



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 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
- ❖ Final Examination and EVALUATION

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.”

This training course is available upon request in English or Arabic. Content, location and duration 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 Certificate(s):

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





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, Software & General Discussions
- Pre and Post Test

Training Timings:

As per the client's instruction (agreed daily timing)

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

aisha@cmc-me.com / training@cmc-me.com

Tel.: +971 2 665 3945 / 643 6653 | Mob.: +971 52 2954615

Training & Career Development Department

