

# MasterCem<sup>®</sup> ES 2316

High Performance Early Strength Enhancer for Cements

## DESCRIPTION

**MasterCem ES 2316** is a highly effective early strength enhancer and formulated with high end raw materials to guarantee superior performance of the product.

**MasterCem ES2316** is an aqueous modified alkanolamine mixture.

**MasterCem ES 2316** is compatible with all types of cement. It complies with ASTM C465-99 as a non-harmful processing additive and EN197-100.

## FIELDS OF APPLICATION

- Ordinary Portland cement.
- Blended cement with limestone, fly ash or slag.

The special characteristics of **MasterCem ES 2316** effectively activate the hydration process between cement particles and the non-reactive or reactive fillers.

For additional information on **MasterCem ES 2316** and its use in developing special performance characteristics, contact your local BASF Construction Chemicals Sales field representative.

## FEATURES AND BENEFITS

**MasterCem ES 2316** considerably increases cement early strength better than conventional grinding aids or early strength enhancer. It is very effective as the catalyst for the early hydration of the cement particles and improving the reaction between C<sub>3</sub>A and gypsum to produce C<sub>3</sub>A-hydration products which overall improves the early strength of cement.

**MasterCem ES 2316** also performs as a cement grinding aid. These characteristics contribute to the following:

- Increased cement mill output at the same cement fineness between 6% and 15%.
- Reduced total cement production by reducing grinding costs per ton of cement and replacing clinker with other fillers.
- Increased early strength of cement between 15% and 30%.
- Improved cement dry flowability.

## APPLICATION

### Dispensing

**MasterCem ES 2316** can be added at the clinker feed conveyer belt or directly into the cement mill's first compartment. A proper dosing pump is required to ensure the correct dosage into the cement for obtaining the optimum performance. Our technical supports are available to provide assistance in the use of **MasterCem ES 2316** with the manual, automatic or computerized dispensing system.

## DOSAGE

The typical dosage rate for **MasterCem ES 2316** is as per the table below:

Type of Cement	Dosage Rate (gram/ton cement)
Ordinary Portland	800 – 2000
Other Hydraulic cements	800 – 2000

The strength development of cement is influenced by the chemical and physical composition of the basic ingredients of the cement, grinding process parameters and clinker characteristics. Plant trial or laboratory scale ball mill test is recommended to determine the optimum dosage required to achieve specific requirements.

Higher dosage might be needed for higher percentage of clinker replacement or less reactive cement.

## PACKAGING

**MasterCem ES 2316** is supplied in bulk delivery and 205L sealed drums.

## SHELF LIFE

**MasterCem ES 2316** can be stored for 12 months if stored at temperatures above 5°C, in tightly sealed original packaging. If found to be frozen, thaw it at 20°C and reconstitute by stirring.

# MasterCem<sup>®</sup> ES 2316

---

## PRECAUTIONS

**MasterCem ES 2316** is not a fire or health hazard. Spillages should be washed down immediately with cold water.

For detailed health, safety and environmental recommendations, please consult and follow all instructions in the product Material Safety Data Sheet.

® = registered trademark of MBCC Group member in many countries of the world

**MasterCem\_ES\_2316 asean v1-1016**

---

### STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this MBCC Group publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

---

### NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by MBCC Group either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not MBCC Group, are responsible for carrying out procedures appropriate to a specific application.

---

**Master Builders Solutions Malaysia Sdn Bhd**  
No. 8, Jalan Keluli 2, Kawasan Perindustrian Bukit Raja,  
41050 Klang, Selangor, Malaysia.  
Tel : +603 3082 1000

[www.master-builders-solutions.com/en-asiapacific](http://www.master-builders-solutions.com/en-asiapacific)