



# ME068: Ball Mill Operations and Maintenance

## Training Description:

In this intensive training course focused on best practices for operations and maintenance (preventive and reactive), participants will learn on how to optimize, achieve energy savings, reduced maintenance costs and overall improved productivity of the ball mill systems.

Ball mills are used for many applications in cement production: raw meal grinding, coal and petcoke grinding as well as finish cement grinding. Each of these systems have their similarities and differences.

This ball mill training course is designed to train each participant on the overall technology, operation and maintenance of the ball mill cement grinding system.

The training course focuses on the latest best practices for the operation and maintenance of ball mill systems to allow for optimal cement production, energy savings, reduced maintenance costs as well as the continuous improvement of the overall equipment operation.

Maintenance training course is focused on routine preventive maintenance to minimize downtime in ball mill systems, as well as developing preventive maintenance programmes and troubleshooting techniques to quickly identify and fix problems.

Beyond what participants will learn about the ball mill systems, this training course provides excellent networking opportunities with our training instructor as well as your counterparts from the cement industry.

## Training Objectives:

**By the end of the training, participants will be able to:**

- ✓ How to troubleshoot ball mills to quickly identify and fix problems
- ✓ How to plan and carry out routine preventive maintenance to minimize downtime
- ✓ Optimization ideas to improve ball mill productivity and cement production
- ✓ Identify possible system upgrades and modernization options to improve operations
- ✓ Improved synergy in between the production, quality and maintenance departments for better communications and cooperation

## Training Designed for:

This course is intended for Process engineers, Plant engineers, Maintenance engineers, Operators and Shift engineers.

## Training Requirement:

**“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”**

**Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.**

## Training Program:

### DAY ONE:

#### Operational View

- ❖ Cement ball mill types
- ❖ Design, operating principles and fundamentals of ball mills
- ❖ Mill ventilation and gas handling in milling systems
- ❖ Ball mills, internal installations and grinding media charges
- ❖ Calculation of power consumption
- ❖ Optimal load charges and sizing

### DAY TWO:

- ❖ Automatic process control for cement mill systems
- ❖ Separators, types and their mode of operation
- ❖ Calculations for separator efficiency
- ❖ Maintenance of grinding media charges in relation to wear
- ❖ Cooling and grinding aids
- ❖ General measurements and calculations for determination of gas and airflows
- ❖ Optimization of mill grinding system

### DAY THREE:

- ❖ Mill expert control for ball mill
- ❖ Sampling and sample preparation for clinker and cement

#### Maintenance Aspect

- ❖ Design features of ball mills
- ❖ Safety issues
- ❖ Maintenance of mill body
- ❖ Maintenance of mill supports

### DAY FOUR:

- ❖ Maintenance of main and auxiliary mill drives
- ❖ Wear parts and wear analysis
- ❖ Mill and mill drive alignment
- ❖ Main and auxiliary drives inspection
- ❖ Shell and head liner measurement
- ❖ Lubrication and jacking systems

### DAY FIVE:

- ❖ Measurement and types of journal bearings
- ❖ Separator, types, maintenance and repairs
- ❖ Ball mills, internal installations and grinding media charges in relation to wear
- ❖ Dust collector maintenance and operation
- ❖ Alignment of the mill
- ❖ Course Conclusion
- ❖ POST-ASSESSMENT and EVALUATION

## Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

## Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

## Training Fees:

**TBA as per the course location** - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01<sup>st</sup> of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

## Training Timings:

### Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

### For training registrations or in-house enquiries, please contact:

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