



Asia Masters Center

Blended Cement & Optimization of Grinding Processes



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Blended Cement & Optimization of Grinding Processes

➔ Course Overview

This course has been developed to provide operators and process engineer's depth understanding about blended cement, the different types of additives, blended cement performance and benefits. This course has been developed to Having a skilled team plays a key role in the optimal utilization of the grinding in the cement plant. The operators and process engineers must be able to evaluate all the process variables in order to optimize the production economy. This course provides an in depth understanding of grinding theory and equipment and gives you the tools to audit your own process. The purpose of the course is to give operators and process engineers tools to optimize the output of an existing grinding mill.

➔ Course Objective

After completing this course participants will be able to:

- Full understanding of the blended cement, additives materials and the performance of the different types of blended cement.
- Full understanding of the equipment and grinding theory.
- Proper process control.
- Optimize any existing grinding.
- Understanding of the plant power consumption.
- Boost the production rate.
- Become familiar with all types of Mills.
- Become familiar with Separators and Separation cycle and fineness or Blaine control.

➔ Target Audience

- People working in the Cement production and process control Engineers, Production supervisors, and Production technicians.

➔ Course Outline

Day one

Module (01) *Blended Cement*

- 1.1 Nature of addition of materials.
- 1.2 Properties of blended cement.
- 1.3 Selection of additions.
- 1.4 Influence of clinker / cement chemistry.
- 1.5 Long term performance of blended cements.

Module (02) *Performance and Customer Needs of Blended Cement.*

- 2.1 Limestone filled cements.
- 2.2 Blast furnace slag cements.
- 2.3 Fly ash and Pozolana cements.
- 1- Fly Ash containing Cements
- 2- Phoenix pulverized fuel-ash cements.
- 3- Pozolana containing Cements.
- 2.4 Influence of clinker / cement chemistry.
- 2.5 Customer needs of composite cements.

Day Two

Module (03) *Introduction to Principles of Material Grinding and Breakage.* Types of mill

- 3.1 Impact and Attrition in a Ball Mill.
- 3.2 Compression in a Roller Mill.



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- 3.3 Raw mill operation Milling requirements and What must the system achieve.
- 3.4 Milling system and mill circuits.
- 3.5 Mill operational features and process limitations.

Module (04) Ball Mill (Description, Liners, Diaphragm, Grinding Media, Water Injection)

- 4.1 cement mill mechanical components from inside and outside.
- 4.2 Internal Liners types and functions.
- 4.3 Mill Diaphragms.
- 4.4 Grinding media size and distribution.
- 4.5 Milling temperature and Water injection system and function.
- 4.6 Design and function of HLPC lubrication unit, Slide Shoe bearing.
- 4.7 Mill Operation and Process Control.

Day Three

Module (05) Vertical Roller mills.

- 5.1 Mechanical Design.
- 5.2 Process Design.
- 5.3 Performance testing.
- 5.4 Mill Operation and Process Control.
- 5.5 Types of Mill Feeders.
- 5.6 Dossimat, Dosax and rotary feeder main parts, its functions and how its work.
- 3.7 The Magnetic separator and the Metal Detector, There parts and how its work.

Module (06) Classifier Operation and Control

- 6.1 The needs to separation.
- 6.2 Separation principle.
- 6.3 Separator types and their mode of operation.
- 6.4 Separator efficiency and particle size distribution.



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- 6.5 Separator mechanical design and function.
- 6.6 Mill Hydraulic (Accumulator).
- 6.7 Roller Lubrication and Gear Lubrication.

Day Four

Module (07) BALL MILL TESTING.

- 7.1 Monitoring mill performance.
- 7.2 Axial sampling test.
- 7.3 Axial sample for A cement Mill practical example.
- 7.4 Mill inspection and maintenance
- 7.5 Fine media In cement mill.

Module (8) General guide line to optimise performance of cement mills.

- 8.1 Mill testing / routine inspection.
- 8.2 Mill configuration – chamber lengths.
- 8.3 Mill liner plate design.
 - - First Chamber Liner Design.
 - - Second Chamber Liner Design.
- 8.4 Media grading.
 - - Chamber 1 Media
 - - Chamber 2 Media
- 8.5 Diaphragm design.
- 8.6 Mill ventilation.
- 8.7 Mill power drawn, Mill critical speed and media load.
- 8.8 Guide lines for Mill first chamber power consumption.
- 8.9 Closed circuit Mill optimisation.

Day Five

Module (9) General guide line to optimise performance of vertical cement mill.

- 9.1 Monitoring mill performance.
- 9.2 Mill inspection and maintenance.



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➤ **The Feature Of Asia Master Training And Development Center**

- we pick up the customer from the airport to the hotel.
- we give the participant training bag includes all the necessary tools for the course.
- Working within groups to achieve the best results.
- All our courses are confirmed and we do not postpone or cancel the courses regardless of the number of participants in the course.
- We can assist you in booking hotels at discounted prices if you wish to book through us.
- We offer the certificate from Asia Masters Center for Training and Administrative Development.

➔ **The Cost Of The Training Program Includes The Following:**

- 1) Scientific article on flash memory.
- 2) Training Room.
- 3) Training.
- 4) Coffee break.
- 5) The training bag includes all the tools for the course.



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Price (USD)

Communicate with the training department
to know the participation fees

➤ **There are offers and discounts for groups**

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