POLIFIBER TWIST 50MM is a modified polyolefin reinforcement fiber, specially designed to be added to poured concrete, in order to provide flexo-tensile strength and increase the energy absorption capacity, improve impact and abrasion resistance, avoid cracking and increase concrete durability, improving 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 it, either, partially or totally depending on the case.

If we add POLIFIBER TWIST 50MM to concrete, energy absorption capacity and tensile strength increases, giving to concrete a residual flexion resistance of 1.3MPa at 0.5mm CMOD and 0.9Mpa at 3.5mm CMOD with a dosage of 4kg / m³ 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.

Weight and bending curve obtained in reinforced concrete test with 4kg/m³ of POLIFIBER TWIST 50MM, according to NBN EN 14651

Image of 3-point flexion test according to NBN EN 14651 + A1 (2007), reinforced concrete with 4kg/m³ of POLIFIBER TWIST 50MM
Concrete reinforced with **POLIFIBER TWIST 50MM** is highly resistant to chemical attack, unlike reinforced concrete with mesh and metal fibers, our fibers are not affected by oxidation and corrosion processes.

Concrete coverings that guarantee non-oxidation during the project life, are not met in a concrete reinforced with metallic fibers, given that fibers distribution are random, and there will be fibers distributed over the surface that will oxidize, increasing their volume and losing adhesion, extending oxidation to some fibers inside the concrete, so concrete will diminish its properties as time goes by, instead the polypropylene fibers do not suffer oxidation and corrosion like metallic fibers, they are more stable against chemical attacks, constituting a great advantage for the durability of fibro-reinforced concrete.

It produces a homogeneous and uniform distribution of tensions produced in the setting, avoiding the formation of micro-cracks that can produce major breaks.

Increases impact and abrasion resistance, as well as tensile strength.

It increases the impermeability and reduces the risk of concrete disintegration.

Increases passive resistance to fire, decreasing the phenomenon known as "spalling".

Due to the fibers physical-chemical treatments, it is produced an excellent fiber-concrete adhesion.

### PHYSIO-CHEMICAL PROPERTIES:
- **Raw material used:** Polypropylene
- **Density:** 0.91 grams / cm³
- **Production process:** Extrusion
- **Form:** group of 10 fibers
- **Fiber length:** 50mm.
- **Developed fiber length:** 52.5mm
- **Fiber class:** type II
- **Equivalent diameter:** 0.6829 mm
- **Slenderness (λ):** 73,53
- **Fiber thickness:** 3.000 deniers per filament (3.333 dtex)
- **Distortion temperature:** 120ºC
- **Decomposition temperature:** 260ºC
- **Tensile Strength:** 530N/mm²
- **Elongation at break:** 9,2%
- **Elasticity modulus:** 7.4 kN / mm² (7.400 MPa)
- **Consistence with 4kg / m³ fibers:** Vebe time 17 s
- **Total length:** 3.000 m / kg of fiber.
- **Fiber frequency:** 57.150 fibers / Kg

### APPLICATION DETAILS:
- **Dosage:** 4 kg/m³ to achieve the residual resistance to flexion result of 1,3MPa a 0,5mm CMOD and a residual resistance to flexion of 0.9MPa a 3,5mm CMOD, according with the requirements of the Rule UNE-EN 14889-2.
- **Recommended dosage from 2 to 6 kg/m³, depending on the project requirements.**
- **Is recommended to use at least 4 kg/m² of top layer for polished concretes.**
- **Its use is recommended in thicknesses of at least 15 cm.**
- **Incorporar la dosis de producto a la hormigonera como un componente más del hormigón, en cualquier momento de la mezcla o al final de la misma, nunca directamente sobre el agua antes de agregar el resto de componentes. Una vez añadidas las fibras, prolongar el amasado durante al menos 5 minutos.**
- **The product doesn’t need any specific caution to handling.**
- **Permissible variation:** According with Rule UNE-EN 14889-2

**For additional information please visit our website:** [www.extrupol.com](http://www.extrupol.com)