

MasterCem[®] ES 2156

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

DESCRIPTION

MasterCem ES 2156 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 2156** 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 2156 improves the flow characteristics of cement with positive impact on cement conveyance and reduction of pack-set in storage.

TYPICAL APPLICATIONS

MasterCem ES 2156 is developed for application in the cement grinding process in:

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

ADVANTAGES

MasterCem ES 2156 offers the following benefits to cement producers:

- **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 cement performance and improved 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. Very low dust generation during application and therefore a good working environment.

PACKAGING

MasterCem ES 2156 is available in bulk and 1200kg containers (IBC).

STANDARDS

MasterCem ES 2156 fulfils the European cement standard EN 197.1.

TYPICAL PROPERTIES*

Colour	Brown yellowish liquid
Density at 20°C	1.210 – 1.27 g/cm ³
pH value	5-7
Chloride ion content	< 12%

APPLICATION GUIDELINES

MasterCem ES 2156 can be metered onto the mill feed or injected into the mill. The recommended dosage rate is 0.3-0.6 kg per 1000 kg of cement. 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.

MIXING

MasterCem ES 2156 is compatible with all types of cements.

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STORAGE AND SHELF LIFE

It is recommended to store **MasterCem ES 2156** at temperatures above 5°C. Pipes should be thermally isolated. If stored in unopened containers according to manufacturer's instructions, the shelf life is a minimum of 12 months.

HEALTH AND SAFETY

Refer to **MasterCem ES 2156** Safety Data Sheet. In any case it is recommended to apply the general rules for handling of chemical products (e.g. use of gloves and goggles).

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory controlled tests.

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STATEMENT OF RESPONSIBILITY

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NOTE

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