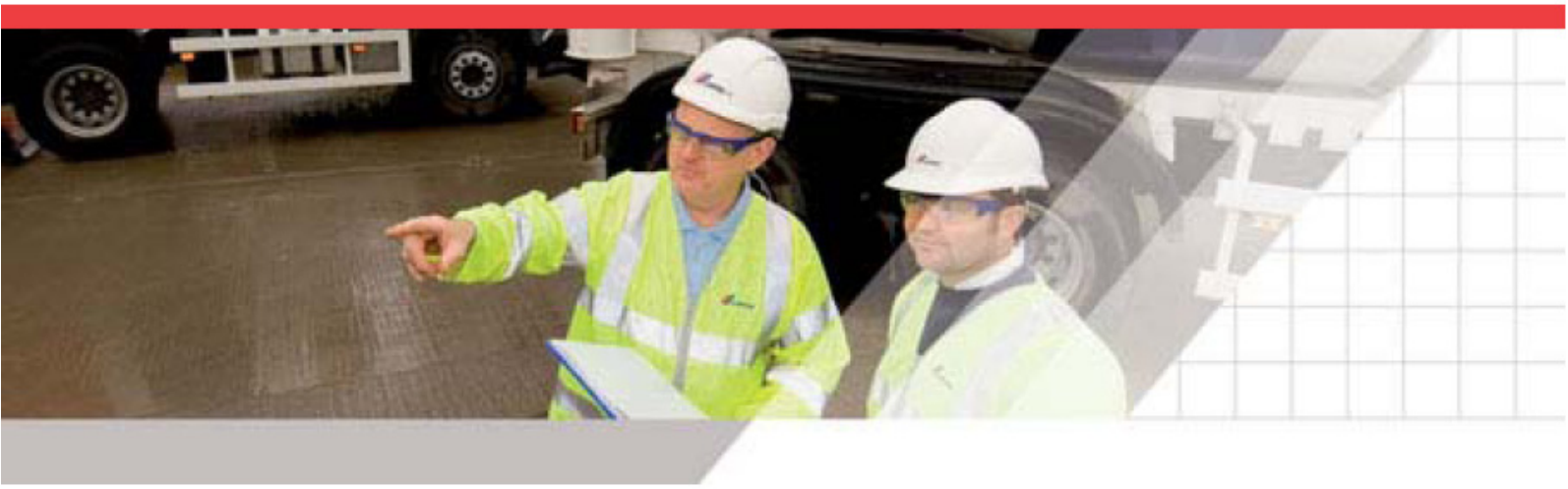

Concrete Solutions Datasheet

POLYPROPYLENE FIBER CONCRETE

With CEMEX you can be assured of getting the best range of concrete solutions, specifically designed to demanding specifications for various end uses. Polypropylene Fiber Concrete is versatile and can be used in most applications.

Polypropylene fibers are added to concrete during batching. Thousands if individual fibers are then evenly dispersed throughout the concrete during the mixing process creating a matrix-like structure.

Applications:

- DIY applications
- Internal floor-slabs (retail stores, warehouses, etc.)
- External slabs (driveways, patio's, etc.)
- Agricultural applications
- Roads, pavements, driveways, curbs
- Shotcrete, thin section walls
- Overlays, patch repair
- Water retaining structures, marine applications
- Deep lift walls

Issues and Solutions

Plastic state advantages

The addition of fibers helps to maximize the intrinsic early strength of concrete and specifically:

Characteristics	Value
• Improves concrete resistance to plastic shrinkage cracking. • Inhibits formation of micro cracks due to dimensional change. • Plastic settlement	• Reduces frequency of plastic shrinkage cracking. • Improved durability and reduced permeability. • Decreased risk of plastic settlement cracking over rebar.

Note: Polypropylene fibers actually inhibit the formation of plastic cracks in concrete, whereas steel mesh only has functional values after the concrete has

Other fiber concrete available at CEMEX: **Macro fiber concrete** **Steel fiber**

Characteristics and Value (continued)

Working Improvements

Polypropylene fibers offer many installation advantages, enabling a better job to be achieved in less time

Characteristics	Value to customer
• Increased cohesion of the mix. • May eliminate crack control steel mesh. • Concrete placement and plastic shrinkage crack control in ONE operation. • Reduced bleeding. • Less expensive (per sq. yd.) than conventional steel reinforcement mesh.	• Reduces plastic settlement. • Easier finishing. • No need to purchase and store additional material. • No delays to fast track schedule. • Easier positioning of control joints. • Reduced site labor. • Reduced project cost.

NOTES:

1. Effective control joints and proper curing is essential for all concrete slabs

2. Polypropylene fiber reinforced concrete CANNOT be used as a substitute for structural steel reinforcement.

Final Concrete Performance

The effects of polypropylene fiber reinforced concrete in its plastic state lead to additional advantages in its hardened state.

Characteristics	Value to customer
• Reduced plastic cracking means a reduction in surface permeability. • Bleed water control inhibits migration of cement fines and sand to the surface. • Even distribution of fibers throughout the concrete. • A tougher surface with fewer bleed channels.	• Enhanced durability. • Improved flexural properties. • Increased resistance to spalling at higher temperatures. • Reduced absorption of water, chemical and dirt. • Reduced project cost.

Cost benefit analysis

- Cost savings in secondary reinforcement steel for ground supported slabs
- Faster construction (removes the need to handle WWF)

Health and Safety

Contact with concrete may cause irritation, dermatitis or severe alkali burns. There is serious risk of damage to the eyes. Wear suitable waterproof protective clothing, gloves and eye/face protection. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. After contact with skin, wash immediately with plenty of clean water. Keep out of reach of children.

FAQ's

Q. Can fiber be used in structural concrete?

A. Yes, but it cannot be used to replace or supplement structural reinforcement. However, it can be used in conjunction with the steel to help reduce settlement cracking over reinforcement, particularly in deep sections such as walls and columns.

Q. Is it more cost-effective to use fiber instead WWF?

A. Yes, in most cases, polypropylene fiber has a lower cost than WWF per square foot. There may also be savings and improved safety associated with not handling the WWF.

Q. Are any special finishing techniques required?

A. No, the concrete can be compacted and finished normally. Trowelling embeds the fiber in the concrete surface. Some fibers may be exposed where textured finish is applied, but these quickly disappear.

Q. Can concrete with fiber be pumped?

A. Yes, in most cases.

Q. Are control joint necessary?

A. Yes, control joints are necessary and should be spaced at normal intervals prescribed for an "unreinforced slab design".

Q. What is the dosage rate for polypropylene fibers?

A. Fiber dosage rate will vary by application. Contact your CEMEX Sales Representative for assistance.