

REFRACTORY DESIGN, INSTALLATION, INSPECTION AND REPAIR TRAINING

“Enhance the safety, performance, and lifespan of high-temperature industrial systems with expert refractory solutions.”

Schedule

| Venue (InHouse) | Fees |
|-------------------------------|-----------------------|
| At Your Organization Premises | Ask For The Quotation |

► **Available delivery methods:** In-House Training

Introduction

This training provides in-depth knowledge and practical expertise in the design, installation, inspection, and repair of refractory systems used in high-temperature industrial applications. Refractories are critical to the safety and efficiency of furnaces, kilns, reactors, and other thermal equipment. The course covers the properties of refractory materials, engineering design principles, installation best practices, and maintenance strategies to extend service life and reduce operational downtime.

Objectives

- Understand the fundamentals of refractory materials and their classifications
- Learn proper design principles for different industrial applications
- Gain hands-on knowledge of various refractory installation techniques
- Identify common refractory failures and their root causes
- Develop inspection and testing protocols for refractory integrity
- Apply repair and maintenance techniques for different refractory systems
- Ensure compliance with industry standards and safety practices
- Explore innovations and trends in refractory technology

Why Attend

Industries such as petrochemical, steel, cement, glass, and power rely heavily on high-performing refractory linings. This course provides critical skills needed to optimize refractory design, extend equipment life, reduce unplanned shutdowns, and ensure operational safety in high-temperature environments.

Target Audience

- Mechanical and process engineers
- Maintenance and reliability engineers
- Refractory installers and supervisors
- Plant engineers and technical staff
- Quality assurance and inspection personnel
- Project and construction managers
- Safety officers in high-temperature industries

Individual Benefits

- Strengthen your technical understanding of refractory systems
- Gain hands-on knowledge of installation and inspection techniques
- Enhance problem-solving skills for refractory failure and repair
- Improve safety awareness in thermal equipment handling
- Increase employability in process-intensive industries

Organizational Benefits

- Improve equipment performance and energy efficiency
- Minimize refractory-related downtime and failures
- Reduce maintenance and operational costs
- Ensure regulatory compliance and workplace safety
- Build internal capability for refractory system management

Instructional Methodology

- Classroom-style presentations with technical visuals
- Real-life case studies and failure analysis
- Demonstrations of installation and inspection tools
- Group discussions and scenario-based learning
- Practical exercises and quizzes
- Interactive Q&A sessions

Course Outline

1. Introduction to Refractory Systems and Applications
2. Classification and Properties of Refractory Materials
3. Refractory Design Principles for Furnaces, Kilns, and Reactors
4. Material Selection Criteria and Compatibility
5. Installation Techniques: Casting, Gunning, Ramming, Bricking
6. Common Installation Challenges and Best Practices
7. Inspection Methods: Visual, Thermographic, Ultrasonic, and More
8. Failure Modes and Root Cause Analysis
9. Repair Methods and Emergency Maintenance Procedures
10. Refractory Standards and Safety Guidelines (API, ASTM, ISO)
11. Refractory Performance Monitoring and Life-Cycle Management
12. Emerging Technologies in Refractory Engineering
13. Final Review and Assessment

Certification

Upon successful completion, participants will receive a Certificate of Achievement in Refractory Design, Installation, Inspection and Repair, recognizing their competency in managing refractory systems in high-temperature industrial environments.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation's unique goals.

In-House / Customized Training

Interested in running this course for your team?

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