

FUERZA RSP-4000

HIGH RANGE WATER REDUCING SUPER PLASTICIZER FOR HIGH STRENGTH CONCRETE

FUERZA RSP-4000 is a **high-range water-reducing superplasticizer** formulated to significantly reduce the required **mixing water content** while enhancing **concrete workability and mechanical strength** without increasing the cement dosage.

APPLICATIONS

- Enhances **concrete workability** at a constant water-to-cement ratio, facilitating improved placement and producing higher-quality concrete.
- Enables approximately **5–12% reduction in mixing water** while maintaining workability and improving the mechanical strength of hardened concrete.
- Reduces the potential for **bleeding and segregation**, promoting a more homogeneous and stable concrete matrix.
- Permits **cement optimization** while maintaining comparable strength performance, contributing to reduced material consumption and overall construction cost.

FUNCTION

FUERZA RSP-4000 acts as a **high-range water-reducing admixture**, enabling a substantial reduction in the **water-to-cementitious materials ratio** while maintaining the required rheological characteristics and workability of the concrete mix. By optimizing water demand, it minimizes **capillary porosity, entrapped voids, bleeding, segregation, drying shrinkage, and permeability**, thereby producing a denser and more homogeneous cementitious matrix.

The resulting **low-permeability concrete** exhibits enhanced particle packing, improved compaction, and increased resistance to **water and aggressive-agent ingress**, contributing to superior **mechanical strength, dimensional stability, and long-term durability**.

SPECIFICATION COMPLIANCE

FUERZA RSP-4000 conforms to the requirements of **ASTM C494 Types B, D, and G**, as well as **BS 934-2**, for chemical concrete admixtures.

TECHNICAL INFORMATION

Supply form:	Liquid
Specific gravity:	1.18
Chloride contents:	Nil to BS 934-2
Color:	Dark brown
Flash point:	Nil
Air entrainment:	1-2%

ADVANTAGES

- **Enhanced Strength Development:** Delivers approximately **15–30% higher compressive strength** across all curing ages.
- **Improved Mix Stability:** Minimizes the risk of **bleeding and segregation** during placement.
- **Low-Permeability Concrete:** Promotes the formation of **dense, compact, and impermeable concrete**.
- **Enhanced Workability & Watertightness:** Improves **fresh-state workability** while increasing the **water-tightness and durability** of the hardened concrete.

COMPATIBILITY

FUERZA RSP-4000 is compatible with **all Portland cement types**, including **sulphate-resisting cement**, without producing detrimental effects on **reinforcing or prestressing steel**. It is particularly effective in concrete incorporating **supplementary cementitious materials (SCMs)** such as **fly ash, silica fume, and ground granulated slag**.

FUERZA RSP-4000 may be introduced into the concrete mix through the **mixing water or other concrete constituents**, except cement, with addition through the mixing water being preferred. It is compatible with other chemical admixtures; however, **each admixture should be dosed separately** to prevent premature interaction and ensure uniform dispersion throughout the mix.

METHOD OF USE

FUERZA RSP-4000 may be introduced directly into the concrete mix **concurrently with the gauging water**. The total mixing-water content should then be **adjusted downward as required** to achieve the specified consistency and target workability.

EFFECTS OF OVERDOSAGE

Excessive dosage of **FUERZA RSP-4000** may result in:

- **Retardation of initial setting time.**
- Increased **air entrainment** within the concrete matrix.
- Excessive **workability and fluidity** of the fresh concrete mix.

RECOMMENDED DOSAGE

The recommended dosage of **FUERZA RSP-4000** is **400–650 mL per 50 kg bag of cement**. The optimum dosage should be established through **site trials** based on the required workability and performance parameters. Accurate **dosage measurement and controlled dispensing** are essential to ensure consistent concrete properties.

PACKAGING, STORAGE & SHELF LIFE

FUERZA RSP-4000 has a **minimum recommended shelf life of 12 months** from the date of manufacture when stored in its **original, sealed containers** under suitable conditions. It is supplied in **210-litre drums and bulk quantities**.

HEALTH & SAFETY

FUERZA RSP-4000 is **non-flammable and presents no significant health hazard under normal handling conditions**. In case of spillage, wash the affected area promptly with **clean water**. Wear appropriate **protective goggles and chemical-resistant rubber gloves** during handling and application.

