

CHEMFIT RETAINFLOW SP500

High Range Water Reducing & Retarding Admixture – Dual Action
Superplasticizer for Hot Climates

PRODUCT DESCRIPTION

ChemFit RetainFlow SP500 is a dual action high-range water-reducing and retarding superplasticizer specifically formulated for hot climate concreting. It provides exceptional slump retention while delaying initial and final set, allowing ample time for transport and placement in high-temperature conditions. This advanced admixture ensures free-flowing concrete without compromising strength development or durability.

PRIMARY APPLICATIONS

ChemFit RetainFlow SP500 is recommended for use in conditions such as:

- Hot climate concreting (temperatures above 30°C)
- Ready-mix concrete (RMC) with long transport distances in hot weather
- Mass concrete pours to prevent cold joints
- Large foundation and slab placements in summer conditions
- Precast concrete requiring extended workability
- Self-consolidating concrete (SCC) in hot environments
- Concrete pumped to extreme heights or over long distances
- Sites with difficult or slow placing conditions in high temperatures

KEY FEATURES AND BENEFITS

- **Dual action** – Combines high-range water reduction with extended set retardation
- **Exceptional slump retention** – Maintains workability for 90–120 minutes in hot climates
- **High water reduction (25-35%)** – Achieves high early and ultimate strengths
- **Ideal for hot weather** – Prevents rapid slump loss and flash setting
- **Prolonged set retardation** – Delays setting time for long-distance transport in high temperatures
- **Free-flowing concrete** – Reduces or eliminates vibration requirements
- **Chloride-free** – Safe for reinforced and prestressed concrete
- **ASTM C494 Type G compliant** – Meets international standards
- **Liquid form** – Easy to dispense and batch accurately
- **Improved finish** – Produces dense, cohesive concrete with reduced bleeding and segregation

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Liquid
Color	Light amber to straw-colored
Specific Gravity	1.07 – 1.11 at 25°C
pH Value	6.0 – 8.0
Chloride Content	Nil ($\leq 0.1\%$) – Non-corrosive to rebar
Alkali Content	< 1.5%
Freezing Point	0°C
Water Reduction	25 – 35%
Slump Retention	90 – 120 minutes (depends on dosage & temperature)
Set Retardation (Initial)	90 – 240 minutes vs. plain concrete @ 35°C

PACKAGING AND STORAGE

Packaging:

- 200 L drums
- 1000 L IBCs (Intermediate Bulk Containers)

Storage:

- Store in original sealed containers at +5°C to +40°C
- Protect from direct sunlight, frost, and extreme heat
- If frozen, slowly thaw and agitate before use (do not use direct heat)

Shelf life: 12 months from date of manufacture

DOSAGE AND COVERAGE RATES

The recommended dosage of ChemFit RetainFlow SP500 is **0.8% to 2.5% by weight of cementitious material**.

Low dosage (0.8% – 1.2%): Provides standard high-range water reduction with moderate set retardation and good slump retention for mild hot weather

Medium dosage (1.2% – 1.8%): Delivers high-range water reduction with extended slump retention for hot climates and longer transport

High dosage (1.8% – 2.5%): Produces maximum fluidity with significant set retardation and prolonged slump retention for extreme hot weather (above 40°C) and very long transport distances

Per 50 kg cement bag: Dosage ranges from 0.40 to 1.25 kg (approximately 350 to 1,100 ml) per bag

Yield per 200 L drum: Approximately 320 to 1,000 bags of cement (16 to 50 tons of cement), based on 1.0% dosage

Yield per 1000 L IBC: Approximately 1,600 to 5,000 bags of cement (80 to 250 tons of cement), based on 1.0% dosage

NOTE: Concrete trial mixes shall be carried out to confirm optimal dosage for specific project requirements, as coverage varies with total cementitious content including fly ash, slag, and silica fume. For ambient temperatures exceeding 40°C or transport times exceeding 2 hours, higher dosages (1.8% – 2.5%) are strongly recommended.

APPLICATION GUIDELINES

ChemFit RetainFlow SP500 should be added directly to the mixing water or to the wet concrete after 70% of the mixing water has been added. The concrete should be mixed for a minimum of 2 to 3 minutes to ensure uniform dispersion of the admixture. This product is compatible with all standard Portland cements, blended cements, and most supplementary cementitious materials such as slag, fly ash, and silica fume. Do not pre-mix **ChemFit RetainFlow SP500** with other admixtures (including air entrainers, retarders, or accelerators) in concentrated form; add them separately to the mix, avoiding contact at the same point. If overdosed, significant set retardation and delayed strength gain may occur, and the concrete should be kept moist during the extended setting period. For best results, add this admixture after other admixtures.

For hot climates with ambient temperatures above 35°C, higher dosages in the range of 1.5% to 2.5% are recommended to maintain adequate workability and prevent flash setting.

HEALTH AND SAFETY

ChemFit RetainFlow SP500 is not classified as hazardous under normal use. However, it may cause mild eye irritation, so if eye contact occurs, rinse thoroughly with water for 15 minutes. For skin contact, wash with soap and water. If swallowed, do not induce vomiting; instead rinse the mouth and drink water, then seek medical advice. Use nitrile gloves and goggles during handling. 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.

APPROVALS AND STANDARDS

ChemFit RetainFlow SP500 conforms to the following standards:

- **ASTM C494 / C494M – Type G (High Range Water Reducing & Retarding Admixture)**

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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