

DATA SHEET



POLYMERIC MACROFIBERS WITH GRAPHENE OXIDE

**SECONDARY THREE-DIMENSIONAL
REINFORCEMENT FOR CONCRETE**



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Description

Macrofibers based on polypropylene polymeric compounds and graphene oxide, used as secondary reinforcement of concrete.

These high-performance macrofibers are designed with mechanical retention to maximize anchorage with the concrete, resulting in increased interfacial bonding and greater flexural strength.

This formulation with graphene oxide allows fibers to be obtained in the form of individual macrofilaments with great mechanical resistance, which when incorporated and distributed in the concrete, they act as a secondary three-dimensional reinforcement with a superior performance to the common polypropylene macrofibers that do not have this three-dimensional internal reinforcement in the fibers.

Applications

- As reinforcement of concrete subject to light, medium or heavy traffic.
- Parking areas.
- Concrete pavements with light, medium or heavy traffic.
- Canals and dams.
- Elements cast with sliding formwork.
- Wet or dry shotcrete, either permanent or temporary.
- Pre-fabricated elements.

Advantages

- Increases flexural strength in concrete.
- Increases the toughness, energy absorption and impact resistance of concrete.
- Reduces plastic shrinkage cracking in fresh concrete.
- Reduces segregation.
- Increases the mechanical strength and durability of concrete.
- Reduces the permeability of concrete.
- Does not corrode.
- Greater anti-spalling resistance in case of fire.
- High resistance to chemical attacks and alkalis.



Physical properties

Technical information

Material polypropylene / GO: 100% virgin
Fiber length: 48mm
Width: 1.2926mm
Thickness: 0.3405mm
Tensile strength: 550 Mpa min
Alkali resistance: Excellent
Specific weight: 0.92 g/cm ³
Color: Gray

Technical information

Flash point: 350°C
Melting point: 160-165°C
Humidity: 0%
Fibers per Kg: 30,000
Electrical Conductivity: Low

Application instructions

The macrofibers can be added before, during or after the batching of the concrete. The use of equipment such as conveyor belts and dispensers can be used to add macrofibers to the mixing hopper and/or mixing truck. Subsequently, mix for about 3 to 5 minutes at maximum speed until obtaining a homogeneous mixture and uniform distribution of the macrofibers in the concrete.

In any situation, the macrofibers must be added slowly so as not to create clusters and thus obtain a more homogeneous distribution throughout the mixture, the use of water reducers can help this action.

Dosage

- From 2 to 10 kg/m³, depending on the requirements of each project.

Note: It is recommended to carry out previous tests of the reinforced concrete before executing a large load, in order to find the adequate dosage according to the tests and conditions of the specific work.

Important information

- It is not recommended to increase the water content for the dispersion of the macrofibers, this would increase the contractions due to drying and there is a risk that cracks will appear and the resistance of the concrete will decrease.
- Macrofibers are designed to act as temperature reinforcement, they should NOT be used to replace structural steel.

Presentation

- 5 Kg and 25 Kg.

Storage

Keep in a cool, dry place, protected from sunlight, at room temperature (15 to 25 °C).

Expiration

The product has an expiration date of 5 years in its original packaging.

Safety precautions

- The use of gloves, boots and safety glasses is recommended for handling macrofibers.
- The standards and regulations in force at the place of application on Hygiene, Safety and Environment must be complied with.
- In case of doubt about the application of this product, consult the Technical Service of Energeia Fusion, S.A de C.V.



USE GLOVES



WEAR GLASSES



Legal Note

The information contained in this data sheet is provided in good faith and is valid only for the product to which it refers. The information is not intended to be exhaustive and is based on the current knowledge and experience of Energeia Fusion, S.A. de C.V., as long as the product is properly stored, handled and applied under normal conditions and in accordance with the recommendations expressed here. Due to the variability of the materials and working conditions of each user and that are therefore beyond our control, our guarantee is limited solely to the quality of the supplied product. It is advisable to carry out the relevant tests with the product and determine its suitability before its final application.

Energeia Fusion, S.A. de C.V, is not responsible for any damage that may be caused by mishandling the product. For advice please consult the Technical Service of Energeia Fusion, S.A. de C.V.

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