

# Expanfiber\* PPF

High performance micro polypropylene fiber

## Uses

- Expanfiber\* PPF is primarily used as a crack controlling additive for cementitious materials. Typical applications are:
- Crack control in ready mix concrete, and concrete contain micro-silica
- Crack control in precast concrete segments
- Crack control in conventional shotcreting & screeds.
- Crack controlling in rendering mortars,
- Crack control in concrete slabs, pavements, canals lining, driveways, and in imprinted concrete.

## Advantages - Benefits

- User friendly
- Excellent crack reduction in early age concrete
- Better concrete durability & reduce surface dusting.
- Improves impact and abrasion resistance
- Improves cohesiveness.
- Reduce segregation of the mix.
- Reduce shotcrete rebound.
- Cost effective, save anti crack wire mesh
- Versatile – inhibit intrinsic cracking in concrete, improves finishing.
- Improve concrete durability and acts as a rust proofer.
- Significant improvement in fire resistance and reduction to spall-damage.
- Better structural integrity protection.

## Standards compliance

Expanfiber\* PPF conforms to ASTM C111.60

## Description

Expanfiber\* PPF is a high performance micro polypropylene fiber, developed to used with cementitious material concrete/mortar as a crack controlling additive. It is available as monofilament 19, 12 mm in length for concrete and 6mm in length for plaster and mortars.

It is used to inhibit the formation of small cracks which can occur through plastic shrinkage, premature drying and early thermal changes, in order to provide utilization of the intrinsic properties of the hardened cementitious material.

Expanfiber\* PPF is based on selected raw materials and manufactured under controlled conditions to give a consistent product.

Expanfiber\* PPF is available in three grades:

**Expanfiber\* PPF:** 12 mm & 19 mm fiber length is designed for concrete mixes, to be used with more than 5 mm size aggregate mixes

**Expanfiber\* PPF:** 6 mm fiber length is designed for mortar mixes.

## Properties

<b>Form</b>	: Virgin Polypropylene fiber
<b>Specific gravity</b>	: 0.91 g/cm <sup>3</sup>
<b>Diameter</b>	: 34 microns
<b>Alkali content</b>	: Nil
<b>Chemical resistant</b>	: Excellent, especially alkaline
<b>Sulphate content</b>	: Nil
<b>Air Entrainment</b>	: Air content of concrete will not be significantly increased
<b>Youngs Modulus</b>	: 5500 - 7000 MPa
<b>Tensile Strength</b>	: Stretch enhanced to 350 N/mm <sup>2</sup>
<b>Melting Point</b>	: 160°C
<b>Water absorption</b>	: < 0.02%
<b>Elongation at break</b>	: 300 – 500 %

## Dosage

The optimum dosage of Expanfiber\* PPF to meet specific requirements should always be determined by trial mixes using the materials and conditions that will be experienced in use.

As a guide to trials, the following dosage levels of Expanfiber\* PPF are recommended.

### For concrete mix

Fiber length	: 12 mm or 19 mm
Aggregate size, max	: 32 mm
Dosage	: 0.90 Kg. / m <sup>3</sup>
For fire resistant	: 1 – 3 Kg. / m <sup>3</sup>

### For mortar mix

Fiber length	: 6 mm
Dosage	: 0.60 Kg. / m <sup>3</sup>

- **Millions of microfilaments per Kg.**
- **30 – 50 x more fibers than fibrillated fibers.**
- **High surface area per Kg. lower dosage for the same results as fibrillated fibers.**
- **Smooth fiber surface = 'fiber – free' concrete surface.**

## Instructions for use

### Mix dosing

In pre-mixer: Add Expanfiber\* PPF to dry or wet concrete, no additional mixing time is required.  
In truck mixer: on the job site mix at high drum speed, mixing time approximate 1 minute / m<sup>3</sup> to obtain a good fiber dispersion.

### Compatibility

Expanfiber\* PPF is compatible with other Fospak concrete admixtures in the same concrete mix. Any admixtures and Expanfiber\* PPF should be added to the concrete separately and must not be mixed together prior to addition. The trial mixes should assess the resultant properties of concrete.

Expanfiber\* PPF is suitable for use with all types of cements OPC, SRC and cement replacement materials such as PFA, GGBFS, and silica fume.

### Dispensing

The correct quantity of Expanfiber\* PPF should be measured and should then be added to the concrete.

### Estimating - packaging

Expanfiber\* PPF available in 25 Kg. Bag.

### Storage

Expanfiber\* PPF should be stored in dry condition in original bag.

### Precautions

#### Health and safety

Expanfiber\* PPF does not fall into the hazard classifications of current regulations. However, it should not be swallowed.

For further information consult the Material Safety Data Sheet available for this product.

\* Denotes the trademark registered

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