MERCURY

Refractory Applications, Inspection, and Maintenance Course

24 – 28 October 2027
Sharm El-Sheikh (Egypt)

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
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Refractory Applications, Inspection, and Maintenance Course

Ref: 9242_291962 **Date:** 24 – 28 October 2027 **Location:** Sharm El-Sheikh (Egypt) **Fees:** 5500 Euro

Introduction:

Refractory applications, inspection, and maintenance are critical for the successful and reliable operation of many high-temperature industrial processes. They are often a significant cost item in general maintenance terms due to the unscheduled downtime of production units arising from premature material failure. Technical professionals involved in these processes continuously need to be well-informed about new technologies related to refractory materials and their physical and technical characteristics.

This refractory applications, inspection, and maintenance course is designed to provide a detailed discussion of refractory technology related to different industries' high-temperature requirements. The refractory training will focus on the practical aspects of refractory evaluation, selection, installation, maintenance, and repair techniques in many industrial applications.

Targeted Groups:

- Professionals involved in refractory application.
- Professionals involved in refractory production.
- Refractory Engineers.
- Refractory Supervisors.
- Maintenance Engineers.

Course Objectives:

At the end of this refractory applications, inspection, and maintenance course, the participants will be able to:

- Explain the characteristics of different types of industrial refractories
- Understand refractory properties: mechanical, thermal, and chemical
- Implement the most appropriate installation techniques
- Understand issues related to their quality and reliability
- Analyze results of inspection and testing

Targeted Competencies:

At the end of this refractory applications, inspection, and maintenance course, the participant's competencies will be able to:

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- Designing characteristics of refractories: Thermal, Mechanical, and Chemical.
- Methods of testing refractories.
- Efficient installation of refractories for various applications.
- Root cause analysis of failures encountered in the operation.
- Guidelines for inspection, maintenance, and repair of refractories.

Refractory Applications, Inspection, and Maintenance:

The refractory applications, inspection, and maintenance course provides comprehensive training on all refractory materials and their use in industrial settings. This specialized refractory course covers advanced refractory applications, refractory testing and inspection techniques, and best practices for maintenance and inspection.

Participants in this refractory training course will gain a deep understanding of refractory materials and their application procedures. The curriculum includes hands-on learning experiences and theoretical knowledge necessary for effective refractory maintenance.

This refractory applications, inspection, and maintenance training will cover refractory maintenance corporation standards and the latest methods for inspecting and maintaining refractory linings.

Whether new to refractory work or seeking to enhance your skills, this course equips you with the expertise needed to excel in refractory applications, ensuring optimal performance and longevity of refractory installations in industrial environments.

Course Content:

Unit 1: Overview of Refractories:

- Refractories and Their Role in Modern Industry.
- Categories of Refractories.
- Refractory Standards Developed By ASTM.
- Refractories Based on Chemical Composition Basic, High Alumina, Silica.
- Refractories Based on Physical Form Bricks and Shapes.
- Refractories Based on Manufacturing Technologies.

Unit 2: Manufacturing Technologies:

- Significance of Raw Material Selection.
- Manufacturing Process of Preformed Refractories Bricks and Shapes.
- Manufacturing of Unformed Monolithics Castables, Mixes, Plastics, Grains.
- Safety Issues During Manufacturing.
- Quality Assurance in Manufacturing.
- Environmental Considerations.

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Unit 3: Technical Properties of Refractories:

- Design Properties: Thermal Refractoriness Mechanical Strength, Spalling.
- Characteristics of Working Refractories: Max. Service Temperature, Temperature Shock.
- Thermal Stability of Refractory Structures Creep and Thermal Expansion.
- Corrosion Resistance to Hot Liquids, Hot Gases, Melted Metals.
- Wear and Attack Mechanisms of Refractory Materials.
- Qualifications for Working Refractory Structures.

Unit 4: Testing and Installation:

- Testing of Refractories: Physical, Chemical, Thermomechanical.
- Guidelines for PCE, RUL, and Other Tests.
- Analysis of Test Results: Crushing Strength and Thermal Stress.
- Installation Technique for Preformed Bricks with Mortar.
- Installation Techniques for Monolithics: Castables, Gunning, Ramming, Spray Cast.

Unit 5: Inspection, Maintenance, Troubleshooting, Repair:

- Inspection of Refractories During Installation and in Operation.
- Preventive Maintenance Checklist.
- Problems in Operation: Typical Failures and Root Causes.
- Troubleshooting Methods.
- Common Repair Techniques.
- Safety and Health Hazards.

Conclusion:

Upon completing the refractory applications, inspection, and maintenance course, participants emerge equipped with a robust skill set in advanced refractory applications, inspections, and maintenance. This refractory training course delves into essential topics such as refractory testing and inspection methods, refining participants' expertise in refractory application procedures.

Participants in this refractory applications, inspection, and maintenance training gain a deep understanding of refractory maintenance practices, adhering to industry standards set by leading refractory maintenance corporations. With refined refractory inspection and testing skills, participants are well-prepared to address the intricacies of refractory installations in industrial settings.

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The refractory applications, inspection, and maintenance course empowers individuals to excel in refractory applications, ensuring optimal performance and longevity of refractory materials in diverse operational environments. Through this training, participants are poised to contribute effectively to refractory maintenance and operations, enhancing productivity and safety within industrial sectors.