



COURSE OVERVIEW FE0850
API 936: Refractory Personnel Certification Program
(API Exam Preparation Training)

Course Title

API 936: Refractory Personnel Certification Program (API Exam Preparation Training)

Course Date/Venue

Please refer to page 3

Course Reference

FE0850

Course Duration/Credits

Five days (40 hours)/4.0 CEUs/40 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 API Certification Program is designed to train individuals on Refractory installation, inspection, testing and repair in accordance with API Recommended Practice 936. API RP 936 provides guidelines for the installation quality control of refractory linings and usually used to supplement owner specifications. The course also covers the material, equipment and personnel qualification requirements along with procedures and responsibilities for quality control inspection personnel.



API Refractory Certification Program provides the industry with a means for central, independent, unbiased and legally defensible certification and ensures that refractory personnel demonstrate competence in content areas that are relevant to their practices. The program raises the bar of competence for qualified personnel and provides a peace-of-mind to the industry that the certified individual has demonstrated knowledge of the relevant content of refractory installation and inspection. For the refractory personnel, this certification provides a method to demonstrate knowledge and experience with refractories and refractory inspection to employers and clients.



By participating in API's 936 Certification Program, inspectors and other professionals serving the petroleum, petrochemicals, and chemical industries are readily able to provide evidence of proper qualification. Certification provides personnel with industry-directed and industry-accepted professional credentials.





This course is designed to train individuals who are interested in obtaining the API 936 Certification, as well as those who are seeking knowledge and skills needed for the installation, inspection, testing and repair of refractory systems. Included with the course is a pre-study guide and student classroom workbook. The student receives instruction regarding how to take the test, as well as insight into the intricacies of "real world" situations. Daily tests are designed to gauge students' proficiency and understanding of the material.

Howard Technology is proud of its **90% pass rate** on all API examinations.

Course Objectives

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

- Get prepared for the next API 936 exam and have enough knowledge and skills to pass such exam in order to get the API 936 certification
- Discuss refractory technology, the scope of API 936 standard and the distinction between monolithic, brick and fiber refractory systems
- Carryout sampling and testing frequency per standard requirements and interpret ASTM test data for compliance reports
- Identify refractory material types, selection criteria and documentation, specifications and submittals
- Recognize engineering design and refractory lining systems and apply monolithic refractory installation procedures and brick refractory installation per API 975
- Employ fiber refractory installation per API 976, refractory anchoring systems and quality control and inspection documentation
- Illustrate inspection stages and checklists, material sampling and laboratory testing
- Discuss API 936 testing requirements and apply ASTM test methods, equipment calibration and testing accuracy
- Apply quality assurance and certification protocols, dry-out and heat-up procedures as well as thermal shock and expansion control
- Identify common refractory failures and carryout maintenance and repair techniques, safety and environmental considerations and documentation and record retention
- Perform volume and density calculations and sample test data analysis and identify percent change and linear shrinkage problems

Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive "Howard 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 prepares participants for the API 936 exam. It is designed for those who are involved in the installation, inspection, testing or repair of refractory systems. Other engineers, managers or technical staffs who are seeking broad knowledge of refractory properties, installations and application will definitely benefit from this course.

Required Qualification to Take API 936 Exam

The API 936 Refractory Personnel certification is open to applicants with any experience in the petroleum and petrochemical industries as well as applicants wanting to gain industry experience.

To obtain an API 936 certification, candidates will need to pass the 936 Refractory Personnel examination.

Required Codes & Standards

Listed below are the effective editions of the publications required for the next API-936, Refractory Personnel Certification Examination:-

API Publications

- **API Standard 936**, *Refractory Installation Quality Control Guidelines – Inspection and Testing Monolithic Refractory Linings and Materials, 5th Edition, March 2024*
- **API Standard 975**, *Refractory Installation Quality Control — Inspection and Testing of Refractory Brick Systems and Materials, 1st Edition, November 2021*
- **API Standard 976**, *Refractory Installation Quality Control — Inspection and Testing of AES/RCF Fiber Linings and Materials, 1st Edition, March 2018*

ASTM (American Society for Testing and Materials) Publications

- **C113-14 (2019)** – Standard Test Method for Reheat Change of Refractory Brick
- **C133-97 (2021)** – Standard Test Methods for Cold Crushing Strength and Modulus of Rupture of Refractories
- **C181-11 (2018)** – Standard Test Method for Workability Index of Fireclay and High-Alumina Plastic Refractories
- **C704-15** – Standard Test Method for Abrasion Resistance of Refractory Materials at Room Temperatures

Course Date/Venue

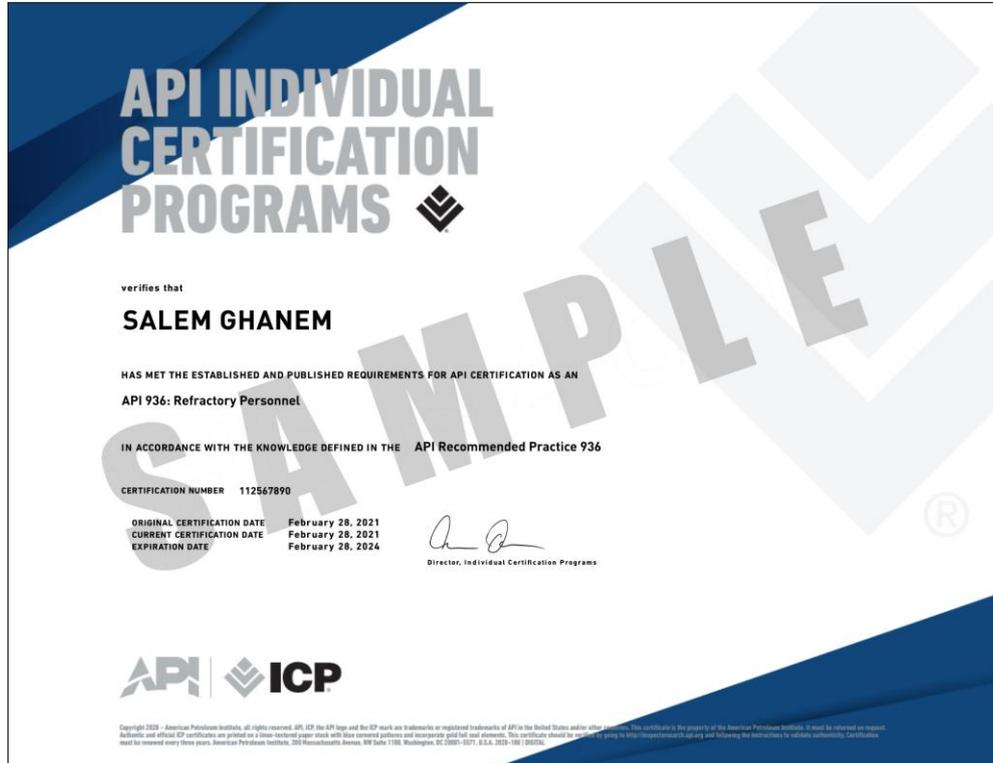
Sessions	Date	Venue
1	February 01-05, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
2	March 29-April 02, 2026	
3	June 22-26, 2026	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
4	September 20-24, 2026	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey
5	December 27-31, 2026	Crowne Meeting Room, Crowne Plaza Al Khobar, an IHG Hotel, Al Khobar, KSA
Exam Venue	TBA/Abu Dhabi, Dubai, Al Khobar, Jeddah, Kuwait, Amman, Beirut, Cairo, Manama and Muscat. Participant has the option to attend at any of the above cities.	





API Certificate(s)

- (1) API-936 certificate will be issued to participants who have successfully passed the API-936 examination.



- (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.

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CEUs

Howard Technology Middle East
Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-23
HTME No. 74862
Participant Name: Salem Ghanem

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
FE0850	API 936: Refractory Personnel (API Exam Preparation Training)	November 10-14, 2023	40	4.0

Total No. of CEU's Earned as of TOR Issuance Date: **4.0**

TRUE COPY
[Signature]
Jonny Caestillo
Academic Director

Howard Technology has been approved as the Accredited Provider by the International Association for Continuing Education and Training (IACET), 2001 Cooperate Way, Suite 600, Farmington, NJ 07031, USA. In obtaining this approval, Howard Technology has demonstrated that it complies with the ANSI/IACET 1:2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized membership status, Howard Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1:2013 Standard.

Howard Technology records 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 standard of measurement in qualified courses & continuing education.

Howard Technology is accredited by:

BAC, IACET, ANCC, ILM, UKAS, ISO 9001:2015, PM, FOA, iosh, AWS, BoHS

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Certificate Accreditations

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

-  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.

-  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 **4.0 CEUs** (Continuing Education Units) or **40 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.

Accommodation

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





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. Michael Linck, MBA, BBA, is a Senior Piping & Mechanical Engineer with over 30 years of practical experience in the Oil, Gas, Petrochemical and Power industries. His expertise covers ASME Post Construction Code, Inspection Planning, Fitness-for-Service, Damage Mechanisms & Repair of Vessels, Tanks, Piping & Process Equipment, Pipeline Pigging, Pipeline Integrity Assessment, Corrosion Monitoring, Control, Prevention and Inspection, Screw Compressors, Building & Facilities Maintenance Management, Maintenance Planning, Maintenance Auditing & Benchmarking, Risk Management Program (RMP), Reliability, Availability & Maintability (RAM), Material Cataloguing, planning and implementation of small to large boiler projects, insulation, scaffolding, installation, operation and inspection of steel, cement, petrochemical and power industries, both new installations and aftermarket service projects. Currently, he is the VP of Operations for Refractory Repair Services as well as the President of LINCK REFRACTORY INTERNATIONAL SERVICES, taking full charge of all refractory and mechanical maintenance related operations.

Earlier in his career life, Mr. Linck held numerous significant and challenging positions as the **Commissioning Specialist, Maintenance Specialist, Contract Specialist, Site Manager, General Manager, Project Manager, Branch Manager, Construction Manager, Manager and Contract Site Service Representative** in several international companies such as **Foster Wheeler, NV Gouda Vuurvast, Insultec Ltd., National Refractories Clay Alumina Specialties, Thermo Tech, Turnaround Maintenance Inc., Solar Industries and Anco Industries.**

Mr. Linck has a **Master and Bachelor** degrees in **Engineering** from the **North Texas University and University of Dallas** respectively. He is **certified** as an **API 936 Inspector** early in 2003 as well as holds or has held state contracting licenses related to heavy construction and engineering in West Virginia, Mississippi, Louisiana, Oklahoma and Arizona.

Training Fee

Dubai/Abu Dhabi/AI Khobar	US\$ 7,500 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Istanbul	US\$ 8,000 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Exam Fees

US\$ 795 per Delegate + **VAT**.





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 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

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to Refractory Technology Definition and Classification of Refractory Materials • Physical, Chemical and Thermal Properties • Importance of Refractories in Process Industries • Common Failure Mechanisms and Lifecycle Factors
0930 – 1000	Overview of API 936 Standard Scope, Structure and Intent of API 936 • Key Changes in the 5th Edition and Their Implications • Refractory Installation Quality Control Philosophy • Inspector’s Roles and Responsibilities per API 936
1000 – 1015	Break
1015 – 1045	Overview of Related API Standards (975 & 976) Relationship Among API 936, 975 and 976 • Distinction Between Monolithic, Brick, and Fiber Refractory Systems • Quality Control and Testing Requirements Across Standards • Case Examples from Petrochemical Plants and FCC Units
1045 – 1230	ASTM Standards Integration & Relevance Overview of ASTM C113, C133, C181 and C704 • Alignment Between API and ASTM Methodologies • Sampling and Testing Frequency per Standard Requirements • Interpretation of ASTM Test Data for Compliance Reports
1230 – 1330	Lunch
1330 – 1500	Refractory Material Types & Selection Criteria Monolithic, Castable, Plastic and Insulating Refractories • Raw Materials and Manufacturing Processes • Factors Affecting Refractory Selection for Different Units • Material Compatibility and Thermal Shock Resistance
1500 – 1515	Break
1515 – 1650	Documentation, Specifications & Submittals Engineering Data Sheets and QC Documentation • Material Certifications and Batch Traceability • Supplier Qualifications and Approval Protocols • Typical Documentation per API 936 Requirements
1650 – 1700	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
1700	End of Day One





Day 2

0730 – 0830	Engineering Design & Refractory Lining Systems <i>Lining Design Principles for Vessels and Heaters • Thermal Expansion and Contraction Allowances • Anchoring Systems and Their Configurations • Heat Loss and Stress Analysis Fundamentals</i>
0830 – 0930	Monolithic Refractory Installation Procedures <i>Dry-out and Mixing Techniques • Placement and Vibration Methods • Forming and Curing Controls • Inspection Points during Installation</i>
0930 – 0945	<i>Break</i>
0945 – 1215	Brick Refractory Installation per API 975 <i>Types of Refractory Bricks and Bonding Materials • Bricklaying Patterns and Expansion Joints • Mortar Preparation and Application Control • Inspection Criteria for Brickwork</i>
1215 – 1230	Fiber Refractory Installation per API 976 <i>AES/RCF Fiber Classification and Applications • Fiber Module Anchoring and Installation Procedures • Handling and Health Safety Considerations • Quality Inspection and Acceptance Testing</i>
1230 – 1330	<i>Lunch</i>
1330 – 1515	Refractory Anchoring Systems <i>Metallic and Ceramic Anchors • Design and Placement Standards • Failure Modes and Prevention • Inspection Checklists and Tolerances</i>
1515 – 1530	<i>Break</i>
1530 – 1650	Quality Control & Inspection Documentation <i>API 936-Required Inspection Forms • Nonconformance Documentation and Reporting • Witness and Hold Points During Inspection • Acceptance and Rejection Criteria</i>
1650 – 1700	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>
1700	<i>End of Day Two</i>

Day 3

0730 – 0830	Inspection Stages & Checklists <i>Pre-Installation Inspection • In-Process Inspection Checkpoints • Post-Installation Inspection and Documentation • Common Field Issues and Troubleshooting</i>
0830 – 0930	Material Sampling & Laboratory Testing <i>Sampling Procedures for Castables and Plastics • Handling and Curing of Test Specimens • Frequency and Selection per API 936 • Recordkeeping and Traceability</i>
0930 – 0945	<i>Break</i>
0945 – 1215	API 936 Testing Requirements <i>Density, Porosity and Strength Tests • Hot Modulus of Rupture (HMOR) • Permanent Linear Change (PLC) • Visual and Dimensional Inspection Standards</i>
1215 – 1230	ASTM Test Methods in Detail <i>ASTM C113: Reheat Change and Dimensional Stability • ASTM C133: Cold Crushing Strength and Modulus of Rupture • ASTM C181: Workability Index and Mixing Consistency • ASTM C704: Abrasion Resistance and Erosion Testing</i>
1230 – 1330	<i>Lunch</i>



1330 – 1515	Equipment Calibration & Testing Accuracy Test Equipment Verification and Calibration Frequency • Laboratory Setup and Environmental Conditions • Data Accuracy and Repeatability Control • Statistical Analysis and Result Validation
1515 – 1530	Break
1530 – 1650	Quality Assurance & Certification Protocols API 936 QC Hierarchy and Documentation Flow • Field Acceptance Testing and Contractor Qualifications • Review of QA/QC Plans and ITPs • Practical Case Studies on Inspection Data
1650 – 1700	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
1700	End of Day Three

Day 4

0730 – 0830	Dry-out & Heat-up Procedures Objectives and Importance of Controlled Dry-out • Steam Evolution and Pressure Buildup Risks • Typical Heat-Up Curves and Monitoring Methods • Recording and Reporting Requirements
0830 – 0930	Thermal Shock & Expansion Control Mechanisms of Thermal Shock Damage • Material Design to Mitigate Stress • Expansion Joint Detailing • Temperature Gradient Management
0930 – 0945	Break
0945 – 1215	Common Refractory Failures Cracking, Spalling, Chemical Attack and Erosion • Improper Installation and Curing Defects • Case Analysis from Refinery and Petrochemical Plants • Root Cause Identification and Corrective Actions
1215 – 1230	Maintenance & Repair Techniques Cold Repair versus Hot Repair Methods • Patch Materials and Bonding Procedures • Prequalification of Repair Materials • Quality Inspection After Repair
1230 – 1330	Lunch
1330 – 1515	Safety & Environmental Considerations PPE and Confined Space Requirements • Handling of RCF (Refractory Ceramic Fiber) and AES Fibers • Waste Disposal and Recycling of Refractories • Environmental Compliance and Reporting
1515 – 1530	Break
1530 – 1650	Documentation & Record Retention Inspection and Test Records Retention • Repair Logs and Deviation Management • Client Handover Documentation • API Audit Preparation
1650 – 1700	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
1700	End of Day Four



Day 5

0730 – 1000	API 936 Exam Structure & Strategy <i>Examination Blueprint and Format • Question Types and Time Management • Key Focus Areas from API 936 Body of Knowledge • Study Tips and Reference Materials</i>
1000 – 1015	<i>Break</i>
1015 – 1230	API 936 Calculation & Interpretation Practice <i>Volume and Density Calculations • Percent Change and Linear Shrinkage Problems • Sample Test Data Analysis • Mock Problem-Solving Session</i>
1230 – 1330	<i>Lunch</i>
1330 – 1515	Case Studies & Practical Scenarios <i>Real-World Refractory Installation Audits • Common Inspection Deviations and NCRs • Corrective Actions and Reporting Templates • Lessons Learned from API Audits</i>
1515 - 1530	<i>Break</i>
1530 - 1615	Review of API & ASTM References <i>Cross-Referencing API 936 with API 975 and 976 • Integration of ASTM Test Data • Common Terminologies and Definitions • Summary of Critical Standards and Clauses</i>
1615 - 1630	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1630 – 1645	POST-TEST
1645 – 1700	<i>Presentation of Course Certificates</i>
1700	<i>End of Course</i>

MOCK Exam

Upon the completion of the course, participants have to sit for a MOCK Examination similar to the exam of the Certification Body through Haward’s Portal. Each participant will be given a username and password to log in Haward’s Portal for the MOCK Exam during the 60 days following the course completion. Each participant has only one trial for the MOCK exam within this 60-day examination window. Hence, you have to prepare yourself very well before starting your MOCK exam as this exam is a simulation to the one of the Certification Body.



Practical Sessions

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



Course Coordinator

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