MERCURY

Refractory Material Selection and Application Training Course

05 - 09 Jul 2026
Manama (Bahrain)

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

Refractory Material Selection and Application Training Course

Ref.: 15809_328878 **Date:** 05 - 09 Jul 2026 **Location:** Manama (Bahrain) **Fees:** 5500 **Euro**

Introduction:

The Refractory Material Selection and Application training course is designed to equip participants with essential knowledge and skills for selecting the most suitable refractory materials tailored to specific industrial requirements. As industries increasingly rely on high-performance materials to withstand extreme temperatures, corrosion, and mechanical stress, understanding the properties and applications of various refractory materials becomes crucial.

This Refractory Material Selection and Application course provides insights into different refractory materials' thermal, chemical, and physical characteristics. It guides professionals in making informed decisions that optimize performance and enhance safety in industrial processes. By integrating knowledge with practical applications, participants will gain the expertise to assess material options, ensuring their selections meet the unique demands of their operations.

Participants in this Refractory Material Selection and Application training course provide in-depth knowledge on applying refractory materials in various industries, including steelmaking. They will learn the definition of refractory material, its significance, and how to effectively select refractory materials for specific applications.

The Refractory Material Selection and Application course covers refractory applications, the application of refractory materials, and the role of refractory material manufacturers and suppliers. It delves into refractory application in high-temperature environments, such as furnaces and kilns, and provides insights into refractory material selection for steelmaking. Participants will understand what refractory material is and how to choose the right one for different needs.

Targeted Groups:

- Engineers involved in materials selection and application.
- Production managers in manufacturing and processing industries.
- Maintenance personnel responsible for refractory installations.
- Quality control and assurance specialists.
- Research and development professionals focused on material innovation.
- Procurement and supply chain professionals in industrial sectors.
- Technical sales representatives for refractory products.
- Consultants in the construction and industrial sectors.
- Students and professionals seeking knowledge in refractory materials.

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Course Objectives:

At the end of this Refractory Material Selection and Application course, the participants will:

- Identify key properties and types of refractory materials.
- Understand the requirements for refractory materials in different industries.
- Develop skills to evaluate material performance under extreme conditions.
- Learn criteria for selecting optimal refractory materials based on application needs.
- Gain knowledge in installation techniques to enhance material durability.
- Analyze the cost-effectiveness and lifecycle of various refractory materials.
- Apply best practices for maintaining refractory systems and preventing failure.
- Ensure adherence to safety standards and industry regulations.
- Enhance decision-making skills in refractory material procurement and usage.

Targeted Competencies:

By the end of this Refractory Material Selection and Application training, the participant's competencies will:

- Understanding the properties of various refractory materials.
- Analyzing industrial requirements for specific applications.
- Evaluating material performance under extreme conditions.
- Selecting appropriate refractory materials for diverse industries.
- Implementing best practices in refractory installation and maintenance.
- Conducting cost-benefit analyses of refractory material options.
- Ensuring compliance with industry standards and regulations.
- Collaborating effectively with cross-functional teams.
- Troubleshooting common issues related to refractory applications.

Course Content:

Unit 1: Fundamentals of Refractory Materials:

- Overview of refractory materials and their industrial applications.
- Key properties of refractories include thermal resistance, chemical stability, and mechanical strength.
- Classification of refractory materials: acidic, basic, and neutral types.
- Understanding the composition and microstructure of refractory products.
- Common refractory types: fireclay, silica, alumina, and magnesia.
- Factors influencing refractory material performance in high-temperature environments.

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Unit 2: Selection Criteria for Refractory Materials:

- Identifying specific industrial needs for refractory selection.
- Criteria for selecting refractories: temperature, environment, and physical load.
- Compatibility of refractories with various processing conditions.
- Selection process for refractories in industries like steel, cement, and petrochemicals.
- Considerations for refractory longevity, energy efficiency, and sustainability.
- Case studies on successful refractory selection in different applications.

Unit 3: Properties and Testing of Refractory Materials:

- Key performance indicators for refractory materials: thermal conductivity, density, and porosity.
- Overview of standard testing methods for refractories.
- Techniques for measuring mechanical strength, thermal expansion, and wear resistance.
- Methods for assessing chemical resistance and reaction with molten materials.
- Non-destructive testing and inspection methods for refractory performance.
- Regular testing is important to ensure material quality and durability.

Unit 4: Installation and Maintenance Techniques:

- Best practices for installing refractory materials to ensure longevity.
- Methods of installation: castable, brick, and monolithic refractories.
- Techniques for anchoring, jointing, and curing refractory materials.
- Preventive maintenance practices to extend the lifespan of refractories.
- Identification and mitigation of common causes of refractory failure.
- Guidelines for repair and replacement to optimize operational efficiency.

Unit 5: Safety, Compliance, and Cost-Effectiveness in Refractory Applications:

- Overview of safety standards and regulations in refractory use.
- Ensuring material compliance with industrial and environmental standards.
- Cost analysis of refractory materials and the impact of lifecycle costs.
- Strategies for reducing energy costs through effective refractory selection.
- Benefits of sustainable refractory practices for long-term performance.
- Integrating safety measures into refractory selection, installation, and maintenance.

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Registration form on the :
Refractory Material Selection and Application Training Course

code: 15809 **From:** 05 - 09 Jul 2026 **Venue:** Manama (Bahrain) **Fees:** 5500 **Euro**

Complete & Mail or fax to Mercury Training Center at the address given below

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