

FUERZA RSP-5000

HIGH RANGE WATER REDUCING SUPER PLASTICIZER/RETARDER

FUERZA RSP-5000 is a **chloride-free, high-range water-reducing admixture** formulated from specially processed **sugar-reduced lignosulphonate polymers**. Supplied as a homogeneous dark brown liquid, it disperses readily in the mixing water to provide rapid and uniform distribution throughout the concrete matrix.

The admixture functions by **adsorbing onto cement particles and imparting electrostatic repulsive forces**, effectively deflocculating cement agglomerates and promoting superior particle dispersion. This mechanism enhances the efficiency of the mixing water, significantly improving the rheological properties and workability of fresh concrete without increasing water demand. Consequently, FUERZA RSP-5000 enables substantial reductions in the **water-to-cement ratio**, resulting in increased compressive strength, reduced permeability, enhanced durability, and improved overall concrete performance. The synergistic action of its **plasticizing and dispersing agents** ensures a homogeneous concrete mix with excellent placing characteristics, superior compaction, and long-term structural integrity.

TYPICAL APPLICATIONS & ADVANTAGES

- Specifically formulated for **ready-mix concrete** requiring extended workability retention and controlled initial setting characteristics.
- Significantly reduces the **water-to-cement ratio**, resulting in improved compressive strength at both early and ultimate curing ages.
- Produces **dense, low-permeability concrete**, enhancing long-term durability and resistance to water and aggressive environmental agents.
- Improves concrete workability and slump retention, making it particularly suitable for **hot weather concreting** and extended transportation times.
- **Chloride-free and non-corrosive**, making it suitable for use in **reinforced, prestressed, and post-tensioned concrete** without promoting steel corrosion.
- Increases workability and ease of placement **without the addition of extra mixing water**, ensuring consistent concrete quality and optimized mechanical performance.

STANDARDS COMPLIANCE

FUERZA RSP-5000 complies with the requirements of **ASTM C494 Type G** for **high-range water-reducing and retarding concrete admixtures**

TECHNICAL INFORMATION

Supply form:	Liquid
Specific gravity:	1.15 at 25±2°C
Chloride contents:	Nil
Color:	Dark brown
Toxicity:	Non-toxic

USES

- Improves the efficiency of the mixing water, enhancing the workability and consistency of fresh concrete.
- Enables significant reduction in concrete permeability, thereby increasing durability and resistance to water penetration.
- Particularly suitable for **hot weather concreting**, where improved workability retention and placement characteristics are required.

COMPATIBILITY

FUERZA RSP-5000 is compatible with **all types of Portland cement**. For applications involving **specialty or blended cement systems**, compatibility testing or consultation with the technical department is recommended prior to use.

SETTING CHARACTERISTICS

FUERZA RSP-5000 provides **controlled retardation of the initial setting time**, enhancing workability retention during concrete placement. The degree of set retardation is influenced by the **cement type, mix composition, and prevailing ambient temperature**.

RECOMMENDED DOSAGE

The optimum dosage of **FUERZA RSP-5000** should be established through **site trials** using the actual constituent materials and anticipated project conditions. The recommended dosage ranges from **0.4 to 1.5 L per 100 kg of cementitious material**, depending on the desired concrete performance. Dosages outside this range may be used for specialized applications, subject to appropriate mix design evaluation and performance testing.

EFFECTS OF OVERDOSAGE

- Excessive dosage may result in **extended initial and final setting times**.
- May cause a **slight increase in entrained air content** within the concrete mix.
- Produces **higher workability and enhanced slump retention**.
- When properly cured, the **ultimate compressive strength is generally maintained or improved**, despite the delayed setting characteristics.
- The retarding effect becomes **more pronounced when used with sulphate-resistant cement (SRC)**.

PACKAGING, STORAGE & SHELF LIFE

FUERZA RSP-5000 is supplied in **210 L industrial drums** and is also available in **bulk quantities** for direct transfer into on-site storage tanks. The product has a **shelf life of 12 months** when stored in its original, unopened containers under **cool, dry conditions**, protected from direct sunlight and excessive heat.

HEALTH & SAFETY

FUERZA RSP-5000 is **not classified as a hazardous material** under current regulations; however, standard industrial safety practices should be observed during handling. Avoid contact with **skin and eyes**, and do not ingest the product. Wear appropriate **protective gloves and safety goggles** during application. In case of skin contact, wash thoroughly with clean water. If the product comes into contact with the eyes, rinse immediately with plenty of water and seek medical attention. If swallowed, obtain immediate medical assistance and **do not induce vomiting**. For detailed handling and safety information, refer to the **Material Safety Data sheet**.

