the aggregate in addition to strength-enhancing properties.

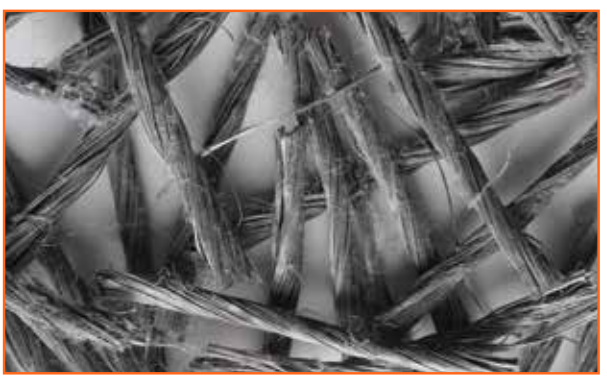


Polymacro® PM54

Increases shock resistance and energy absorbtion capacity. Heavily used in shotcrete applications like tunneling.

Polytwist® PT54

Made of 100% virgin copolymer/polypropylene, with twisted bundles of monofilament fibers, are used for structural concrete reinforcement. Prevents risk of corrosion compared to steel fibers and wire mesh reinforcement. Due to 0.91 g/cm^3 gravity, high number of fibers can be obtained in lower weights. Thus, higher and three-dimensional reinforcement of concrete mix is achieved. Its high performance structure yields maximum durability with no corrosion, magnetic and acid/alkali risk.



Used for,

Industrial Floors
Parking Areas
Field Concrete
Precast Applications
Tunnel-Dam Projects
Shotcrete Applications

FEATURES & BENEFITS

- Water soluble 600g/900g package alternatives
- Specifically designed packages for concrete mixers
- 20 kg packages

- 100% virgin polypropylene

- Stable alcali effect

- 70% relative humudity at 21 degree celcius = <0.10%

Tunneling Applications - A Unique Combination of Technical Expertise and Innovative Solutions

Homogeneous fiber distribution makes it possible to absorb energy in any point and any direction of the concrete segment; cracking resistance is considerably improved.

Meet Highest Requirements

Modern tunnel applications require concrete lining to meet high requirements. To increase reliability and service-life of your concrete linings, our fibers have been designed to increase crack control under high pressure and minimize spalling in conjunction points.

Maximize Service Life

Fibers improve the crack resistance of concrete structures, making them safer and more reliable over the entire span of service life. They are easy to use and can be directly mixed into concrete, eliminating the time and effort needed to transport and install traditional mesh.

Studies proved that fiber reinforcement significantly improves the load-bearing capacity of precast segments.

Advantages

- Homogeneous distribution
- Multidirectional reinforcement
- Resistance to corrosion
- Increased load bearing capacity

Control at design

Precast segments have to resist bending moments and flexural stress when being demoulded and transported to the storage facilities.

Improved Crack Resistance

Polypropylene fibers have actually been utilized in shotcrete applications for various large-scale projects, easy to add, mix, and shoot. Fibers also reduce freeze/thaw damage and penetration from water and chemicals due to three-dimensional effect of the fibers within the concrete mix.

Polymono 12

Heavily used in screed concrete and shotcrete applications due to high binding ability. High binding ability hampers micro-cracks.

Polymono 18

Used as a preventer for cracking and significantly reduces costs by reducing rebound in shotcrete applications.

Polymacro® PM54

Synthetic fibers prevents the risk of corrosion compared to steel fiber and wire mesh reinforcement. Due to 0.91 g/cm^3 gravity, high number of fibers can be obtained in lower weights. Thus, higher and three-dimensional reinforcement of concrete mix is achieved. Heavily used in shotcrete applications such as tunneling and mining.

Used for,

Industrial Floors
Parking Areas
Field Concrete
Precast Applications
Tunnel-Dam Projects
Shotcrete Applications

FEATURES & BENEFITS

- Stackable & non-stackable shipment alternatives
- Land and sea-route specific packaging options

- 100% virgin polypropylene

- High dispersion performance within concrete

- Custom packaging alternatives depending on application requirements

Excellent Spalling Resistance of Ultra-High-Strength Concrete Under Rapid Heating and Rapid Cooling

The addition of monofilament polypropylene fibers to concrete reduces plastic cracking and plastic settlement and, improves resistance to impact and abrasion.

Mechanism of Concrete Spalling

When concrete is heated, desorption of moisture in the outer layer occurs. Due to rapid rise in temperature vapor pressure rapidly rises. Insufficient tensile strength results in sudden dislodge in the form of explosive spalling of the surface layer.

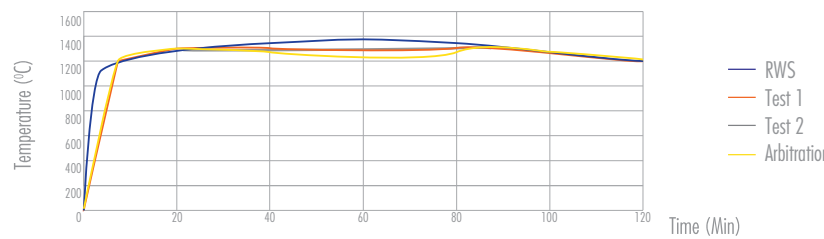
How Do Polypropylene Fibers Work?

At high temperatures polypropylene fibers start to melt due to progressive change of state which starts at approximately 150°C. This melting is believed to facilitate the reduction in the internal stresses in the concrete that causes the explosive spalling.

There are several factors that can influence concrete spalling such as moisture content, concrete permeability, presence of reinforcement and rate of healing.

Temperature curves

Temperature of the concrete heats gradually from surface inwards.



Meeting The Requirements

Large scale projects require fire resistant, durable structure, fast construction, minimum maintenance in service, minimum loss of service during repair and cost effective solutions. Polypropylene fibers are now used worldwide for their ability to reduce explosive spalling in concrete, mainly in tunnels.

Monofire

Monofire is used worldwide for its ability to reduce explosive spalling in concrete applications, especially in large-scale projects. They can be sourced in different packaging options, including handy fiber-packs that easily dissolve in wet concrete mix.

Investigations into the first Channel Tunnel fire in 1996 and second fire in 2008 reported that a significant loss of cross sectional area in the tunnel lining had occurred due to severe spalling of high strength concrete that had been exposed to very high temperatures. The loss of concrete was so great and embedded reinforcement steel had become so exposed that the structural integrity of the tunnel had been placed at risk.

Financial cost from direct damage and lost revenue of the 1996 Channel Tunnel fire was about £200 million.

There is a complex combination of chemical, physical and thermodynamic factors that influence explosive spalling. These include moisture content, type and size of aggregate, concrete permeability, rate of heating, presence of reinfocement and external loadings.

*The degree of spalling is also influenced by the fiber dosage. The concrete specification and fire risk assessments are important factors to consider when selecting the dosage. Road tunnels generally present greater fire risks than rail tunnels owing to the unpredictability of the vehicles and the nature of goods transported by road.**

Effect on Workability

The efficacy of all fiber reinforcement is dependent upon achievement of a uniform distribution of the fibers in the concrete, their interaction with the cement matrix, and the ability of the concrete to be cast or sprayed successfully. Essentially, each individual fiber needs to be coated with cement paste to provide any benefit in concrete.

Polyfibers® fibers are supplied in fully degradable paper packaging that enables the desired dosage per unit volume to be added directly into the concrete mixer.

**www.tunneltalk.com*

From Idea to Perfect Outcomes - Products and Know-How That Will Provide You Customized Solutions

Polyfibers® concrete reinforcement provide a more versatile alternative to traditional reinforcement methods for residential buildings and lightly loaded commercial buildings.

Flexible and Efficient Reinforcement

Fiber reinforcement is much more flexible to work with compared to traditional mesh or rebar, allowing complex shapes and use in narrow, hard to reach spaces. Also improves the mechanical properties of the basic material.

The Ideal Solution

Multidimensional, efficient distribution of fibers assures a uniform reinforcement of concrete structures. It is easy dose, mix, pump and finish, making it the ideal reinforcement solution for various applications from family houses to utility buildings.

Improves toughness, impact resistance, shear strength, flexural strength and ductility.

Cut your costs

Innovative design of fibers saves time and costs by eliminating mesh and reducing construction time - up to 35% on placement and material costs.

Ground Supported Slab

	Traditional Rebar	Polyfibers
Material	%40	%65
Labor	%60	%0
Total	%100	%65

Reduce Costs by Shortening Construction Time

Wire mesh can be difficult to lie down and raise a tipping hazard among concrete workers on the job sites. Polyfibers® products can safely and reliably replace all traditional reinforcement methods, allowing for significant safety improvements while also decreasing labor and total project costs.

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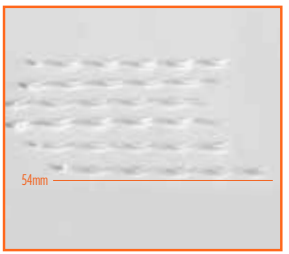

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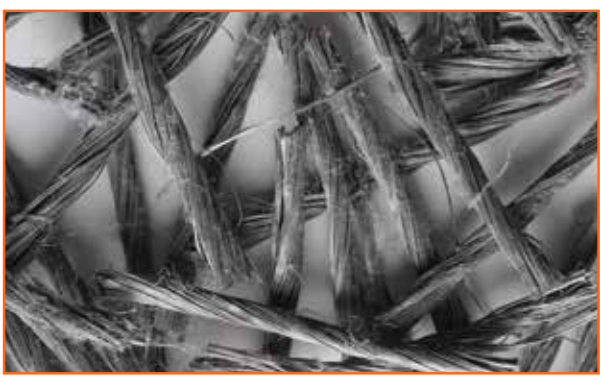

Synthetic fibers can be used to improve everything from slabs and driveways to sidewalks and decks

FEATURES & BENEFITS

- Transparent PET bags - 6 kg each
- Custom packaging options

- Polymer materials with high density and resistance

- Stable alcali effect

- Expert support for Polyfibers® product portfolio and application related alternatives.
- Technical support

Construction Chemicals - Adding Value and Reliability to Manufacturing Process

Polyfibers® provides the widest range of high-quality raw materials for construction chemicals industry to improve the placing, pumbing, finishing and consistency of concrete.

Advanced Performance

Polyfibers® comprehensive portfolio of efficient additives are designed to advance the performance, durability and aesthetics appearence of buildings and infrastructures throughout their lifetime and, to make living spaces more comfortable.

Customer Support Beyond Expectations

Let our team of concrete and engineering professionals work with you to help deliver profitably and service through our product portfolio and beyond - who will make sure that the right fiber is called out for the right application.

All our products are tested to assure compliance to all standards including ASTM 1116 and EN14889.

Custom packaging

Chemicals suitable for practically all demands are available in custom sized paper bags or in bulk.

Adventages

Polyfibers® staff provides consultancy on perfect dosing and mixing formulas.

Choose the Products That Best Feeds Your Needs

Our construction chemicals product portfolio offers high-tech solutions to meet your requirements in various applications; from floor systems to concrete and mortar additives and from insulation systems to cement based plasters also including ceramic adhesives and technical adhesives.

Polymono 3

Polymono 3, 3mm in size is mainly used in construction chemicals. Polyfibers® is the only manufacturer of 3 mm fibers in Europe and Middle East, which is used in repair mortars and adhesive plasters. Acts as a reinforcement to prevent cracks.

Polymono 6

Polymono 6 has proven reputation for construction chemicals. It is used to prevent the formation of cracks in plasters and repair mortars. Research shows that Polymono 6 significantly reduces the formation of cracks in mortars and plasters. Polyfibers® is the main raw material supplier of global brands in construction chemicals industry.

Polyfibers® is the main supplier of raw materials for construction chemicals industry's global brands.

FEATURES & BENEFITS

- Stackable & non-stackable shipment alternatives
- Land and sea-route specific packaging options

- Polymer materials with high density and resistance

- Diameter alternatives to meet application requirements

- Expert support for Polyfibers® product portfolio and application related alternatives
- Technical support

Polyfibers® Extensive Distribution Network For Excellent Customer Experience

Our skilled distribution network enables us to respond customer demands quickly and adequately with an excellent cooperation.

Distributor Program

Polyfibers® distributors receive access to product trainings, technical and after sales support as well as benefit from our sales and marketing resources to support their worldwide customers in the best possible way.

Worldwide Coverage

Our partnership with leading distributers with dedication and expertise provides valuable, local market knowledge and supports our commitment to offer best quality service to our international customers.

polyfibers®

polymacro® polytwist® polyflock®

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www.polyfibers.com

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