

## Polipropilen Elyaf (12 mm)



### 100% polyamide 6.6–based, polypropylene micro fiber (12 mm)

#### Description

Hammerfast Polypropylene Fiber 12 mm is a high-performance, polymer-based synthetic micro fiber that disperses homogeneously within concrete. It provides effective crack control against short-term plastic shrinkage in fresh concrete and long-term drying shrinkage.

#### Advantages

- Provides long-term and high-level protection against crack formation.
- Does not form clumps; distributes homogeneously throughout the concrete.
- Thanks to its high product density, it does not generate dust during mixing and packaging processes.
- Easy to apply.
- Reduces labor and equipment costs.
- Resistant to corrosion, alkalis, and acids.
- Offers easy storage and more advantageous logistics costs.
- Has a polymer structure that does not interfere with magnetic fields.
- Improves freeze-thaw resistance.
- Enhances the surface properties of concrete and prevents bleeding.
- Reduces internal pressure stress in concrete during fire, minimizing the risk of explosive spalling.

#### Areas of Application

- Industrial floor concretes
- Screenshot applications
- Ready-mix concrete production
- Precast concrete elements
- Road and pavement concretes
- Plaster and repair mortars
- Water structures (pools, tanks, etc.)

#### Application Method and Dosage

Used at a dosage of 600 g/m<sup>3</sup> in all ready-mix concrete, screed, and precast concrete applications.

For precast concrete elements, plaster, mortar, and construction chemicals applications, the dosage is determined specifically according to the project or application area.

#### Mixing

- Hammerfast Polypropylene Fiber 12 mm is produced in special water-soluble packages. It provides speed and ease by being added into the concrete together with its packaging in both batching plant and on-site mixes.
- It is compatible with all concrete admixtures and concrete classes.

#### Technical Properties

Density	1,14 gr/cm <sup>3</sup>
Length	12 mm
Filament Diameter	27 microns
Tensile Strength	900 Mpa
Elongation at Break	% 17,55
Melting Point	260 °C
Alkali Resistance	Very Good
Corrosion Resistance	Very Good
Fiber Count	111 million fibers/kg
Fiber Type	Monofilament (Single Fiber)
Water Absorption	None
Raw Material Type	%100 Polyamid 6.6
HS code	5503.40.00.00.00

**Note:** Values are based on a temperature of 23 ± 2 °C and a relative humidity of 50 ± 5%.

#### Plastic Shrinkage Test Results

Variables	Concrete Mix	
	Fiber-free concrete sample	Concrete sample with 600 g/m <sup>3</sup> fiber added.
Number of Cracks	12 pieces	12 pieces
Maximum Crack Width	2 mm	0,1 mm
Average Crack Width	0,83 mm	0,05 mm
Total Crack Area	2596,6 mm	43,9 mm
Water Evaporation	%1,22	%1,61

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#### Precautions

- Fibers should be added slowly and in a controlled manner to the mix to prevent clumping.
- Sufficient mixing time (minimum 3–5 minutes) must be ensured for homogeneous distribution.
- Exceeding the recommended dosage may negatively affect workability and cause difficulties in surface finishing.
- Fiber usage does not eliminate the need for structural reinforcement; it only provides micro-crack control.
- At high dosages, fibers may appear on the surface (hairing); this should be minimized using proper finishing techniques.
- Fibers do not require additional water in the concrete mix; adding water may reduce concrete performance.
- Concrete application rules must be followed under cold and hot weather conditions.
- Using fibers alone is not sufficient to prevent structural cracks; proper concrete design must be applied.
- In pumped concrete applications, dosage and mix design should be controlled to prevent equipment clogging.
- Fibers should be stored in a dry environment and must not be mixed with moist or wet materials.
- Surface curing procedures must not be neglected after application.

#### Storage and Shelf Life

- The product can be stored for up to 24 months from the production date if kept in its original, unopened packaging, in a dry and closed environment, protected from direct sunlight.
- If unused, the packaging should be tightly sealed, and pallets should not be stacked. High temperatures may increase viscosity and deteriorate the chemical structure of the product.

#### Packaging

- Standard package weight is 600 g ( $\pm 1.5\%$ ).
- Hammerfast Polypropylene Fiber 12 mm is packed in special water-soluble packages.
- Each pallet contains 300 kg of product.

#### Cleaning of Tools

All tools used should be cleaned immediately after application with lukewarm water

#### Safety Precautions

- Keep out of reach of children.
- Do not eat or swallow.
- Keep away from foodstuffs.
- Avoid inhalation and contact with skin.
- May cause allergic reactions
- In case of contact with eyes, rinse thoroughly with plenty of water and consult a doctor.
- Use gloves, goggles, and protective clothing during application.
- Wash hands thoroughly with water after application.
- For detailed safety information, read the Material Safety Data Sheet (MSDS).

#### Quality Certificates

- ISO 9001
- ISO 14001



9001:2015



14001:2015