SIAS Qualification Specification

SIAS Level 2 Award in the Introduction to Hydrogen Storage

Qualification Number: 610/6302/2

Operational Start Date: 1st September 2025

Contents

Version History

This is a live document and as such will be updated when required. It is the responsibility of the approved centre to ensure the most up-to-date version of the Qualification Specification is in use.

Version	Date	Comments
1.0	01/09/2025	First Published

Introduction

Welcome to SIAS

SIAS is an Awarding Organisation regulated in England by the Office of Qualifications and Examinations Regulation (Ofqual) and in Northern Ireland by the Council for Curriculum, Examination and Assessment Regulation (CCEA Regulation).

We exist to drive positive change, and across STEM industries globally, we empower learners to achieve their full potential.

As the leading Awarding Organisation for the technical science, manufacturing, engineering and low carbon sectors, we are disrupting through innovative and collaborative approaches.

Our mission is to deliver transformational experiences and solutions that support the skills agenda.

Feedback

Customer experience and feedback is very important to us. We're always open to suggestions when it comes to enhancing and improving our services. If you have any comments or feedback on our services or products, please contact our team at info@siasuk.com or call us on 01925 515211.

About this Specification

This document has been developed to provide information for learners and centres undertaking, delivering or quality assuring this qualification.

Centre Recognition and Qualification Approval

To deliver this qualification, the centre must be recognised by SIAS.

Recognised centres must apply for approval for each qualification they intend to offer. Qualification approval must be obtained prior to conducting any learner assessments.

For details of our centre recognition and qualification approval process, visit our website or contact us at info@siasuk.com.

About this Qualification

Key Facts

Qualification Title	SIAS Level 2 Award in the Introduction to Hydrogen Storage
Qualification Number	610/6302/2
Guided Learning Hours (GLH)	20
Total Qualification Time (TQT)	25
Assessment Methods	Multiple-Choice Question Examination
Operational Start Date	1st September 2025
Review Date	31st August 2028
Operational End Date	-
Certification End Date	-
Regulation	This qualification is regulated by Ofqual

Qualification Objective

The SIAS Level 2 Award in the Introduction to Hydrogen Storage is designed to provide learners with the essential knowledge and understanding required to support safe, legal, and effective hydrogen storage operations across industrial settings. It aims to develop awareness of hydrogen's properties, storage methods, regulatory requirements, site preparation, risk identification, and emergency response procedures. Learners will also gain an understanding of routine monitoring, documentation, and stakeholder communication practices essential for maintaining operational safety and compliance.

Entry Requirements

This qualification is available for learners aged 16+.

Learners must have achieved the SIAS Level 2 Award in the Introduction to Hydrogen Safety or an equivalent qualification prior to enrolling.

Centres should take reasonable steps to ensure learners are able to complete this qualification, for example by carrying out an initial assessment to confirm they can work at the appropriate level.

Recognition of Prior Learning

Recognition of Prior Learning (RPL) is the process of recognising previous, informal or experiential learning which could contribute to a qualification or unit. SIAS supports the use of RPL, and centres must work to the principles included in the SIAS RPL Policy which is available on the SIAS website. This policy should be reviewed alongside this specification and all other relevant SIAS qualification documentation.

Qualification Structure

To be awarded the SIAS Level 2 Award in the Introduction to Hydrogen Storage learners must achieve the following.

- All mandatory units listed in the table below.

Ofqual Unit reference	Unit title	Level	GLH	TQT
H/651/7632	Unit 1: Principles of Safe Hydrogen Storage	2	7	8
J/651/7633	Unit 2: Planning and Preparing Hydrogen Storage Operations	2	3	4
K/651/7634	Unit 3: Managing and Maintaining Hydrogen Storage Conditions	2	5	7
L/651/7635	Unit 4: Monitoring and Responding to Abnormal Conditions in Hydrogen Storage	2	5	6
TOTAL			**20**	**25**

Total Qualification Time (TQT) and Guided Learning Hours (GLH)

Note: Values for Total Qualification Time, including Guided Learning Hours, are calculated by considering the different activities that learners would typically complete to achieve and demonstrate the learning outcomes of a qualification. They do not include activities which are required by a learner's teacher based on the requirements of an individual learner and/or cohort. Individual learners' requirements and individual teaching styles mean there will be variation in the actual time taken to complete a qualification. Values for Total Qualification Time, including Guided Learning, are estimates.

Some examples of activities which can contribute to Total Qualification Time include:

- independent and unsupervised research/learning
- unsupervised compilation of a portfolio of work experience
- unsupervised e-learning
- unsupervised e-assessment practice
- unsupervised coursework
- watching a pre-recorded podcast or webinar
- unsupervised work-based learning
- all Guided Learning.

Some examples of activities which can contribute to Guided Learning include:

- classroom-based learning supervised by a teacher.
- work-based learning supervised by a teacher.
- live webinar or telephone tutorial with a teacher in real time.
- e-learning supervised by a teacher in real time.
- all forms of assessment which take place under the immediate guidance or supervision of a lecturer, supervisor, tutor or other appropriate provider of

education or training, including where the assessment is competence-based and may be turned into a learning opportunity.

Grading

This qualification is graded as a pass/fail.

Delivery and Assessment

Geographical Coverage

This qualification is regulated in England.

Use of Language

All learners must be assessed in English unless the qualification specification states that another language will be accepted.

Progression Opportunities

Upon successfully completing this qualification, learners may wish to progress into further development and training in hydrogen technologies and safety.

Assessment Guidance

All SIAS assessments will be accessible and produce results that are valid, reliable, transparent and fair.

The SIAS Level 2 Award in the Introduction to Hydrogen Storage contains 4 mandatory knowledge units.

Unit No.	Unit title
1	Principles of Safe Hydrogen Storage
2	Planning and Preparing Hydrogen Storage Operations
3	Managing and Maintaining Hydrogen Storage Conditions
4	Monitoring and Responding to Abnormal Conditions in Hydrogen Storage

To achieve the qualification, learners must successfully pass one externally set and marked Multiple Choice Question (MCQ) examination covering the three mandatory units as detailed in the below table:

Component	Set by	Marked by	Assessment Method	Pass Requirement	Grading
Unit 1	SIAS	SIAS	14 MCQs	Minimum 8/14 correct	Pass/Fail
Unit 2	SIAS	SIAS	6 MCQs	Minimum 4/6 correct	Pass/Fail
Unit 3	SIAS	SIAS	8 MCQs	Minimum 5/8 correct	Pass/Fail
Unit 4	SIAS	SIAS	7 MCQs	Minimum 4/7 correct	Pass/Fail

Overall Award	**SIAS**	**SIAS**	**One MCQ examination** (35 questions across all units)	All units must be passed **and** a minimum of 24/35 overall	**Pass/Fail**

Time Allowed: Learners have 60 minutes in total to complete the examination.

The examination is available online through the SIAS secure XAMS platform. The examination can also be paper based. For any queries, please contact us at

info@siasuk.com.

The assessment must be undertaken in controlled conditions. This means:

- learners must complete the assessment unaided
- books and other training aids must not be accessed by the learners.
- all assessments must be invigilated to maintain authenticity and security.

All assessment results will be subject to moderation and monitoring by SIAS to ensure standards are maintained and outcomes remain fair and consistent.

Centres should have systems in place to verify a learner is ready to undertake their assessment.

Centres must ensure that no part of the assessment process, including invigilation or internal quality assurance is conducted by anyone with a personal interest in the assessment outcome.

Learners who do not achieve a pass will be permitted to retake the assessment up to two times. A resit may only be undertaken for an assessment that has previously been failed.

Documentation to support the qualification assessment process can be accessed from the SIAS Pinacle system.

ID requirements

It is the responsibility of the centre to have systems in place to ensure that the person taking an assessment is the person they are claiming to be. All centres are therefore required to ensure that each learner's identification is checked before they undertake the assessment.

SIAS recommends the following as proof of a learner's identity:

- a valid passport (any nationality)
- a photocard driving licence
- another photographic ID card, e.g. employee ID card, student ID card, travel card etc.

Centre Requirements

All SIAS centres must be approved by SIAS to deliver the qualification(s) they wish to offer. This is to ensure centres have the processes and resources in place to deliver the qualification(s). Further information can be found in the SIAS Centre Handbook.

When a centre applies to offer a qualification, they will need to provide evidence that they have sufficient resources and infrastructure in place for delivery of that qualification:

- evidence of staff competence and knowledge
- details of available resources.

Information regarding the induction and continuing professional development must be made available to SIAS by centres through the external quality assurance process.

Tutor/Trainer Requirements

For the SIAS Level 2 Award in the Introduction to Hydrogen Storage, tutors/trainers are required to demonstrate they:

- have relevant occupational knowledge and competence
- hold a recognised education and training qualification or equivalent training experience
- have completed recent, relevant CPD activities for the subject area.

Evidence includes:

- CV and relevant occupational qualifications and experience.
- Up-to-date CPD Record including certification from any courses attended.

SIAS recommends that as best practice for tutors/trainers to hold or be working towards a relevant education and training qualification. These include:

- Level 3 Award in Education and Training or equivalent including Preparing to Teach in the Lifelong Sector (PTLLS), CertEd/PGCE, L4 Certificate in Education and Training, L5 Diploma in Education and Training.

Where this is not the case, SIAS will look at alternative sources of evidence for training competence, such as professional qualifications, relevant work experience or internal training records. For further guidance, please contact us.

Continuing Professional Development (CPD)

Centres are expected to support their staff, ensuring that their subject knowledge remains current and is up to date with best practice.

Quality Assurance Guidance

All SIAS qualifications require centres to have in place a robust mechanism for the quality assurance of training delivery and invigilated assessment arrangements.

External Quality Assurance

External quality assurance will be undertaken by SIAS. Centres will be required to provide documentation and other evidence to support this process upon request. Please refer to our Centre Handbook for further details.

Equality and Diversity

Delivery of SIAS qualifications must comply with equality and diversity legislation. Learners should not experience any barriers to achievement in respect of:

- Age
- Disability
- Gender
- Gender reassignment
- Marriage and civil partnerships
- Pregnancy and maternity
- Race
- Religion and belief
- Sexual orientation.

Reasonable Adjustments

All learners must be treated fairly and equally and be provided with every opportunity to achieve our qualification(s). For more information or guidance, please refer to the SIAS Reasonable Adjustments Policy available on our website.

Health and Safety

SIAS are committed to ensuring the safety and wellbeing of learners. Due to the nature of some of the sectors SIAS work in, there can be a high level of risk which we expect centres to manage effectively. Centres must take appropriate measures to assess and manage these risks and implement procedures so that qualifications are delivered safely, minimising risks to learners and those involved in the assessment process as much as possible. Working environments must comply with all required health and safety standards.

Qualification Content

Unit 1: Principles of Safe Hydrogen Storage

Unit Reference	H/651/7632	
Level	2	
GLH	7	
Aim	The aim of this unit is to equip learners with a foundational understanding of the properties of hydrogen and the principles of safe storage. This includes recognising hazards, safety procedures, access requirements, and appropriate responses to signage and alarms.	
Assessment Methodology	Multiple-choice examination	
Learning Outcomes *The learner will:*	**Assessment Criteria** *The learner can:*	
1. Understand the physical and chemical properties of hydrogen relevant to storage.	1.1	Identify how hydrogen behaves in its different forms.
	1.2	State how physical and chemical properties affect storage requirements.
	1.3	Recognise the key challenges associated with storing hydrogen.
	1.4	Identify common sources of contamination in hydrogen.
2. Understand the safety procedures for hydrogen storage operations.	2.1	Identify relevant legal and regulatory standards for hydrogen storage.
	2.2	Identify key safety requirements before entering a hydrogen storage area.
	2.3	Identify the key safety procedures to follow during hydrogen storage.
	2.4	Identify typical hazards associated with storing hydrogen.
	2.5	Identify the risks associated with storing hydrogen.
	2.6	Identify the personal protective equipment (PPE) required when storing hydrogen.
	2.7	Recognise the role of alarms and monitoring systems used in hydrogen environments.
3. Know how to interpret and respond to signage, alarms, warnings, and emergencies in hydrogen storage.	3.1	Recognise hydrogen hazard signs and labels.
	3.2	Identify the correct emergency response actions in a hydrogen storage area.

Unit 2: Planning and Preparing Hydrogen Storage Operations

Unit Reference	J/651/7633	
Level	2	
GLH	3	
Aim	The aim of this unit is to provide learners with knowledge of how to effectively plan and prepare hydrogen storage operations, including understanding storage systems, site preparation requirements, and maintaining a safe working environment.	
Assessment Methodology	Multiple-choice examination	
Learning Outcomes *The learner will:*	**Assessment Criteria** *The learner can:*	
1. Understand how to plan hydrogen storage operations for different end uses.	1.1	Recognise the advantages and disadvantages of the different storage methods.
	1.2	Recognise the storage options for different hydrogen products and their end uses.
2. Know how to prepare and maintain a hydrogen storage site.	2.1	Recognise how to prepare the storage area in line with legal requirements.
	2.2	Identify how to maintain a clean, safe, and operational storage site.

Unit 3: Managing and Maintaining Hydrogen Storage Conditions

Unit Reference	K/651/7634
Level	2
GLH	5
Aim	The aim of this unit is to provide learners with knowledge of how to manage and maintain safe hydrogen storage conditions, including inspection procedures, equipment checks, stock management, and communication with relevant stakeholders, in line with organisational and legal standards.
Assessment Methodology	Multiple-choice examination

Learning Outcomes *The learner will:*	**Assessment Criteria** *The learner can:*	
1. Know how to maintain storage conditions for hydrogen products.	1.1	Identify the correct methods to maintain safe hydrogen storage conditions.
	1.2	Recognise how hydrogen storage methods vary based on the quantity of hydrogen stored.
	1.3	Recognise the principles of stock rotation in hydrogen storage.
2. Understand how to inspect and check hydrogen storage facilities.	2.1	Identify the safety checks required on hydrogen storage equipment.
	2.2	Select how to confirm and record the status of equipment in storage.
3. Understand how to complete and store hydrogen storage documentation.	3.1	Identify the required records and reports used in hydrogen storage, including documentation related to critical safety information.
	3.2	Recognise what information should be included in hydrogen storage documentation.

Unit 4: Monitoring and Responding to Abnormal Conditions in Hydrogen Storage

Unit Reference	L/651/7635		
Level	2		
GLH	5		
Aim	The aim of this unit is to equip learners with the knowledge and understanding required to recognise, report, and respond to abnormal conditions in hydrogen storage systems, including appropriate restoration procedures, accurate documentation of defects or non-conformities, and effective stakeholder communication, in line with operational procedures and legal requirements.		
Assessment Methodology	Multiple-choice question examination		
Learning Outcomes *The learner will:*		**Assessment Criteria** *The learner can:*	
1. Know how to identify and report deviations from normal hydrogen storage conditions.		1.1	Identify signs of abnormal conditions in hydrogen storage.
		1.2	Identify the correct methods for reporting abnormal conditions.
2. Understand how to restore abnormal hydrogen storage conditions.		2.1	Select the correct actions to restore abnormal hydrogen storage to standard conditions.
3. Know how to document and record defects or non-conformities in hydrogen storage operations.		3.1	Recognise the information that must be recorded when reporting defects.
		3.2	Identify the correct documentation used to report non-conformity.

Resources

SIAS provides the following additional resources for this qualification:

- Centre Qualification Guide
- Qualification Learner Logbook
- Externally Set Assessments.

Appendix 1: Specimen Assessment

Specification for the SIAS-set, SIAS-marked Multiple Choice Question Examination.

Number of Questions	**35 questions covering 4 units.** Unit 1: 14 questions Unit 2: 6 questions Unit 3: 8 questions Unit 4: 7 questions
Time Allowed	60 minutes
Pass Mark Requirements	Unit 1: A minimum of 8 correct answers out of 14 Unit 2: A minimum of 4 correct answers out of 6 Unit 3: A minimum of 5 correct answers out of 8 Unit 4: A minimum of 4 correct answers out of 7 **Overall pass mark: 24 out of 35.**
Grading	Pass or Fail

Sample questions:

Sample Question 1
What is a potential issue with storing hydrogen in metal containers?
A. Hydrogen absorption can weaken the metal.
B. Hydrogen reacts with the metal to form water.
C. Hydrogen increases the temperature of the metal.
D. Hydrogen solidifies within the container.

Sample Question 2
What is the purpose of safe isolation in hydrogen storage areas?
A. To ensure equipment is de-energised and separated from energy sources.
B. To prevent unauthorised personnel from entering.
C. To maintain a record of all safety incidents.
D. To reduce the risk of contamination.

Further Information

For information about SIAS and general enquiries please see our website: www.siasuk.com or contact:

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