



COURSE OVERVIEW FE0014 **Certified Refractory Professional**

Course Title

Certified Refractory Professional

Course Date/Venue

November 09-13, 2025/Fulya & Yesim Meeting Room, Elite World Comfy Istanbul Taksim, Istanbul, Turkey

Course Reference

FE0014

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops:-



This course is designed to provide participants with a detailed and up-to-date overview of Certified Refractory Professional. It covers the definition and importance of refractory in industrial applications; the types of refractories and role of refractories in thermal insulation and protection; the refractory basics covering composition, properties, thermal conductivity, resistance, chemical resistance, durability and physical forms; the refractory classification and thermal properties of refractories; the preventive maintenance, regular inspection and safety considerations; and the safety in refractory operations, refractory material solution and refractory material evaluation.



Further, the course will also discuss the testing requirements, compliance and quality assurance, refractory failure analysis and proper inspection tools and techniques; the design principles for refractory linings, factors affecting refractory performance and thermal design consideration; the integration with industrial system; the refractory installation techniques, refractory anchoring systems and heat-up and dry-out procedures; the inspection during installation, refractory safety during installation, advanced inspection techniques and refractory maintenance strategies; and the refractory repair methods, refractory lining upgrades, inspection after repair and safety during maintenance and repairs.



During this interactive course, participants will learn the refractories in high-temperature applications covering steelmaking, metal refining cement, lime production, glass manufacturing and petrochemical and power plants; the emerging trends in refractories, comprising of nanotechnology, sustainable refractory production, recyclable refractory solutions and innovations in refractory coatings; and the life-cycle cost considerations, performance monitoring and evaluation and end-of-life disposal and recycling.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Get certified as a “*Certified Refractory Professional*”
- Discuss the definition and importance of refractory in industrial applications as well as the types of refractories and role of refractories in thermal insulation and protection
- Explain refractory basics covering composition, properties, thermal conductivity, resistance, chemical resistance, durability and physical forms
- Apply refractory classification, and identify thermal properties of refractories, as well as carryout preventive maintenance, regular inspection and safety considerations
- Implement safety in refractory operations, refractory material solution and refractory material evaluation
- Carryout testing requirements, compliance and quality assurance, refractory failure analysis and proper inspection tools and techniques
- Discuss the design principles for refractory linings, factors affecting refractory performance, thermal design consideration and integration with industrial systems
- Apply refractory installation techniques, refractory anchoring systems and heat-up and dry-out procedures
- Employ inspection during installation, refractory safety during installation, advanced inspection techniques and refractory maintenance strategies
- Illustrate refractory repair methods, refractory lining upgrades, inspection after repair and safety during maintenance and repairs
- Interpret the refractories in high-temperature applications covering steelmaking, metal refining, cement and lime production, glass manufacturing and petrochemical and power plants
- Discuss the emerging trends in refractories, comprising of nanotechnology, sustainable refractory production, recyclable refractory solutions and innovations in refractory coatings
- Apply life-cycle cost considerations, performance monitoring and evaluation and end-of-life disposal and recycling

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.



Who Should Attend

This course provides an overview of all significant aspects and considerations of refractory for engineers, project managers and supervisors, refractory technicians and operators, maintenance personnel, safety personnel, procurement and supply chain professionals, and other technical staff.

Course Certificate(s)

- (1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Successful candidate will be certified as a "Certified Refractory Professional" Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

* Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology *

 **Haward Technology Middle East**
Continuing Professional Development (HTME-CPD)

CEUs

CEU Official Transcript of Records

TOR Issuance Date: 15-Nov-23
HTME No. 74851
Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
FE0014-IH	Certified Refractory Professional	November 11-15, 2023	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY

Jaryl Castillo
Academic Director

Haward Technology has been approved as an Accredited Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2018 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2018 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology is accredited by


         

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Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.



Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Yasser Almasood is a **Senior Mechanical and Inspection Engineer** with almost **20 years** of industrial experience within the **Refractory Inspection, Testing & Repair, Advanced Insulation & Refractory Material & Work Execution, Design & Inspection of Refractory, Fireproofing Materials** in Gas Plants, **Refractory Repair/Concrete Repair/Survey, Basic Refractory**, Risk Based Inspection (RBI) Methodologies, Pipeline Design, Construction, Operation & Maintenance, Fundamental Pipeline Design, Inspection, Testing & Hydraulic Modeling, Piping Mechanical Design & Specification, **Root Cause Analysis** Techniques, **Oil & Gas, Refinery and Petrochemical** industries. His wide expertise covers in the areas of **Gas Processing** Calculation, **Process Reactor** Operation & Troubleshooting, **Catalytic Reactors, Heat Exchanger, Distillation Columns, Pumps**, Distributed Control System (DCS), **Catalytic Reformer Unit, Polymerization, Dehydrogenation, Gas Processing Plant Operations & Control, Gas Processing Monitoring & Troubleshooting, Process Plant Start-up** Commissioning & Troubleshooting, **Process Plant Optimization & Energy Conservation, Process Equipment Design & Troubleshooting, Advanced Operation Skills, Refinery Process Yield Optimization, Oil & Gas Processing, Troubleshooting Oil & Gas Processing Facilities, Polymers & Polymerization, Applied Process Engineering, Process Plant Troubleshooting & Engineering Problem Solving, Process Plant Performance & Efficiency, Process Design & Optimization, Desalination Processes, Reverse Osmosis and Molecular Sieves**. Further, he is also well-versed in **Process Analyzers & Analytical Instrumentation, Process Control, Instrumentation & Safeguarding, Process Controller, Control Loop & Valve Tuning, Industrial Distribution Systems, Industrial Control & Control Systems, Distributed Control System, Control Valves & Actuators, Advanced Process Control (APC) Technology, Process Control & Loop Tuning, Process Control & Automation**, AspenTech, Aspen HYSYS, Pro II, exSILentia, OLGA, Flare System Analyzer, Aspen PIMS, DYNsIM, RiskWISE, MS Office and IBM Maximo.

During his career life, Mr. Yasser has gained his practical and field experience through his various significant positions and dedication as the **Senior Process Engineer, Process Engineer, Inspection Engineer, Oil & Gas Process & Safety Instructor, On-Job Instructor, Process Senior Operator, Acting DCS Operator and Shift Controller** for various multi-national companies such as the ADNOC Gas Processing (**GASCO**), Conoco Phillips Gas Plant and Syrian Gas Company (SGC).

Mr. Yasser has a **Bachelor's** degree in **Petroleum Engineering**. Further, he is a **Certified Instructor/Trainer** and has further delivered numerous training, courses, workshops, seminars and conferences worldwide.

Course Fee

US\$ 6,000 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Sunday, 09th of November 2025

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	Overview of Refractories <i>Definition & Importance in Industrial Applications • Types of Refractories: Acidic, Basic, & Neutral • Role of Refractories in Thermal Insulation & Protection • Key Industries Using Refractories</i>
0930 – 0945	<i>Break</i>
0945 – 1045	Refractory Basics <i>Composition & Properties • Thermal Conductivity & Resistance • Chemical Resistance & Durability • Physical Forms: Bricks, Castables, & Monolithics</i>
1045 – 1145	Refractory Classification <i>Fireclay, High Alumina, & Silica-Based Refractories • Magnesite & Dolomite Refractories • Carbon-Containing Refractories (e.g., Graphite) • Emerging Trends in Refractory Technology</i>
1145 – 1230	Thermal Properties of Refractories <i>Thermal Shock Resistance • Heat Capacity & Thermal Expansion • Importance of Thermal Insulation • Testing & Measurement Techniques</i>
1230 – 1245	<i>Break</i>
1245 – 1330	Basics of Maintenance & Repair <i>Common Issues in Refractory Systems • Principles of Preventive Maintenance • The Importance of Regular Inspections • Safety Considerations in Maintenance</i>
1330 – 1420	Safety in Refractory Operations <i>Hazards Associated with Refractory Installation • Personal Protective Equipment (PPE) Requirements • Handling of Refractory Materials • Emergency Procedures & Protocols</i>
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day One</i>



Day 2: Monday, 10th of November 2025

0730 – 0830	Refractory Material Selection Criteria for Selecting Refractory Materials • Understanding Application Environments • Matching Materials with Operating Conditions • Cost-Benefit Analysis
0830 – 0930	Evaluation of Refractory Materials Physical & Chemical Property Evaluation • Testing for Mechanical Strength • Abrasion & Erosion Resistance • Compatibility with Process Conditions
0930 – 0945	Break
0945 – 1100	Testing Requirements ASTM Standards for Refractory Testing • Methods for Thermal Conductivity Testing • Flexural & Compressive Strength Testing • Wear & Corrosion Resistance Tests
1100 – 1230	Compliance & Quality Assurance Regulatory Standards for Refractory Materials • Documentation & Traceability Requirements • Quality Control Procedures in Refractory Manufacturing • Role of Third-Party Certification in Compliance
1230 – 1245	Break
1245 – 1330	Refractory Failure Analysis Common Failure Modes: Spalling, Cracking, & Chemical Attack • Root Cause Analysis Techniques • Tools & Methodologies for Failure Analysis • Case Studies of Refractory Failures
1330 – 1420	Inspection Tools & Techniques Visual Inspection Methods • Non-Destructive Testing (NDT) Techniques • Infrared Thermography for Condition Monitoring • Use of Ultrasonic Testing for Crack Detection
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3: Tuesday, 11th of November 2025

0730 – 0830	Basic Refractory Engineering Design Principles for Refractory Linings • Factors Affecting Refractory Performance • Thermal Design Considerations • Integration with Industrial Systems
0830 – 0930	Refractory Installation Techniques Bricklaying Methods & Principles • Castable & Gunning Techniques • Anchoring Systems & Configurations • Best Practices for Installation
0930 – 0945	Break
0945 – 1100	Refractory Anchoring Systems Purpose & Types of Anchors • Selection Criteria for Anchors • Anchor Layout & Spacing Requirements • Case Studies on Anchoring Failures
1100 – 1230	Heat-Up & Dry-Out Procedures Importance of Proper Heat-Up Processes • Stages of Dry-Out: Initial & Final Curing • Temperature Monitoring & Control • Risks of Improper Heat-Up Procedures

1230 – 1245	<i>Break</i>
1245 – 1330	Inspection During Installation <i>Quality Control Measures • Monitoring Installation Progress • Common Installation Errors & How to Avoid Them • Documentation & Reporting</i>
1330 – 1420	Refractory Safety During Installation <i>Key Safety Risks During Installation • Training Requirements for Workers • Emergency Response Planning • Compliance with Safety Regulations</i>
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day Three</i>

Day 4: Wednesday, 12th of November 2025

0730 – 0830	Advanced Inspection Techniques <i>Laser Scanning for Refractory Measurement • Acoustic Emission Monitoring • Magnetic Particle Testing (For Metallic Linings) • Thermal Imaging for Refractory Condition Assessment</i>
0830 – 0930	Refractory Maintenance Strategies <i>Scheduled versus Predictive Maintenance • Common Maintenance Practices • Repair versus Replacement Decision-Making • Tools for Maintenance Planning</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Refractory Repair Methods <i>Patching & Gunning Repairs • Replacement of Bricks & Tiles • Injection & Lining Repairs • Factors Affecting Repair Durability</i>
1100 – 1230	Refractory Lining Upgrades <i>Evaluating the Need for Upgrades • Selecting Materials for Enhanced Performance • Techniques for Upgrading Linings • Cost & Benefit Analysis of Upgrades</i>
1230 – 1245	<i>Break</i>
1245 – 1330	Inspection After Repairs <i>Post-Repair Inspection Methodologies • Checking for Repair Quality & Completeness • Use of NDT Methods for Verification • Creating Maintenance Reports</i>
1330 – 1420	Safety During Maintenance & Repairs <i>Risk Assessments for Maintenance Tasks • Managing Hot Work & Confined Spaces • Handling Hazardous Materials • Emergency Procedures for Repair Activities</i>
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day Four</i>

Day 5: Thursday, 13th of November 2025

0730 – 0930	Refractories in High-Temperature Applications <i>Steelmaking & Metal Refining • Cement & Lime Production • Glass Manufacturing • Petrochemical & Power Plants</i>
0930 – 0945	<i>Break</i>



0945 - 1100	Emerging Trends in Refractories <i>Nanotechnology in Refractory Materials • Sustainable Refractory Production • Recyclable Refractory Solutions • Innovations in Refractory Coatings</i>
1100 – 1230	Case Studies in Refractory Engineering <i>Successful Refractory Installations • Analysis of Refractory Failures • Lessons Learned from Industry Projects • Best Practices for Refractory Management</i>
1230 – 1245	Break
1245 – 1300	Life-Cycle Analysis of Refractories <i>Life-Cycle Cost Considerations • Performance Monitoring & Evaluation • Factors Affecting Refractory Life Expectancy • End-of-Life Disposal & Recycling</i>
1300 – 1315	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1315 – 1415	COMPETENCY EXAM
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

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