

MasterCem ES 2121

Cement additive engineered for enhancement of cement early strength and reduction of unit grinding energy / increase of cement mill throughput.

DESCRIPTION OF PRODUCT

MasterCem ES 2121 is a liquid, ready-to-use cement additive designed to enhance cement performance. In addition to acting as a Grinding Aid in the milling process and a flow aid in cement conveyance, **MasterCem ES 2121** improves specific cement properties by the activity of its chemical components. These act in the modification of clinker characteristics and in the enhancement of its hydraulic properties.

Products of the **MasterCem ES 2000** series are specifically designed to increase early strength of cement. These benefits can be used either for achieving superior product performance or for cement optimization while maintaining the original performance level. Typical early strength improvement is +10-25% at 1-2 days vs. plain control. However, product performance is dependent on grinding equipment characteristics, process conditions, raw material properties and cement type. To best benefit from cement additives, mill and separator process parameters may need to be adapted.

MasterCem ES 2121 improves the flow characteristics of cement with positive impact on cement conveyance and reduction of pack-set in storage silos.

FIELDS OF APPLICATION

MasterCem ES 32121 is developed for application in the cement grinding process in:

- Ball mills (closed and open circuits)
- Vertical mills
- Other cement grinding systems

TECHNICAL DATA

Appearance	Reddish brown liquid
Density @ 25°C	1.20 – 1.26 g/cm ³
pH-value @ 20°C	6.5 – 8.5

FEATURES AND BENEFITS

MasterCem ES 2121 offers the following benefits to cement production:

- **Cost reduction** due to lower unit grinding energy (kWh/t) and optimization of cement fineness and composition while maintaining cement properties.
- **Capacity extension** due to higher mill throughput and optimized cement recipe.
- **Sustainability** due to reduced Clinker Factor and specific CO₂ emissions. Gain of carbon credits.
- **Product differentiation** due to enhanced product performance and improved cement properties for the final application.
- **Improved cement handling** due to faster cement conveyance through the plant and in the distribution logistics. Reduction of plant stops and optimized storage in silos.

DOSING

MasterCem ES 2121 can be metered onto the mill feed or injected into the mill. The recommended dosage rate is between 200 and 400 g per ton of cement (0.02-0.04% mass). Other dosages may be required in specific situations. The optimum dosage should be evaluated in plant trials. For further questions please consult our Technical Service.

Calibrated dosing equipment with an adjustable flow rate and appropriate dosage range is recommended to obtain the maximum performance of the product.

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COMPATIBILITY

MasterCem ES 2121 is compatible with all types of cements.

STANDARDS

MasterCem ES 2121 fulfils the European cement standard EN 197.1.

PACKAGING

MasterCem ES 2121 is available in bulk and 1000 ltr. containers (IBC)

STORAGE

It is recommended to store **MasterCem ES 2121** at temperatures above 5°C and protect it from freezing; pipes should be thermally isolated. At low temperature the viscosity of the liquid additive will increase. If phase separation occurs at low temperature, the product must be re-mixed before use. If stored in unopened containers according to manufacturer's instructions. The shelf life is a minimum of 12 months.

HANDLING AND TRANSPORTATION

MasterCem ES 2121 is labelled as irritant in accordance with EC Directives, therefore the required handling rules and personal precautions must be applied. It is not classified as a dangerous good under transport regulations. Spillages can be absorbed with suitable materials. Please refer to the Materials Safety Data Sheet for more detailed information.

TECHNICAL SERVICE

Master Builders Solutions assists customers in all phases of cement additives implementation in cement manufacturing. This starts with the assessment of the customer's needs and the technical limitations, continues with lab and field grinding trials, and ends with a comprehensive performance evaluation of the added value of cement additives.

SAFETY PRECAUTIONS

MasterCem ES 2121 is not a fire or health hazard. Spillages should be washed down immediately with cold water.

For further information, refer to the material safety data sheet.

NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information, contact your local Master Builders Solutions representative.

Master Builders Solutions reserves the right to have the true cause of any difficulty determined by accepted test methods.

QUALITY STATEMENT

All products manufactured by Master Builders Solutions Egypt, or imported from Master Builders Solutions affiliate companies world-wide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 standards.

* Properties listed are based on laboratory controlled tests.

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2121 _ 02_16**

