

CHEMFIT FIBERPLUS FIB12

Synthetic Fiber Reinforcement – For Plastic Shrinkage Crack Reduction & Enhanced Durability in Hot Climates

PRODUCT DESCRIPTION

ChemFit FiberPlus FIB12 is a high-performance synthetic fiber reinforcement system specifically designed to reduce plastic shrinkage cracking and enhance concrete durability in hot climates. These micro-fibers are uniformly dispersed throughout the concrete mix, providing three-dimensional reinforcement that controls cracking during the critical plastic shrinkage phase. The fibers are particularly effective in hot weather conditions where rapid moisture loss can lead to extensive surface cracking.

PRIMARY APPLICATIONS

ChemFit FiberPlus FIB12 is recommended for use in conditions such as:

- Hot climate concreting where plastic shrinkage cracking is a concern
- Industrial concrete floors and slabs
- Pavements, roads, and highways
- Bridge decks and parking structures
- Precast concrete elements
- Shotcrete and tunnel linings
- Residential and commercial slabs-on-grade
- Warehouse and distribution center floors
- Concrete repair and overlay applications
- Any concrete exposed to rapid drying conditions (wind, high temperature, low humidity)
- Mass concrete pours requiring crack control

KEY FEATURES AND BENEFITS

- **Reduces plastic shrinkage cracking** – Controls cracking during the critical first 24 hours after placement
- **Hot climate performance** – Specifically effective in high-temperature, low-humidity, and windy conditions
- **Three-dimensional reinforcement** – Provides uniform crack control throughout the concrete matrix
- **Enhances durability** – Reduces crack formation that can lead to long-term durability issues
- **Improves impact resistance** – Increases concrete toughness and resistance to impact loads
- **Reduces permeability** – Minimizes crack formation that allows water and chlorides to penetrate

- **Easy to use** – Added directly to the concrete mix during batching
- **No special mixing equipment required** – Fibers disperse uniformly with standard mixing
- **Non-corrosive** – Will not rust or corrode like steel fibers
- **Lightweight** – Does not significantly affect concrete density
- **Environmentally compliant** – Conforms to European Directive 94/62/EC
- **Cost-effective crack control** – Eliminates or reduces need for wire mesh in many applications

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Material	100% synthetic polypropylene (or copolymer)
Fiber Type	Monofilament / Fibrillated (specify based on product)
Color	Natural / White (may vary)
Length	12 mm (standard)
Diameter	18 – 32 microns (micro-fiber range)
Specific Gravity	0.91 (floats in water)
Tensile Strength	> 500 MPa
Elastic Modulus	> 5,000 MPa
Melting Point	> 160°C
Ignition Point	> 350°C
Alkali Resistance	Excellent (pH 12.5 – 13.5)
Corrosion Resistance	Excellent (non-corroding)
Packaging Compliance	Conforms to European Directive 94/62/EC

PACKAGING AND STORAGE

Packaging:

- 0.6 kg water-soluble bags (standard dosage per m³ of concrete)

Storage:

- Store in original sealed packaging in a dry, cool location
- Protect from moisture, direct sunlight, and extreme heat
- Keep packaging intact until ready for use
- Avoid prolonged exposure to UV radiation

Shelf life:

- 24 months from date of manufacture when stored properly

DOSAGE AND COVERAGE RATES

The recommended dosage of **ChemFit FiberPlus FIB12** is **0.6 kg per cubic meter of concrete**.

- **Standard dosage (0.6 kg/m³):** Provides optimal plastic shrinkage crack reduction for most applications including slabs, pavements, and floors
- **Increased dosage (0.9 kg/m³):** Delivers enhanced crack control and impact resistance for severe exposure conditions or large exposed surface areas
- **Decreased dosage (0.3 – 0.5 kg/m³):** Provides moderate crack control for less critical applications or where some cracking is acceptable
- **Per m³ of concrete:** 0.6 kg (one bag per cubic meter of concrete)
- **Yield per 0.6 kg bag:** Covers exactly 1 cubic meter of concrete at standard dosage
- **Yield per pallet (assume 50 bags):** Covers approximately 50 cubic meters of concrete

NOTE: Concrete trial mixes shall be carried out to confirm optimal dosage for specific project requirements. The standard dosage of 0.6 kg/m³ is effective for most hot climate applications. For extreme conditions (high wind, very low humidity, temperatures above 40°C), consider increasing dosage to 0.9 kg/m³. Do not exceed 2.0 kg/m³ without consulting ChemFit technical support.

APPLICATION GUIDELINES

ChemFit FiberPlus FIB12 should be added directly to the concrete mix during batching. For best results, add the water-soluble bag containing the fibers to the mixer early in the batching cycle, typically with the aggregates or sand, to ensure maximum dispersion and mixing action on the bag and fibers. The water-soluble bag will dissolve completely during mixing, releasing the fibers uniformly throughout the concrete. The concrete should be mixed for a minimum of 3 to 5 minutes to ensure complete bag dissolution and uniform fiber dispersion. Extended mixing (5-7 minutes) will improve fiber distribution without damaging the fibers. This product is compatible with all standard Portland cements, blended cements, and most supplementary cementitious materials such as slag, fly ash, and silica fume. **ChemFit FiberPlus FIB12** is compatible with all concrete admixtures including water reducers, superplasticizers, retarders, accelerators, air entrainers, and corrosion inhibitors. No special batching or mixing procedures are

required. For hot climate applications, take additional precautions including cooling aggregates or mixing water, using retarders to extend working time, and applying curing compound immediately after finishing. Proper curing (wet burlap, plastic sheeting, or curing compound) is essential to maximize the crack-reducing benefits of fiber reinforcement. For slab applications, standard finishing practices (bull floating, troweling) are not affected by the fibers.

HEALTH AND SAFETY

ChemFit FiberPlus FIB12 is not classified as hazardous under normal use. Fibers may cause mechanical irritation to eyes, skin, or respiratory tract if airborne dust is generated. Avoid creating airborne dust when handling. If eye contact occurs, do not rub; rinse thoroughly with water for 15 minutes and seek medical advice if irritation persists. For skin contact, wash with soap and water. If inhaled, move to fresh air. Use safety glasses, gloves, and dust mask when handling large quantities. Standard concrete safety precautions apply (protect skin from wet concrete, avoid inhalation of cement dust). Refer to the Safety Data Sheet for detailed information.

CLEANG OF TOOLS

Clean all batching equipment, measuring containers, and spillages with water immediately after use. Dried or cured material may require mechanical removal. Standard concrete cleanup procedures apply.

APPROVALS AND STANDARDS

ChemFit FiberPlus FIB12 conforms to the following standards:

- **European Directive 94/62/EC** – Packaging and Packaging Waste
- Meets industry standards for synthetic fiber reinforcement for plastic shrinkage crack control in concrete

LEGAL NOTES

All technical data provided in this Product Data Sheet is based on laboratory testing under controlled conditions. Actual field performance may vary due to differences in substrates, application methods, site conditions, and environmental factors. ChemFit makes no warranty of merchantability or fitness for a particular purpose. Users shall conduct their own trials to validate product suitability for the intended application. ChemFit reserves the right to modify product specifications without prior notice. For the most current documentation, request the latest Product Data Sheet and Safety Data Sheet from ChemFit.

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