

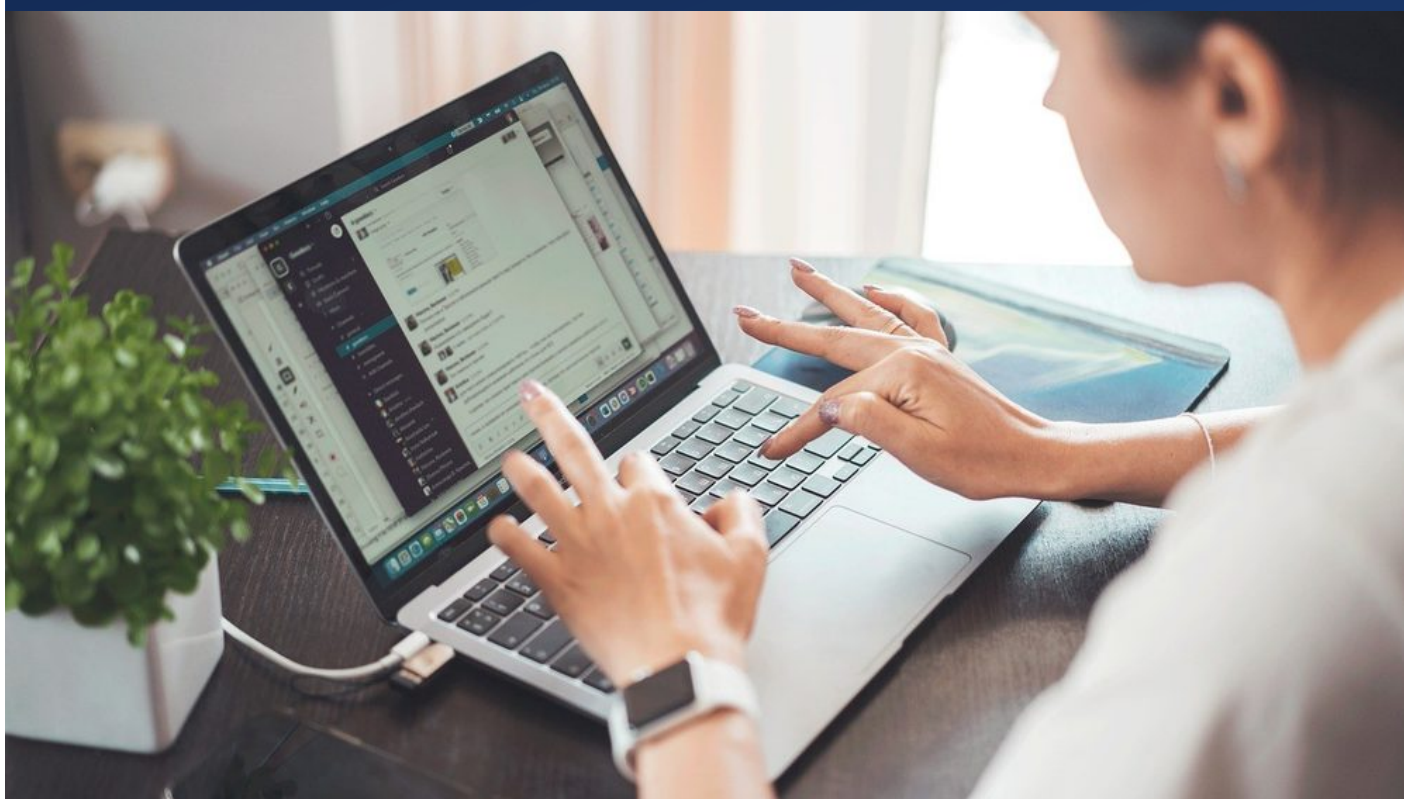
LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

ISO 17268 — Gaseous Hydrogen Land Vehicle Refuelling Connection Devices

ISO Certification Programme



LAPT — London Academy of Professional Training

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Reference ENG-HYD-17268 • ISO Energy

UKPRN 10067351 • Registered in England and Wales, company 4984798

AT A GLANCE

REFERENCE	ENG-HYD-17268
AWARD	Certificate
ASSESSMENT	425 marks — 255 to pass (60%)
PREREQUISITES	None
VALIDITY	Lifetime
AWARDING BODY	LAPT — London Academy of Professional Training

CURRICULUM

1

Innovation in Hydrogen Refuelling

5 chapters · 30 classes 45 marks

• 1 Fundamentals of Hydrogen Fuel and Refuelling Technologies — 6 classes

› 1.1 Explore the Properties of Hydrogen as a Fuel

› 1.2 Identify Key Components of Hydrogen Refuelling Systems

› 1.3 Examine the Safety Protocols in Hydrogen Refuelling

› 1.4 Compare Hydrogen Refuelling Technologies with Conventional Fuels

› 1.5 Assess the Environmental Impact of Hydrogen Fuel Utilization

› 1.6 Design a Basic Hydrogen Refuelling Station Layout

• 2 Standards and Regulations in Hydrogen Refuelling Systems — 6 classes

› 2.1 Explore ISO 17268 Standards for Hydrogen Refuelling Devices

› 2.2 Analyze the Importance of Compliance in Hydrogen Refuelling

› 2.3 Identify Key Regulations Affecting Hydrogen Refuelling Systems

› 2.4 Evaluate Safety Protocols in Hydrogen Refuelling Operations

› 2.5 Discuss Innovations Driven by Regulatory Standards in Hydrogen Technology

› 2.6 Develop a Compliance Checklist for Hydrogen Refuelling Stations

• 3 Design and Engineering of Refuelling Connection Devices — 6 classes

› 3.1 Explore Principles of Hydrogen Refuelling Connection Design

› 3.2 Analyze Key Components of Refuelling Connection Devices

› 3.3 Evaluate Safety Standards for Gaseous Hydrogen Connections

› 3.4 Identify Innovations in Refuelling Connection Technology

› 3.5 Develop Prototypes for Hydrogen Refuelling Devices

› 3.6 Implement Testing Procedures for Design Validation

• 4 Innovation and Emerging Technologies in Hydrogen Refuelling — 6 classes

› 4.1 Explore Current Innovations in Hydrogen Refuelling Technologies

› 4.2 Analyze the Role of Emerging Materials in Hydrogen Storage

› 4.3 Investigate Safety Protocols for Hydrogen Refuelling Systems

› 4.4 Evaluate Efficiency Improvements through Automation in Refuelling

› 4.5 Design a Prototype for an Advanced Refuelling Connection Device

› 4.6 Present a Strategic Plan for Implementing Innovative Refuelling Solutions

• 5 Future Trends and Sustainability in Hydrogen Refuelling Infrastructure — 6 classes

› 5.1 Analyze Future Trends in Hydrogen Refuelling Technology

› 5.2 Explore Sustainable Practices in Hydrogen Infrastructure Development

› 5.3 Assess the Impact of Policy Changes on Hydrogen Refuelling Projects

› 5.4 Evaluate Current Economic Models for Hydrogen Refuelling Hubs

› 5.5 Design a Conceptual Framework for Future Refuelling Stations

› 5.6 Propose Innovations for Enhancing Hydrogen Refuelling Efficiency

• 1 Fundamentals of Hydrogen as an Energy Carrier — 6 classes

- › 1.1 Define Hydrogen as an Energy Carrier
- › 1.2 Explore the Properties of Hydrogen: Understanding Its Characteristics
- › 1.3 Compare Hydrogen with Other Energy Carriers: Advantages and Disadvantages
- › 1.4 Identify Methods of Hydrogen Production: From Electrolysis to Reforming
- › 1.5 Analyze the Role of Hydrogen in Sustainable Energy Systems
- › 1.6 Evaluate the Applications of Hydrogen in Transportation Technologies

• 2 Hydrogen Production Methods and Technologies — 6 classes

- › 2.1 Explore the Fundamentals of Hydrogen Production
- › 2.2 Identify Key Methods for Producing Hydrogen
- › 2.3 Analyze the Benefits and Challenges of Electrolysis
- › 2.4 Evaluate the Role of Steam Methane Reforming in Hydrogen Production
- › 2.5 Investigate Biomass and Its Potential for Hydrogen Generation
- › 2.6 Discuss Future Trends and Innovations in Hydrogen Production Technologies

• 3 Hydrogen Storage and Transportation Solutions — 6 classes

- › 3.1 Explore the Fundamentals of Hydrogen Storage Methods
- › 3.2 Identify Key Materials Used in Hydrogen Tanks
- › 3.3 Evaluate the Safety Standards in Hydrogen Storage Systems
- › 3.4 Analyze Transportation Techniques for Gaseous Hydrogen
- › 3.5 Compare the Efficiency of Different Hydrogen Transport Solutions
- › 3.6 Design a Safe Refuelling Connection for Hydrogen Vehicles

• 4 Hydrogen Refuelling Infrastructure and Technologies — 6 classes

- › 4.1 Explore the Fundamentals of Hydrogen Refuelling Infrastructure
- › 4.2 Identify Key Components of Hydrogen Refuelling Systems
- › 4.3 Examine Safety Standards and Regulations for Hydrogen Refuelling
- › 4.4 Analyze the Operational Principles of Refuelling Connection Devices
- › 4.5 Evaluate the Impact of Hydrogen Infrastructure on Automotive Technology
- › 4.6 Propose Innovations for Enhancing Hydrogen Refuelling Efficiency

• 5 Regulatory Framework and Future of Hydrogen Technologies — 6 classes

- › 5.1 Explore Key Regulations Impacting Hydrogen Technologies
- › 5.2 Identify Standards for Gaseous Hydrogen Vehicle Refuelling
- › 5.3 Analyze Current Compliance Challenges in Hydrogen Systems
- › 5.4 Discuss the Role of ISO Standards in Advancing Hydrogen Technology
- › 5.5 Evaluate Future Trends in Hydrogen Regulation and Compliance
- › 5.6 Propose Strategies for Implementing Hydrogen Regulations in Practice

• 1 Understanding ISO 17268: Scope and Purpose — 6 classes

- › 1.1 Explore the Importance of ISO Standards in the Automotive Industry
- › 1.2 Identify Key Components of ISO 17268 and Their Functions
- › 1.3 Analyze the Scope of ISO 17268: Applications and Limitations
- › 1.4 Examine Compliance Requirements for Gaseous Hydrogen Refuelling
- › 1.5 Discuss the Implications of Non-Compliance with ISO 17268
- › 1.6 Apply Knowledge of ISO 17268 to Develop a Refuelling Device Strategy

• 2 Key Terminology and Definitions in ISO Standards — 6 classes

- › 2.1 Identify and Define Key Terms in ISO 17268
- › 2.2 Explore the Importance of Standardization in Gaseous Hydrogen Technology
- › 2.3 Differentiate Between Types of Refuelling Connection Devices
- › 2.4 Analyze Compliance Requirements within ISO 17268
- › 2.5 Examine Case Studies on ISO Standards Implementation
- › 2.6 Apply Key Terminology to Real-world Scenarios in Hydrogen Refuelling

• 3 Requirements and Specifications for Refuelling Devices — 6 classes

- › 3.1 Explore the Purpose and Scope of ISO 17268 Standards
- › 3.2 Identify Key Requirements for Refuelling Connection Devices
- › 3.3 Analyze Technical Specifications for Gaseous Hydrogen Systems
- › 3.4 Compare International Standards Related to Refuelling Devices
- › 3.5 Evaluate Compliance Measures for Safety and Reliability
- › 3.6 Implement Best Practices for Refuelling Device Installation

• 4 Testing Protocols and Compliance Assessment — 6 classes

- › 4.1 Identify Key Testing Protocols for Hydrogen Refuelling Devices
- › 4.2 Analyze Compliance Requirements for ISO 17268
- › 4.3 Evaluate Testing Methods for Gaseous Hydrogen Systems
- › 4.4 Develop Compliance Assessment Criteria for Refuelling Equipment
- › 4.5 Implement Quality Control Measures in Testing Procedures
- › 4.6 Review Case Studies of ISO 17268 Compliance Failures

• 5 Implications of Non-Compliance and Case Studies — 6 classes

- › 5.1 Identify the Consequences of Non-Compliance with ISO 17268
- › 5.2 Analyze the Financial Impact of Non-Compliance in the Hydrogen Sector
- › 5.3 Assess Legal Implications and Case Studies Related to Non-Compliance
- › 5.4 Explore Health and Safety Risks Associated with Non-Compliance
- › 5.5 Review Real-World Case Studies of Non-Compliance Outcomes
- › 5.6 Develop a Compliance Improvement Action Plan Based on Case Analysis

• 1 Understanding Leadership Styles in Hydrogen Energy Contexts

— 6 classes

- › 1.1 Define Leadership Styles Relevant to Hydrogen Energy
- › 1.2 Identify Key Traits of Effective Leaders in Sustainable Energy
- › 1.3 Analyze Case Studies on Leadership in Hydrogen Initiatives
- › 1.4 Evaluate the Impact of Leadership Styles on Team Performance
- › 1.5 Develop a Personal Leadership Philosophy for the Hydrogen Sector
- › 1.6 Apply Leadership Styles to Real-World Hydrogen Project Scenarios

• 2 Building Effective Teams for Hydrogen Refuelling Innovation — 6

classes

- › 2.1 Identify Key Roles in Hydrogen Refuelling Teams
- › 2.2 Foster Collaboration Among Diverse Team Members
- › 2.3 Develop Communication Strategies for Innovation
- › 2.4 Implement Problem-Solving Techniques for Team Challenges
- › 2.5 Evaluate Team Performance in Hydrogen Projects
- › 2.6 Create Action Plans for Continuous Team Improvement

• 3 Communication and Collaboration in Hydrogen Projects — 6

classes

- › 3.1 Understand the Importance of Effective Communication in Hydrogen Projects
- › 3.2 Identify Key Stakeholders and Their Communication Needs
- › 3.3 Develop Active Listening Skills for Team Collaboration
- › 3.4 Utilize Digital Tools for Enhancing Team Communication
- › 3.5 Facilitate Team Meetings to Foster Collaborative Decision-Making
- › 3.6 Evaluate Communication Strategies for Continuous Improvement

• 4 Problem-Solving and Decision-Making in Leadership — 6 classes

- › 4.1 Identify Common Leadership Challenges in Decision-Making
- › 4.2 Analyze Problem-Solving Models and Their Applications
- › 4.3 Evaluate the Role of Team Dynamics in Effective Decision-Making
- › 4.4 Develop Strategies for Collaborative Problem Solving
- › 4.5 Implement Decision-Making Tools for Leadership Scenarios
- › 4.6 Reflect on Case Studies of Leadership Decision-Making

• 5 Leading Change: Implementing ISO 17268 Standards — 6 classes

- › 5.1 Establishing the Need for ISO 17268 Adoption
- › 5.2 Identifying Stakeholders and Their Roles in Implementation
- › 5.3 Developing a Change Management Strategy for ISO Standards
- › 5.4 Communicating Change Effectively to the Team
- › 5.5 Training and Empowering Teams for Compliance with ISO 17268
- › 5.6 Evaluating the Success of ISO 17268 Implementation

• 1 Understanding ISO 17268 Standards and Applications — 6 classes

- › 1.1 Explore ISO 17268 Standards for Hydrogen Refuelling
- › 1.2 Identify Key Components of Gaseous Hydrogen Connection Devices
- › 1.3 Understand Safety Protocols in Hydrogen Refuelling Operations
- › 1.4 Examine Testing and Compliance Requirements for Refuelling Devices
- › 1.5 Analyze Case Studies of ISO 17268 Implementation in the Field
- › 1.6 Develop Best Practices for Managing Refuelling Operations

• 2 Design and Functionality of Hydrogen Refuelling Connection Devices — 6 classes

- › 2.1 Analyze the Design Principles of Hydrogen Refuelling Connection Devices
- › 2.2 Examine the Safety Features Integrated into Refuelling Connection Devices
- › 2.3 Identify the Key Functional Components of Hydrogen Refuelling Connectors
- › 2.4 Assess the Performance Standards for Gaseous Hydrogen Refuelling Devices
- › 2.5 Compare Different Types of Hydrogen Refuelling Connection Devices
- › 2.6 Implement Best Practices for Operating Hydrogen Refuelling Connection Devices

• 3 Operational Procedures for Safe Refuelling Practices — 6 classes

- › 3.1 Identify Safety Protocols for Hydrogen Refuelling
- › 3.2 Understand Equipment Requirements for Safe Connections
- › 3.3 Demonstrate Proper Refuelling Techniques
- › 3.4 Assess Risks and Hazards in Refuelling Operations
- › 3.5 Implement Emergency Response Strategies during Refuelling
- › 3.6 Evaluate and Improve Refuelling Procedures for Safety

• 4 Management of Hydrogen Refuelling Systems — 6 classes

- › 4.1 Understand the Principles of Hydrogen Refuelling Systems
- › 4.2 Identify Key Components of Refuelling Connection Devices
- › 4.3 Explain the Safety Protocols for Hydrogen Refuelling
- › 4.4 Analyze Operational Procedures for Refuelling Management
- › 4.5 Assess Compliance with ISO 17268 Standards
- › 4.6 Implement Best Practices for Refuelling System Maintenance

• 5 Quality Assurance and Continuous Improvement in Refuelling Operations — 6 classes

- › 5.1 Identify Key Quality Assurance Principles in Refuelling Operations
- › 5.2 Assess Current Quality Control Measures in Hydrogen Refuelling
- › 5.3 Develop Standard Operating Procedures for Enhanced Safety
- › 5.4 Implement Continuous Improvement Strategies for Refuelling Efficiency
- › 5.5 Utilize Data Analysis to Monitor Quality Assurance Metrics
- › 5.6 Evaluate and Revise Operational Procedures for Optimal Performance

• 1 Introduction to Gaseous Hydrogen Safety Standards — 6 classes

- › 1.1 Understand Key Gaseous Hydrogen Safety Standards
- › 1.2 Identify Risks Associated with Gaseous Hydrogen
- › 1.3 Explore the ISO 17268 Certification Process
- › 1.4 Analyze Case Studies on Gaseous Hydrogen Incidents
- › 1.5 Develop Emergency Response Plans for Hydrogen Incidents
- › 1.6 Implement Best Practices in Hydrogen Refuelling Safety

• 2 Identifying Hazards in Hydrogen Refuelling Systems — 6 classes

- › 2.1 Recognize Common Hazards in Hydrogen Refuelling Systems
- › 2.2 Analyze Potential Risks Associated with Hydrogen Exposure
- › 2.3 Assess the Impact of Equipment Failures on Safety
- › 2.4 Evaluate Emergency Scenarios in Hydrogen Refuelling Operations
- › 2.5 Implement Safety Protocols for Hazard Mitigation
- › 2.6 Develop a Risk Management Plan for Hydrogen Refuelling Sites

• 3 Risk Assessment Methodologies for Hydrogen Safety — 6 classes

- › 3.1 Identify Key Hazards in Hydrogen Refuelling Systems
- › 3.2 Evaluate Existing Risk Assessment Methodologies for Hydrogen Safety
- › 3.3 Analyze Potential Consequences of Hydrogen Release
- › 3.4 Develop Risk Mitigation Strategies for Hydrogen Refuelling Operations
- › 3.5 Implement Safe Practices in Hydrogen Refuelling Scenarios
- › 3.6 Review and Adapt Risk Assessment Protocols for Continuous Improvement

• 4 Implementing Safety Measures and Controls — 6 classes

- › 4.1 Identify Key Safety Standards for Hydrogen Refuelling
- › 4.2 Analyze Risks Associated with Gaseous Hydrogen Use
- › 4.3 Develop Safety Protocols for Refuelling Operations
- › 4.4 Implement Control Measures for Hazard Mitigation
- › 4.5 Evaluate the Effectiveness of Established Safety Measures
- › 4.6 Communicate Safety Procedures to Stakeholders

• 5 Emergency Response and Incident Management in Hydrogen Systems — 6 classes

- › 5.1 Identify Potential Emergency Scenarios in Hydrogen Systems
- › 5.2 Assess Risks Associated with Hydrogen Incidents
- › 5.3 Develop Emergency Response Procedures for Hydrogen Leaks
- › 5.4 Train Personnel on Personal Protective Equipment for Hydrogen Emergencies
- › 5.5 Implement Communication Strategies During Hydrogen Incidents
- › 5.6 Review Case Studies of Emergency Responses in Hydrogen Systems