

## REINFORCEMENT MACROFIBER POLIFIBER® TWIST CE

**POLIFIBER® TWIST 50MM** is a modified polyolefin reinforcement fiber, specially designed to be added to poured concrete, in order to provide them flexo-tensile strength and increase the energy absorption capacity, impact and abrasion resistance, avoid cracking and increase concrete durability, improving the meshes and metallic fibers properties, and reducing costs.

These fibers replace the armor designed to absorb tensile forces created during the concrete setting and hardening process, making it possible to substitute either totally or partially, depending on the case, the main armors.

If we add **POLIFIBER® TWIST 50MM** to the concrete, the energy absorption capacity and the tensile strength of the concrete increase, giving the concrete a residual flexion resistance of 1.3MPa at 0.5mm CMOD and 0.9Mpa at 3.5mm CMOD with a dosage of 4kg / m<sup>3</sup> according to the UNE EN 14889-2: 2008.

**POLIFIBER® TWIST 50MM** is especially indicated for use in:

- Slabs, pavements, polished concrete, forged and concrete slabs.
- In general, for poured concretes that needs to increase the tensile strength, impact resistance, and energy absorption capacity.



As manufacturers we can  
**DESIGN AND PRODUCE**  
fibers according to  
the needs of our customers



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# POLIFIBER®



## SYNTHETIC FIBERS FOR CONCRETE



# POLIFIBER PLUS®

FIBRA ESTRUCTURAL



**POLIFIBER®** is a reinforcing fiber produced with polypropylene multifilament, studied to be added to mortars and concretes in order to reduce the cracking and increase its durability impact resistance, tensile strength and compression resistance, becoming an effective and inexpensive alternative to metal mesh and fibers when it comes to control the cracking.

During the setting time it is produced an internal tension and pressure of the concrete, causing micro-cracks which could turn into bigger ones. Metal mesh and fibers are useful just when this process has already happened and the concrete is cracked, while **POLIFIBER®** prevents its formation when the concrete is in plastic state.

If we compare **POLIFIBER®** 's technical advantages with metal mesh or fibers ones, the most noteworthy are: more durability, its indifference to the rusting/oxidation process, it provides a perfect finishing, it increases abrasion and impact resistance, its stronger impermeability reduce water absorption, better freezing resistance, it reduces concrete disintegration risks, the improvement of its passive resistance to fire decrease the phenomenon known as spalling, it distributes in a uniform and homogeneous way the tensile forces created during the shrinkage process avoiding the formation of micro-cracks which could turn into bigger ones.

Our product is specially indicated to be added to:

- |                                       |                                   |                       |
|---------------------------------------|-----------------------------------|-----------------------|
| • Concrete slabs, screeds and floors. | • Shotcrete and projected mortar. | • Facade grouting.    |
| • Concrete pavements.                 | • Precast elements                | • Mortars in general. |
|                                       | • Cementitious overlays.          |                       |



**POLIFIBER PLUS®** is a modified polyolefin structural fiber, designed to be added to shotcrete and poured concrete making it able to avoid cracking and increase its durability, improving metal meshes and fibers attributes and reducing costs.

These fibers replace the armor designed to absorb tensile forces created during the concrete setting and hardening process, making it possible to substitute either totally or partially, depending on the case, the main armors.

When adding **POLIFIBER PLUS®** to concrete or mortar it achieves the following advantages:

- Increases energy absorption and tensile strength, capability over the levels required by the EHE-8, and this is why they are considered structural fibers.
- They are highly resistant to chemical attacks, and opposite to metal mesh and fibers, reinforced concrete is not affected by corrosion and oxidation/rusting process.
- Due to physical and chemical treatments applied to this fiber, an exceptional fiber-concrete adhesion is achieved.
- It distributes in a uniform and homogeneous way the tensile forces created during the cracking process, avoiding the formation of small cracks which could turn into bigger ones.
- It increases impact and abrasion forces resistance, as well as tensile strength.
- It also increases its impermeability and reduces concrete disintegration risks.
- It improves its passive resistance to fire, decreasing the phenomenon known as spalling.

Our fiber is specifically indicated to be used in:

- Shotcrete and projected mortar, used in tunnels, mining, pools ...
- Concrete slabs, screeds and floors, as well as precast elements.
- Piers and marine platforms.
- Security structures: glue, safe, armor.
- In general, for concretes that needs to increase the tensile strength, impact resistance, and energy absorption capacity.

**POLIFIBER PLUS 55MM®** is a polyester structural fiber for shotcrete and poured concrete, specially designed to use it in mines and other applications where water drainage is necessary. These fibers have a specific weight higher than water, so if they fall in the drain areas, they submerge allowing a correct functioning of the system and avoiding the obstruction of the drainage pumps.



Polypropylene Fiber **POLIFIBER®** is **resistant to concrete alkalis**, and maintains its properties intact against the alkaline PH of concrete and cement.

**POLIFIBER®** provides a fiber **endowment three times superior than glass fibers**. Adding the same kg. of fibers of the same size, concrete with polypropylene fiber will contain a **number of fibers 3 times higher** than concrete with fiberglass, so **POLIFIBER®** will provide the concrete with a **greater anti-cracking effect**.

**POLIFIBER®** **increases the passive resistance of concrete against fire**, decreasing "spalling", because it creates micro-channels inside the concrete that relax internal tensions as a result of the volume changes that the concrete undergoes when it is exposed at high temperatures.

**POLIFIBER®** polypropylene fibers have excellent manoeuvrability, they **do not break or get inserted into the skin when handled, and do not irritate the skin**.

**POLIFIBER®**, provides an **economic advantage** from fiberglass. It allows to **reduce costs**, endowing the concrete with **superior qualities than fiberglass**.



**POLIFIBER PLUS®** provides an fiber **endowment 8.5 times higher than metal fibers**, producing a better redistribution of tensions, raising the total contact surface and increasing the proximity between fibers. **POLIFIBER PLUS®** provides concrete with **greater ductility and energy absorption capacity**.

**POLIFIBER PLUS®** polypropylene structural fiber **does not suffer the oxidation and corrosion like metallic fibers, and is more stable against chemical attacks**. Studies of a prestigious university concluded that after one year, the samples of **concrete made with metallic fibers maintained 54% of their capacity of energy absorption**, while the samples reinforced **with synthetic fibers maintained 98% of their capacity**, demonstrating that synthetic fibers guarantee the durability of the fiber reinforced concrete and the maintenance of its properties during its useful life, more than the metallic fiber.

**POLIFIBER PLUS®** **increases the passive resistance of concrete against fire**, decreasing "spalling", because it creates micro-channels inside the concrete that relax internal tensions as a result of the volume changes that the concrete undergoes when it is exposed at high temperatures.

The structural polypropylene fiber **facilitates the addition processes**, the quantity to be added in kg/m3 of concrete is lower than metallic fibers, and can be dosed directly by soluble containers. They **simplify storage and distribution**, do not rust, and do not need special storage conditions.