



ONESHOT

FIBER REINFORCEMENTS



FIBER
BETON

KİMYA SAN. VE TİC. A.Ş.

For More Robust Future; Chose **OneShot** Fiber!

ABOUT US

Fiber Beton Kimya Sanayi ve Ticaret A.Ş. is a new generation company established in 2016 with 100% domestic capital to serve in the mining and tunneling sectors.

Fiber Beton has created the OneShot Fiber brand with the mission and purpose of using fiber reinforcement in structures such as industrial facilities, marine structures, tunnels, etc., especially highways and railways projects.

Since the day it started its operations, it has provided fiber reinforcement supply and engineering services to millions of m2 of ground concrete, tunnel, mine, HEPP and dam constructions and has proven itself in the production and quality of Macro and Micro Synthetic Fiber Reinforcement.

Fiber Beton continues to offer the best solutions needed in the sector with innovative fiber reinforcement products that increase the service life and performance of concrete.



WHAT IS **ONESHOT** FIBER ?

OneShot Fiber Reinforcement (100% Polypropylene) is a type of synthetic fiber reinforcement in various sizes, designed as an alternative to steel mesh and steel wire reinforcement, used to prevent shrinkage cracks, hairline cracks, settlement cracks and crack propagation due to loading, especially in industrial floor concretes, which occur during the hardening of fresh concrete.



There are different fiber reinforcements grouped as Macro and Micro Synthetic Fiber Reinforcements according to various properties and usage areas.

Macro Synthetic Fiber



OneShot Macro Synthetic Fiber Reinforcement not only contributes to the improvement of the mechanical properties of concrete, but also provides maximum benefit with minimum cost in all your projects by saving time, labor and transportation.



Micro Synthetic Fiber



OneShot Micro Synthetic Reinforcement, which has the ability to absorb moisture, provides an internal curing effect by returning the moisture retained in the fibers during the fresh concrete phase to the concrete. Thus, it minimizes the formation of cracks due to heat and shrinkage and provides high structural integrity.

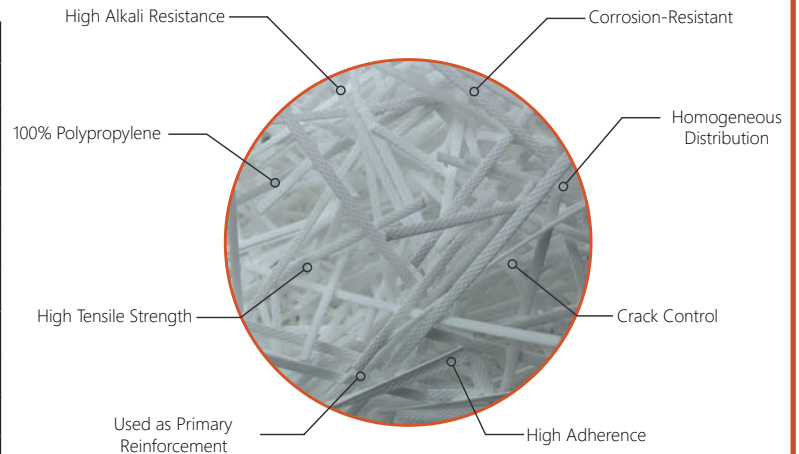


ONESHOT MACRO SYNTHETIC FIBER REINFORCEMENTS

GENERAL FEATURES

Technical Specifications

Raw Material	Polypropylene
Length	45 - 54 mm
Diameter (min. tolerance $\pm$ %5)	0,72 mm
Tensile Strength	530 - 580 Mpa
Elastic Modulus	7,5 Gpa
Density	0,90 - 0,92 gr/cm ³
Melting Point	168 °C
Water Absorption	None
Alkali Resistance	High
Dosage	2 - 7 kg/m ³
Fiber Class	II
Surface Texture	Embossed



Technical Advantages

- Increases the bearing capacity of concrete and provides effective crack control.
- Easy mixability and pumpability thanks to homogeneous distribution.
- Increases fatigue resistance and ductility of concrete.
- Easy to transport, store and use thanks to its low mass.
- High chemical and alkali resistance.
- High durability and does not cause corrosion.
- Significantly reduces labor costs compared to steel mesh.
- Increases the toughness and energy absorption capacity of concrete.
- Increases the resistance of concrete against freezing and thawing.
- It has a structure that does not affect magnetic fields.
- Increases precast production speeds by up to 50%.
- Much safer and lighter than steel.



Infinite service life



Effective crack control at every point with homogeneous distribution



High strength and carrying capacity



Easy to transport and apply thanks to its low mass



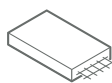
Resistant to all environmental conditions, high chemical and alkali resistance, anti-corrosion



Minimizing faulty workmanship through easy workability and application



Not affected by electromagnetic fields



When compared to steel mesh; many advantages such as labor and transportation



Up to 70% lower carbon footprint with savings on many components



With less material consumption and all other advantages; Cost-effective

OneShot Fiber Reinforcement Usage Areas

Areas of Use		OneShot Fiber	OneShot 54	OneShot 48	OneShot 45	OneShot Twist	OneShot Micro
Field and Ground Concretes	Field and Ground Concretes		•	•	•	•	•
	Factory Floor Concretes and Stockyards		•	•	•	•	•
	Cold Storage Floor Concretes			•	•	•	•
	Logistics Centers			•	•	•	•
	Top Coating Concretes			•	•	•	•
	Fuel Stations			•	•	•	•
	Metro Stations Waiting/Walking Areas			•	•	•	•
	Concrete Road and Sidewalks			•	•	•	•
Tunnels and Subways	Shotcrete Floor Stabilization		•				•
	Base Coating Concretes in Tunnels		•				•
	Tunnel Segment Coatings		•	•			•
	Slope Stabilization		•				•
	Under-Rail Invert Concretes		•	•			•
	All Interior and Exterior Coatings		•				•
	Underground Cable Ducts				•		•
Mines	Shotcrete Stabilization Applications		•				•
	Underground Chambers		•				•
	Manufacturing Floors		•				•
	Landing Road Concretes		•				•
Coastal and Harbor Structures	Ports Concrete Pavements		•	•	•	•	•
	Marina Floors		•	•	•	•	•
	Shipyards Floors		•	•	•	•	•
	Docks and Piers		•	•	•	•	•
	Concrete Pavement on Breakwaters		•	•	•	•	•
	Coastal Protection Elements		•	•	•	•	•
Konut inşaatı	Screeds			•	•	•	•
	Parking Lot Floors			•	•	•	•
	Concrete Floors of Pools			•	•	•	•
	Walking Trails			•	•	•	•
Precast Elements	Retaining Walls				•		•
	Concrete Pipes				•		•
	Concrete Blocks				•		•
	Liquid Tanks				•		•
	Facade Panels				•		•
	Precast Building Column				•		•
	Drainage Channels						•
Water Structures	Hydroelectric Power Plants (HEPPs)		•	•			•
	Sewage and Drinking Water Projects		•	•			•
	Irrigation Channels		•	•			•
	Channel Building Systems		•	•			•

Unlike steel wire and steel mesh, OneShot Macro Fiber distributes in the concrete in 3D and homogeneously, increasing the strength equally at every point.



OneShot Macro Synthetic Fiber Reinforcement provides a 70% reduction in carbon footprint compared to steel wire and steel mesh.



Labor and Cost Advantages

- OneShot Macro provides up to 40% time and price advantage by eliminating the use of steel mesh and related labor.
- It provides maximum occupational safety by eliminating steel mesh workmanship.
- It is much more economical than steel mesh and steel wire.
- Since there is no water absorption, it eliminates problems such as rust and corrosion.
- Since concrete cover is not used, it reduces the floor thickness.
- Thanks to its non-corrosion feature, extends its service life and maintenance times.
- It can be stored and preserved for a long time without any deterioration in its structure.
- It does not corrode the pump in shotcrete applications.
- Thanks to its low surface visibility, it also saves extra time and labor costs spent in surface finishing operations.



Dosing

OneShot Macro Fiber Reinforcement has a wide range of usage dosages such as 2-7 kg/m³ due to its wide usage area, the quality of the concrete used, etc. It is mostly used in the dosage range of 2-5 kg/m³, based on average loads in floor concretes and shotcrete applications. According to the project needs, dosing work is carried out by our expert consultants and engineers.

The recommended dosage of OneShot Micro Fiber Reinforcement varies between 0.3 kg/m³ and 2.0 kg/m³ according to the project requirements. The pulp volume of the concretes where Oneshot Micro Fiber will be used should be increased, and its fluidity should be improved with superplasticizer additives.

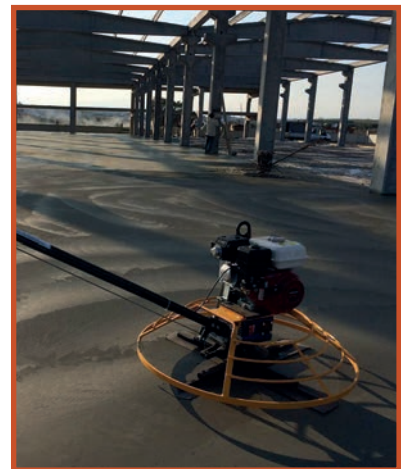


Usage and Application Method

Thanks to its special water-soluble package design, OneShot Makro is added directly to the concrete mix in the concrete plant or in the transmixer. After the calculated amount of fiber reinforcement is added to the mixture at regular intervals, the transmixer should be mixed at high speed for at least 7 minutes and maximum 10 minutes. This time allows OneShot Macro to distribute homogeneously in the concrete and give the best results. It is also recommended to use plasticizer additives in the right proportions to avoid problems in pumping the concrete and spreading the ground.

OneShot Macro Fiber does not damage pumps and equipment such as steel wire. A few hours after concrete pouring, a perfect surface appearance is achieved with the help of polishing or helicopter.

It does not cause clogging of the pump nozzle in shotcrete applications, it minimizes rebounds and ensures safe applicability.





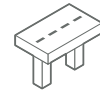
OneShot Macro Fiber 54

Macro Structural Fiber Reinforcement for Shotcrete

OneShot 54 are macro synthetic fibers with high energy absorption capacity, specially designed to improve the ductility and mechanical properties of shotcrete. OneShot 54 fiber reinforcement is an excellent alternative to steel wire and traditional rebar, especially in underground applications.

Technical Specifications

Raw Material	Polypropylene
Lenght	54 mm
Tensile Strength	530 - 580 Mpa
Elasticity Modulus	7,5 Gpa
Density	0,90 - 0,92 gr/cm ³
Melting Point	168 °C
Water Absorption	None
Alkali Resistance	High
Dosage	2 - 7 kg/m ³
Fiber Quantity / kg	45.000+
Surface Texture	Embossed



Bridge
Construction



Tunnel and Mine
Applications



Shotcrete
Applications

OneShot 54 Usage Areas

- In the tunneling industry
- Under-rail and invert concrete in subway constructions
- Shotcrete applications in mines
- In shotcrete applications for precasts
- In concrete castings for final coatings
- Highway toll and concrete roads
- It can be used in various applications such as safety barriers.



Technical Advantages

- It provides high absorption capacity thanks to first class raw material and optimum length of 54mm.
- Thanks to its ideal slenderness and elasticity, it does not clog the nozzle and provides easy pumpability.
- It is easy to transport, store and use thanks to its low mass in harsh underground conditions.
- It has high chemical and alkali resistance.
- Since it does not corrode, it can be used safely in areas with water flow.
- It significantly reduces labor and transportation costs compared to steel mesh.
- It increases the toughness and energy absorption capacity of concrete.
- It protects the concrete by not losing its properties in extreme underground ambient conditions (high/low temperature).
- Thanks to the feature that does not affect the magnetic fields, underground cable channels etc. Ideal for applications.



Highway Toll Constructions

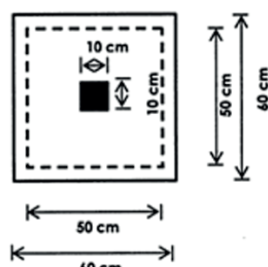
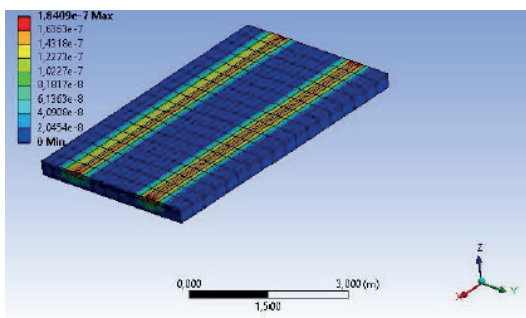


Shotcrete Application in Mines

OneShot Makro Fiber 54 is specially designed for all underground shotcrete applications.

ITU Building Materials Laboratory Test Results

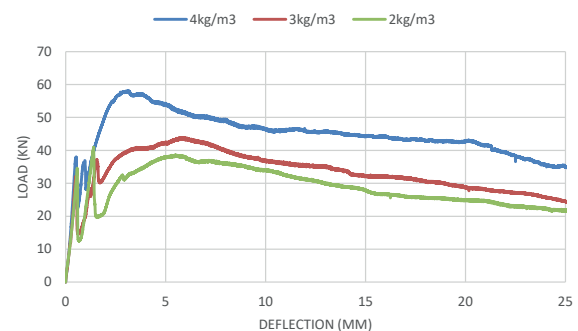
OneShot 54 Macro On slab samples for synthetic fiber shotcrete; According to the data obtained as a result of the test performed in accordance with EFNARC and BS EN 14488-5 standards, the energy absorption capacity (Toughness values) of the samples is determined by examining the load-deflection relationship.

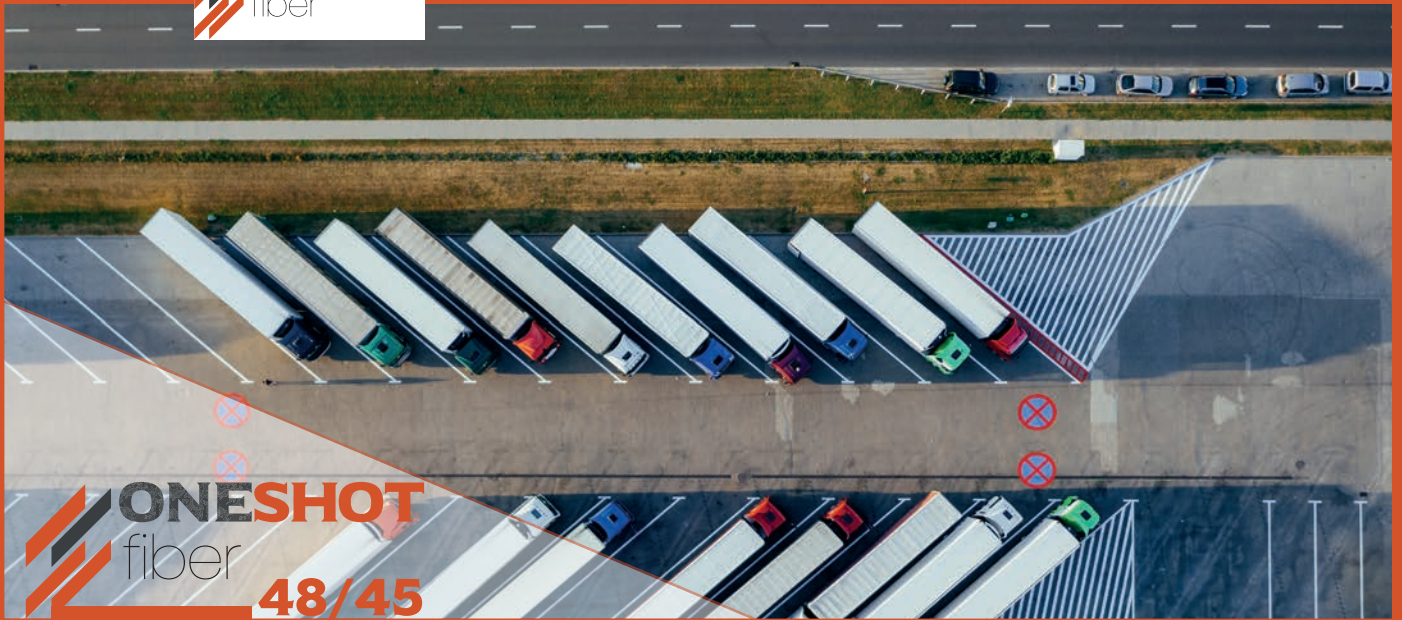


Plaque Sample Dimensions



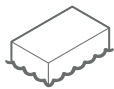
Appearance After Plaque Fracture Test



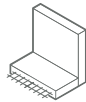


OneShot Makro Fiber 48/45 Macro Structural Fiber Reinforcement for Field and Ground Concretes

OneShot Macro Fiber 48/45 are macro synthetic fibers made of polypropylene with high energy absorption capacity, specially designed to improve the strength and mechanical properties of under-rail and field-ground concretes. OneShot Macro Fiber 48/45 fiber reinforcements are an excellent alternative to steel wire and steel mesh in field and ground concrete applications.



Water
Structres



Industrial
Floors



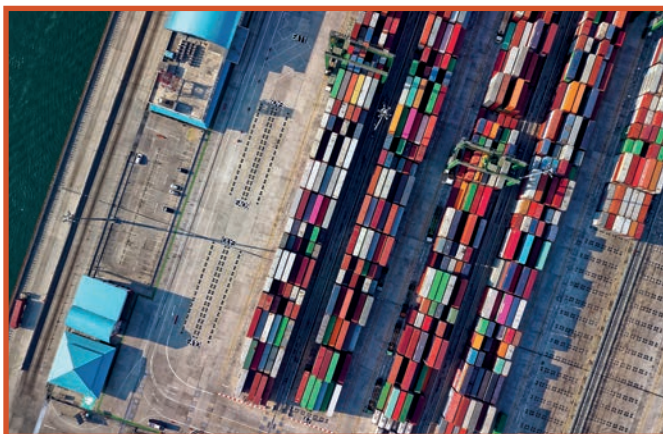
In All Concrete
Applications

OneShot 48 Usage Areas

- In field and industrial floor concretes
- In invert concrete under rail in subway constructions
- Walkways and sidewalks
- In concrete roads and pavement concrete
- In coastal, harbor and water structures
- It can be widely used in many areas such as screed and parking lot floors.

Technical Specifications

Raw Material	Polypropylene
Lenght	48 / 45 mm
Tensile Strenght	530 - 580 Mpa
Elasticity Modulus	7,5 Gpa
Desity	0,90 - 0,92 gr/cm ³
Melting Point	168 °C
Water Absorption	None
Alkali Resistance	High
Dosage	2 - 5 kg/m ³
Fiber Quantity / kg	50.000+ / 55.000+
Surface Texture	Embossed



Cable Duct Application

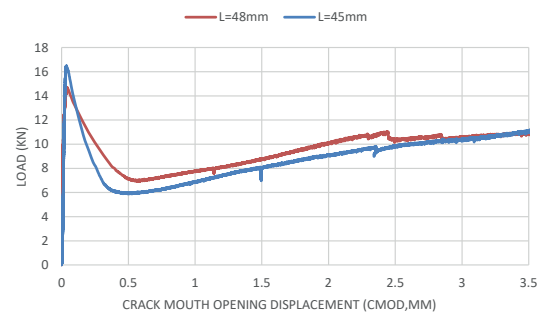
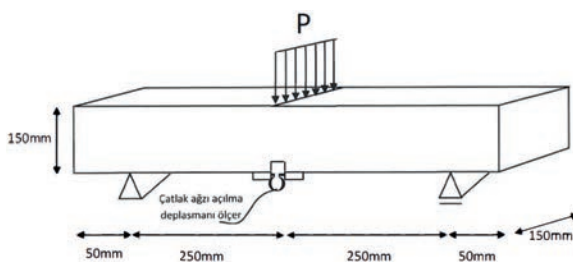
Technical Advantages

- It increases the final bearing capacity of the concrete, gives strength and provides effective crack control.
- Whether it is mixed directly in the field at the mixer or in concrete plants, OneShot Makro 48/45 provides easy pumpability and application without sacrificing strength, thanks to its ideal delicacy ratio and flexibility.
- It increases the fatigue resistance and ductility of concrete.
- Since it does not corrode, it can be used in wet or humid areas without any problems.
- It significantly reduces labor and transportation costs compared to steel mesh.
- It is much safer and lighter than steel.
- Thanks to its unique composition, it provides minimum surface visibility without sacrificing performance.
- It has high durability and does not cause corrosion.
- It increases the resistance of concrete against freezing and thawing.
- Increases precast production speeds by up to 50%.



ITU Building Materials Laboratory Test Results

OneShot 48/45 Macro Fiber on beam samples of floor concrete with synthetic fiber; closed cycle deformation controlled bending tests were carried out according to EN 14651 in accordance with TS EN 14889-2 and load-crack mouth opening displacement (CMOD) relations were obtained, CMOD 0.5mm, 1.5mm, 2.5mm and 3.5mm with proportionality limit. Residual strength was calculated at crack width values.



OneShot Twist Fiber

Twisted Fiber Reinforcement for Field Concrete

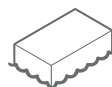
OneShot Twist, is a polypropylene based macro synthetic fiber reinforcement with copolymer structure. It is a high-performance fiber reinforcement type that eliminates the need for steel mesh and steel wire by acting as primary reinforcement in concrete, especially in field and ground concretes, when added to the mixture at the specified dosage.

Technical Specifications

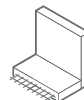
Raw Materials	Polypropylene
Length	48 mm
Tensile Strength	500 - 600 Mpa
Elasticity Modulus	6 Gpa
Density	0,90 - 0,92 gr/cm ³
Melting Point	170 °C
Water Absorption	None
Alkali Resistance	High
Dosage	2 - 5 kg/m ³
Fiber Quantity / kg	200.000 +

OneShot Twist Usage Areas

- Field and industrial floor concretes
- Under-rail concrete
- Coastal and harbor construction concretes
- Tunnel formwork system coating concretes
- Concrete roads
- Precast and prefabricated concrete elements
- It is used in many areas such as concrete applications for water structures and coating concretes.



Water Structures



Industrial Floors



In All Concrete Applications



Shotcrete Applications

Technical Advantages

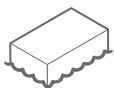
- OneShot Twist acts as the primary reinforcement in concrete, completely eliminating steel mesh.
- OneShot Twist provides crack control over edge and corner cracks.
- Reinforces concrete in 3 dimensions. It provides resistance against tensile stresses and internal stresses in each cm².
- Increases the ductility of concrete by providing high energy absorption capacity.
- Increases the impact resistance and fatigue resistance of concrete.
- Eliminates steel mesh and associated labor and provides up to 40% speed and cost advantage in projects.
- OneShot Twist works mechanically in concrete and does not change its chemical structure.
- Thanks to its high fiber count, OneShot Twist minimizes the formation of micro cracks, including shrinkage and shrinkage cracks in the plastic phase.



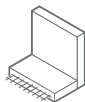


OneShot Micro Fiber Capillary Crack Prevention in Concrete Applications

OneShot Micro Fiber is a monofilament copolymer micro fiber added to fresh concrete to prevent shrinkage and plastic settlement cracks and to reduce their density and width. With its 18 μm diameter and 6-12-18 mm lengths varying according to demand, it is especially effective in preventing micro cracks.



Water
Structures



Industrial
Floors



In All Concrete
Applications



Shotcrete
Applications

OneShot Micro Usage Areas

- Large-surface field concretes, floor slabs
- In underground mine coating concretes
- In shotcretes
- On concrete roads, walkways and pavements
- Shore, harbor and all water structures
- Precast and prefabricated concrete elements
- Wet and dry system shotcrete
- Repair mortars, plasters and extruded concrete
- It is used in all cement based composites such as screed and parking lot floors.

Technical Advantages

- When used in appropriate dosage, it disperses homogeneously in the concrete and prevents the shrinkage cracks.
- It can be used by adding directly in the mixer or concrete plant.
- If there is a supporting steelwork, it delays its corrosion and rusting.
- Due to its high chemical and alkali resistance, it is not affected by alkaline components in concrete.
- Since it does not corrode, it can be used in wet or humid areas without any problems.
- It increases cohesion in fresh concrete and reduces bleeding.
- It increases the strength of the concrete and prevents swelling in the slipform.
- It increases the toughness and ductility of concrete.
- Thanks to its low mass, it is easy to transport, store and use.
- It increases the resistance of concrete against freezing and thawing.
- It can be used safely in precast production.

Technical Specifications

Raw Materials	Polypropylene
Color	White
Lenght	6-12-18 mm
Diameter (min. tolerance $\pm 5\%$)	18 μm mm
Tensile Strength	450 - 700 Mpa
Density	0,90 - 0,92 gr/cm ³
Melting Point	168 °C
Water Absorption	None
Alkali Resistance	High
Dosage	0.3 - 2 kg/m ³



Packaging

OneShot Macro Fiber is packaged in 3 kg, OneShot Twist 1 kg and OneShot Micro Fiber 600gr water-soluble paper packages as standard. Depending on the project needs, packaging can be done in different quantities or in big-bags.



Storage Conditions

It is recommended to store the products at 5 - 30°C, in their original packaging, protected from moisture, water and direct sunlight. Shelf life is indefinite under proper storage conditions. It should not be kept near flammable materials and care should be taken when stacking them on top of each other.



Certificates, Standards and Certificates of Conformity

- OneShot Macro Fiber Reinforcements are certified according to the EN 14889-2:2006 standard.
- Conforms to ASTM C-1116 "Standard Specification for Fiber Reinforced and Shotcrete Concrete".
- CE Certificate.
- Domestic Goods Certificate.
- ISO 45001:2018, ISO 9001:2015 and ISO 14001:2015 ISO certifications.







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