

SIAS Qualification Specification

SIAS Level 2 Diploma in Bulk Storage Operations

Qualification Number: 610/6562/6

Operational Start Date: 15th October 2025

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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	14/10/2025	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 Diploma in Bulk Storage Operations
Qualification Number	610/6562/6
Credit Value	42
Guided Learning Hours (GLH)	322
Total Qualification Time (TQT)	419
Assessment Methods	Centre Devised Assessment
Operational Start Date	15 th October 2025
Review Date	14 th October 2028
Operational End Date	-
Certification End Date	-
Regulation	This qualification is regulated by Ofqual

Qualification Objective

The aim is to provide learners with the foundational knowledge, skills, and understanding required to work safely, efficiently, and effectively in the bulk storage industry. This qualification equips learners with a comprehensive understanding of the principles, systems, equipment, and operational practices involved in bulk storage operations, while emphasising the importance of health, safety, environmental compliance, communication, teamwork, and emergency response.

The qualification is suitable for individuals seeking to start a career in bulk storage operations, as well as those already employed in the sector who wish to enhance their knowledge and skills to progress in their roles. This diploma supports the development of competent and confident professionals who can contribute to the safe and efficient operations of bulk storage facilities in compliance with industry standards and regulatory requirements.

The SIAS Level 2 Diploma in Bulk Storage Operations has been developed by SIAS in partnership with Reynolds Training and the Tank Storage Association.

Entry Requirements

This qualification is available for learners aged 16+.

There are no formal entry requirements for the SIAS Level 2 Diploma in Bulk Storage Operations. However, learners should have a basic understanding of English and mathematics.

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 guide and all other relevant SIAS qualification documentation.

Qualification Structure

To achieve the SIAS Level 2 Diploma in Bulk Storage Operations learners must achieve all mandatory units contained in the table below:

Ofqual Unit reference	Unit title	Level	Credit	GLH	TQT
A/651/8061	Introduction to Bulk Storage Operations	2	3	18	25
D/651/8062	Principles of Health, Safety and the Environment in Bulk Storage Operations	2	4	33	43
F/651/8063	Practice of Health, Safety and the Environment in Bulk Storage Operations	2	2	15	24
H/651/8064	Principles of Bulk Storage Systems and Equipment	2	3	27	34
J/651/8065	Identification of Bulk Storage Systems and Equipment	2	2	10	15
K/651/8066	Principles of Bulk Storage Import and Export Operations	2	8	67	82
L/651/8067	Practice of Bulk Storage Import and Export Operations	2	5	34	46
M/651/8068	Principles of Maintaining Product Storage Conditions	2	3	27	35
R/651/8069	Practice of Maintaining Product Storage Conditions	2	3	23	28
A/651/8070	Principles of Communication and Teamwork within Bulk Storage Operations	2	3	22	30
D/651/8071	Communication and Teamwork Practices within Bulk Storage Operations	2	2	11	15
F/651/8072	Principles of Emergency Response in Bulk Storage Operations	2	3	25	30
H/651/8073	Practice of Emergency Response in Bulk Storage Operations	2	1	10	12
TOTAL			42	322	419

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
- 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 assessed 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

Following completion of this qualification, learners will be able to gain employment in roles such as bulk storage operator or terminal operator. They will also be able to progress into further qualifications at level 3 in bulk storage, process operations or related fields.

Assessment Guidance

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

The SIAS Level 2 Diploma in Bulk Storage Operations is internally assessed and marked by the centre.

To achieve the qualification, learners must successfully pass the 13 mandatory units listed below:

Component	Set by	Marked by	Suggested assessment method(s)	Grading
Unit 1: Introduction to Bulk Storage Operations	Centre	Centre	- Multiple-choice question examination - Short answer questions - Workbook	Pass/Fail
Unit 2: Principles of Health, Safety and the Environment in Bulk Storage Operations	Centre	Centre	- Multiple-choice question examination - Short answer questions - Workbook	Pass/Fail
Unit 3: Practice of Health, Safety and the Environment in Bulk Storage Operations	Centre	Centre	Portfolio of evidence	Pass/Fail
Unit 4: Principles of Bulk Storage Systems	Centre	Centre	- Multiple-choice question examination - Short answer questions	Pass/Fail

			• Workbook	
Unit 5: Identification of Bulk Storage Systems and Equipment	Centre	Centre	• Portfolio of evidence	Pass/Fail
Unit 6: Principles of Bulk Storage Import and Export Operations	Centre	Centre	• Short answer questions • Workbook • Project	Pass/Fail
Unit 7: Practice of Bulk Storage Import and Export Operations	Centre	Centre	• Portfolio of evidence	Pass/Fail
Unit 8: Principles of Maintaining Product Storage Conditions	Centre	Centre	• Short answer questions • Workbook • Project • Presentation and questioning	Pass/Fail
Unit 9: Practice of Maintaining Product Storage Conditions	Centre	Centre	• Portfolio of evidence	Pass/Fail
Unit 10: Principles of Communication and Teamwork within Bulk Storage Operations	Centre	Centre	• Short answer questions • Workbook • Project • Presentation and questioning	Pass/Fail
Unit 11: Communication and Teamwork Practices within Bulk Storage Operations	Centre	Centre	• Portfolio of evidence	Pass/Fail
Unit 12: Principles of Emergency Response in Bulk Storage Operations	Centre	Centre	• Multiple-choice question examination • Short answer questions • Workbook • Project • Presentation and questioning	Pass/Fail

Unit 13: Practice of Emergency Response in Bulk Storage Operations	Centre	Centre	• Portfolio of evidence	Pass/Fail
Overall Award				Pass/Fail

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 Diploma in Bulk Storage Operations tutors/trainers are required to demonstrate they:

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

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.

Assessor Requirements

For the SIAS Level 2 Diploma in Bulk Storage Operations assessors are required to demonstrate they:

- have relevant occupational knowledge and competence.
- hold or are working towards a recognised assessor qualification or have equivalent assessing 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 assessors to hold or be working towards a relevant assessor qualification. This includes:

- Level 3 Award in Assessing Vocationally Related Achievement or equivalent including A1, Award D32 and D33, L3 Award in Assessing Competence in the Work Environment, L3 Certificate in Assessing Vocational Achievement.

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

Internal Quality Assurance Requirements

For the SIAS Level 2 Diploma in Bulk Storage Operations IQAs are required to demonstrate they:

- hold or are working towards a recognised internal quality assurance qualification or have equivalent internal quality assurance experience.
- have completed recent, relevant CPD activities.

Evidence includes:

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

SIAS recommends as best practice that IQAs hold or are working towards a relevant IQA qualification. This includes:

- Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practice or equivalent including D34 or V1.

Where this is not the case, SIAS will look at alternative sources of evidence for IQA 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, minimizing 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: Introduction to Bulk Storage Operations

Unit Reference	A/651/8061	
Level	2	
Credit Value	3	
GLH	18	
Aim	This unit introduces the concept of bulk storage and its role in supply chains, national supply lines and energy transition. Learners will explore the types of materials stored in bulk and the different terminal types. The unit also highlights industry applications, emergency response roles, and challenges related to global logistics and sustainability.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes The learner will:	Assessment Criteria The learner can:	
1. Know the role and concept of bulk storage operations in society.	1.1	Define the term 'bulk storage'.
	1.2	Identify characteristics that distinguish bulk storage from other forms of storage.
	1.3	State the purpose of bulk storage operations in supply chain management.
	1.4	Identify industries that use bulk storage.
2. Understand the importance of bulk storage operations.	2.1	Identify the role of bulk storage terminals in supporting national supply lines.
	2.2	Identify why bulk storage operations fall under Critical National Infrastructure (CNI).
	2.3	Define the term 'resilience' in the context of bulk storage operations.
	2.4	State the importance of resilience in bulk storage operations.
	2.5	Define the term 'security of supply' in the context of bulk storage operations.
	2.6	Recognise the role of bulk storage sites in disaster recovery and emergency supply management at the national level.
	2.7	Identify the key challenges and risks associated with global supply lines.

3. Know the different roles found within the bulk storage industry.	3.1	Identify common roles found on a bulk storage terminal.
4. Know the types of material that can be stored in bulk storage terminals.	4.1	Identify the three main categories of materials stored in bulk.
	4.2	Identify examples of liquid materials commonly stored.
	4.3	Identify examples of solid materials stored in bulk.
	4.4	Identify examples of gaseous materials stored in bulk.
5. Know the range of bulk storage terminal types.	5.1	Define what is meant by a bulk storage terminal.
	5.2	State the different types of terminal ownership.
	5.3	Recognise the role of different types of terminal locations.
	5.4	Identify the main types of bulk storage terminal.
	5.5	Outline the role of multi-modal terminals.
6. Know the concept of 'energy' transition and its relevance to the bulk storage sector.	6.1	Define the term 'energy transition'.
	6.2	Recognise the role of bulk storage in supporting energy transition.
	6.3	Identify the challenges bulk storage operations face during the energy transition.
7. Know the fundamentals of future fuels and their implications for bulk storage operations.	7.1	State a variety of future fuels.
	7.2	State the environmental benefits of future fuels.
	7.3	Identify the changes required in infrastructure to support future fuels.

Unit 2: Principles of Health, Safety and the Environment in Bulk Storage Operations

Unit Reference	D/651/8062	
Level	2	
Credit Value	4	
GLH	33	
Aim	This unit provides an overview of key health, safety, and environmental legislation relevant to bulk storage operations, along with the legal responsibilities of employers and employees. It covers fundamental risk management concepts, including hazards, risk assessments, HAZOP studies, standard operating procedures, and the Permit to Work system. Learners will also understand the importance of Management of Change in maintaining safety during operational or process changes, and the consequences of failing to follow established procedures.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes The learner will:	Assessment Criteria The learner can:	
1. Understand relevant health and safety regulation in bulk storage operations.	1.1	Identify the regulators with oversight of bulk storage operations.
	1.2	State the role of regulators in bulk storage operations.
	1.3	Recognise the importance of statutory regulation, regulatory guidance and industry standards in bulk storage operations.
	1.4	Identify key industry standards and regulations governing bulk storage operations.
	1.5	State the responsibilities of employers and employees under legislation governing bulk storage operations.
2. Know an organisation and individuals' environmental responsibilities in bulk storage operations.	2.1	Identify key requirements of environmental legislation relevant to bulk storage operations.
	2.2	Identify the responsibilities of organisations in complying with environmental legislation.
	2.3	Identify an individual's responsibilities in complying with environmental legislation.
3. Know the fundamentals of	3.1	Identify dangers of electricity.
	3.2	Recognise how electrical energy can act as an ignition source for:

electrical safety in bulk storage operations.		• flammable vapours • gases • dust.
	3.3	Identify the role of switch rooms in managing electrical safety.
4. Understand the principles of process safety and how they are applied to control risks and maintain safe operations in bulk storage environments.	4.1	State the definition of process safety.
	4.2	Identify process safety barriers.
	4.3	Identify how the principles of process safety align with occupational safety.
5. Know the fundamentals of physical and digital site security in bulk storage operations.	5.1	Recognise why site security is important.
	5.2	Identify the purpose of the International Ship and Port Facility Security (ISPS) code.
	5.3	Identify key elements of the ISPS code.
	5.4	Identify key elements of physical site security.
	5.5	Identify key elements of digital site security.
	5.6	State the purpose of the data protection regulations.
	5.7	Identify examples of personal data that may be encountered in bulk storage operations.
	5.8	Identify the six key principles of the data protection regulations.
	5.9	Identify actions individuals can take to protect personal data.
	5.10	State the actions an individual can take to ensure their personal security.
6. Know how and when to use personal protective equipment (PPE) to work safely during bulk storage operations.	6.1	Identify common types of personal protective equipment.
	6.2	State the purpose of common types of personal protective equipment.
	6.3	Outline why wearing the appropriate personal protective equipment is important.
	6.4	State the importance of maintaining and storing personal protective equipment correctly.
7. Know the principles of risk assessments and	7.1	Define the terms 'hazard' and 'risk'.
	7.2	Identify the importance of risk assessments.

hazard and operability (HAZOP) studies.	7.3	Outline the key steps involved in conducting risk assessments.
	7.4	Define what a hazard and operability study (HAZOP) is.
	7.5	Identify the key objectives of a HAZOP.
	7.6	Outline the key steps involved in conducting a HAZOP.
	7.7	Identify key team members of a well-structured HAZOP Team.
8. Know the purpose of permit to work (PTW) systems.	8.1	Recognise the purpose of the permit to work system.
	8.2	Identify activities that typically require permits to work.
	8.3	Identify consequences of failing to implement or follow a permit to work system.
9. Know the purpose of management of change (MoC) in ensuring safe operations.	9.1	Define 'change' in the management of change.
	9.2	Outline the purpose of management of change.
	9.3	Identify types of change that require the application of change management procedures.
	9.4	Identify consequences of failing to implement management of change effectively.
10. Understand the importance of industry cross-collaborative groups in maintaining high standards of health and safety in the bulk storage sector.	10.1	State the importance of industry cross-collaborative groups that help inform health and safety.

Unit 3: Practice of Health, Safety and Environment in Bulk Storage Operations

Unit Reference	F/651/8063	
Level	2	
Credit Value	2	
GLH	15	
Aim	This unit provides learners with the knowledge and practical skills required to ensure safe and compliant bulk storage operations in line with health and safety, environmental, and electrical safety regulations. The unit also focuses on applying effective site security measures, both physical and digital, as well as the correct selection and use of personal protective equipment (PPE) to promote safe working practices. Additionally, learners will develop the ability to identify, access, and apply risk assessments to maintain a safe and secure working environment.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes	Assessment Criteria	
The learner will:	The learner can:	
1. Be able to follow relevant health and safety regulations in bulk storage operations.	1.1	Interpret relevant health and safety regulations applicable to bulk storage operations.
	1.2	Locate organisational procedures relevant to health and safety.
	1.3	Comply with the requirements of relevant health and safety regulations applicable to bulk storage operations.
	1.4	Report non-compliances with site policies, procedures, industry standards or regulations.
2. Be able to follow relevant environmental regulations in bulk storage operations.	2.1	Interpret relevant environmental regulations applicable to bulk storage operations.
	2.2	Implement operational practices that meet the requirements of environmental legislation.
3. Be able to apply knowledge of electrical safety in	3.1	Demonstrate the correct procedure for safely responding to an identified electrical fault or hazard in a bulk storage operation.

bulk storage operations.	3.2	Perform a safety check of a switch room, ensuring that equipment, signage and access controls align with organisational and regulatory requirements.
4. Be able to apply knowledge of physical and digital site security in bulk storage operations.	4.1	Identify key elements of physical and digital security at a bulk storage facility.
	4.2	Adhere to the principle of maintaining physical security.
	4.3	Report physical and digital security vulnerabilities.
5. Be able to correctly select and use personal protective equipment (PPE) to ensure safe working practices during bulk storage operations.	5.1	Demonstrate the correct use of PPE to ensure safety during bulk storage activities.
	5.2	Demonstrate the procedures for inspecting, maintaining and correctly disposing of PPE to maintain compliance with safety standards.
6. Be able to identify, access and apply risk assessments to maintain a safe working environment.	6.1	Locate and access relevant risk assessments on-site.
	6.2	Conduct a dynamic risk assessment to identify potential hazards, evaluate associated risks and recommend appropriate control measures.

Unit 4: Principles of Bulk Storage Systems and Equipment

Unit Reference	H/651/8064	
Level	2	
Credit Value	3	
GLH	27	
Aim	This unit provides learners with a foundational understanding of the key systems and equipment used in bulk storage operations. Learners will explore the principles of system layout and site infrastructure, gain knowledge of common equipment and tank types, and develop an understanding of basic process control and safety instrumented systems. The unit also introduces ancillary systems and the equipment required for specific operational tasks, preparing learners for safe and effective work within a bulk storage environment.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes The learner will:	Assessment Criteria The learner can:	
1. Understand the principles of system layout and site infrastructure.	1.1	Identify key assets of bulk storage terminals.
	1.2	Identify the purpose of hazardous area classification in relation to the specific zones.
	1.3	State the purpose of using piping and instrumentation diagrams.
	1.4	Identify key components of piping and instrumentation diagrams.
	1.5	Recognise the importance of piping and instrumentation diagrams.
2. Know common equipment used in bulk storage operations.	2.1	Identify common equipment used in bulk storage operations.
	2.2	State the purpose of common equipment used in bulk storage operations.
3. Understand the principles of basic process control systems (BPCS) and safety instrumented systems (SIS).	3.1	Identify the purpose of basic process control systems.
	3.2	Identify components of a basic process control system.
	3.3	Identify benefits of using basic process control systems.

	3.4	Identify limitations of using basic process control systems.
	3.5	State the purpose of safety instrumented systems.
	3.6	Define the term 'safety integrity level' (SIL).
4. Know the different types of tanks used to store liquids and gases.	4.1	Identify different types of tanks used for storing liquids.
	4.2	Identify different types of tanks used for storing gases.
5. Know the fundamental principles of other ancillary systems used in bulk storage operations.	5.1	State the purpose of vapour recovery units.
	5.2	Identify the risks associated with vapour recovery units.
	5.3	State the purpose of boiler operations.
	5.4	Identify the risks associated with steam.
	5.5	State the importance of product heating systems.
	5.6	Identify the risks associated with product heating systems.
	5.7	State the purpose of nitrogen systems.
	5.8	Identify the risks associated with nitrogen use.
	5.9	State the purpose of bunds.
	5.10	Identify the risks associated with bunds.
	5.11	Identify different applications of bunds.
	5.12	State the purpose of interceptors and wastewater treatment systems.
	5.13	Identify the risks associated with interceptors and wastewater treatment systems.
	5.14	State the purpose of air compressors.
	5.15	Identify the risks associated with air compressors.
	5.16	Recognise the importance of emergency air and nitrogen.
	5.17	State the purpose of Uninterrupted Power Supply (UPS) Systems
	5.18	Identify the key components of a UPS System
	5.19	Identify the risks associated with UPS systems

Unit 5: Identification of Bulk Storage Systems and Equipment

Unit Reference	J/651/8065	
Level	2	
Credit Value	2	
GLH	10	
Aim	This unit equips learners with the knowledge required to understand system layouts and site infrastructure critical to bulk storage operations. Learners will also develop the ability to identify and recognise ancillary systems that support and enhance the efficiency and safety of bulk storage processes.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes	Assessment Criteria	
The learner will:	The learner can:	
1. Be able to identify the layout, key assets, equipment, and storage tanks within a bulk storage facility.	1.1	Locate key assets of bulk storage facilities on site.
	1.2	Interpret piping and instrumentation diagrams to explain the flow, control and operation of processes within a key system.
	1.3	Recognise hazardous zoned areas at a bulk storage facility.
	1.4	Locate common equipment used in bulk storage operations.
	1.5	Locate different types of tanks used for storing liquids and gases.
2. Be able to recognise other ancillary systems used in bulk storage operations.	2.1	Identify key components of ancillary equipment at a bulk storage facility.
	2.2	Carry out routine checks on at least two ancillary systems.
	2.3	Identify emergency back-up systems.

Unit 6: Principles of Bulk Storage Import and Export Operations

Unit Reference	K/651/8066	
Level	2	
Credit Value	8	
GLH	67	
Aim	This unit provides learners with the foundational knowledge required to understand and safely manage the import, export, transfer, storage, and monitoring of products in bulk storage operations. Learners will explore the associated hazards, principles of safe product handling, and the use of monitoring systems and automation. The unit will also cover key processes such as blending, the use of additives, and the importance of product identification and segregation.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes The learner will:	Assessment Criteria The learner can:	
1. Know the methods and systems used to transfer products.	1.1	Define what is meant by product transfer.
	1.2	Describe the different modes of product transfer.
2. Know hazards associated with the import and export of bulk storage products.	2.1	Identify hazards associated with product transfer.
	2.2	Describe the health and safety risks of hydrogen sulphide and Legionella during bulk storage operations.
	2.3	State the actions to take when a potential hazard or unsafe condition is identified.
	2.4	Describe the principles of prevention and mitigation within transfer operations.
3. Know the importance of standard operating procedures (SOPs).	3.1	State the purpose of standard operating procedures.
	3.2	Identify different types of standard operating procedure.
	3.3	Identify the documents that would form part of robust management procedures.
4. Know the principles of safe product transfer.	4.1	Outline the key pre-transfer checks required before conducting product transfer.
	4.2	State the purpose of line-up and isolation checks prior to transfer.
	4.3	Outline the safety precautions to follow during product transfer.
	4.4	Identify the indicators of abnormal conditions during transfer.

	4.5	Describe the actions to be taken if abnormal conditions are detected.
	4.6	Explain the importance of monitoring transfer operations.
	4.7	Identify key post-transfer checks to be carried out.
	4.8	Outline the actions required to safely disconnect and stow equipment and restore it to a safe state.
5. Know how to carry out safe and secure connection and disconnection of product transfer systems.	5.1	Identify the tools and equipment required for safe and effective connection and disconnection of lines.
	5.2	Describe the safety protocols to be followed during connection and disconnection.
	5.3	State the purpose of joints in connection and disconnection operations.
	5.4	Identify different types of joints commonly used.
	5.5	Describe the importance of joint integrity.
	5.6	Describe the role of bolting in securing connections.
	5.7	Describe the risks of improper bolting.
	5.8	Identify the types of connectors commonly used in pipelines.
	5.9	Describe the purpose of a variety of connector types.
6. Know the fundamental principles of importing and exporting in bulk storage operations.	6.1	Describe the purpose of import and export operations.
	6.2	Identify the stakeholders involved in import and export operations.
	6.3	Identify the key steps in effectively managing the import and export of products.
	6.4	Outline import and export pre-arrival actions.
	6.5	Outline import and export arrival actions.
	6.6	Outline import and export commencement actions.
	6.7	Describe how to undertake monitoring activities.
	6.8	Outline import and export completion actions.
	6.9	Outline import and export post-completion actions.
	6.10	Explain the importance of record keeping as part of the import and export process.
7. Know the fundamental principles of safely and effectively managing the	7.1	Describe different methods of moving bulk storage products within a facility.
	7.2	Identify key parameters that should be monitored during storage.
	7.3	Describe the importance of monitoring products in storage.

movement, storage and monitoring of products in a bulk storage facility.	7.4	Describe the importance of tank and system integrity in maintaining product quality, operational safety and environmental protection.
	7.5	Describe routine maintenance tasks for ensuring tank and system integrity.
	7.6	Identify common causes of tank and system failure.
	7.7	Describe the importance of atmosphere control in product storage.
	7.8	Identify the key parameters of atmosphere control.
	7.9	Describe the risks associated with uncontrolled atmospheres.
	7.10	Describe the importance of venting systems in atmosphere control.
	7.11	Describe the concept of static electricity.
	7.12	Identify the risks associated with static electricity.
	7.13	Identify measures to control static electricity.
	7.14	Describe the role of static dissipators and additives in controlling static electricity.
8. Know the fundamental principles of blending and the use of additives in bulk storage operations.	8.1	State the purpose of blending in bulk storage operations.
	8.2	Identify the key principles of blending operations.
	8.3	Identify different types of blending equipment.
	8.4	Outline the key steps to be performed when blending.
	8.5	Identify common issues when blending.
	8.6	Describe the purpose of additives in bulk products.
	8.7	Outline the key steps to be performed when incorporating additives.
	8.8	Identify risks of improper additive incorporation.
9. Know the importance of product identification and segregation in bulk storage operations.	9.1	Define product identification in the context of bulk storage operations.
	9.2	Define segregation in the context of bulk storage operations.
	9.3	Describe the consequences of improper product identification and segregation.
10. Know how monitoring systems are used in bulk storage operations.	10.1	State the purpose of monitoring systems in bulk storage operations.
	10.2	Describe the importance of monitoring systems in bulk storage operations.
	10.3	Identify key features of monitoring systems.

	10.4	Identify different types of monitoring systems used in bulk storage operations.
11. Know how automation is used in bulk storage operations.	11.1	Define the term 'automation' in the context of bulk storage operations.
	11.2	Identify the key components of an automation system used in bulk storage operations.
	11.3	Identify different types of automation used in bulk storage operations.
	11.4	Identify the benefits and risks of using automation in the bulk storage industry.

Unit 7: Practice of Bulk Storage Import and Export Operations

Unit Reference	L/651/8067	
Level	2	
Credit Value	5	
GLH	34	
Aim	This unit provides learners with the knowledge and skills required to safely and efficiently manage the operations involved in the import, export, storage, and monitoring of products in a bulk storage facility. Learners will be able to assess hazards, follow safe transfer procedures, and manage the movement and storage of products effectively. Additionally, the unit enables learners to blend products and apply additives in line with operational and safety standards, ensuring high levels of accuracy and compliance throughout bulk storage operations.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes	Assessment Criteria	
The learner will:	The learner can:	
1. Be able to assess hazards associated with the import and export of bulk storage products.	1.1	Assess equipment before and after the import of products to identify, report and mitigate hazards and associated risks.
	1.2	Assess equipment before and after the export of products to identify, report and mitigate hazards and associated risks.
2. Be able to undertake the import, export, storage and monitoring of products in a bulk storage facility.	2.1	Carry out pre-arrival actions for product import and export.
	2.2	Carry out arrival actions relevant to product import and export.
	2.3	Carry out import and export commencement actions.
	2.4	Undertake monitoring activities relevant to the movement method.
	2.5	Carry out import and export completion actions.
	2.6	Carry out import and export post-completion actions.

3. Be able to follow safe transfer procedures when importing and exporting products.	3.1	Follow standard operating procedures when transferring product.
	3.2	Recognise abnormal conditions when transferring product.
	3.3	Follow standard operating procedures when abnormal conditions are detected while transferring product.
4. Be able to safely and effectively manage the movement, storage and monitoring of products in a bulk storage facility.	4.1	Monitor products during storage to ensure key factors are maintained within operational parameters.
	4.2	Take corrective action if key factors deviate from operational parameters.
	4.3	Carry out routine maintenance tasks for ensuring tank and system integrity.
5. Be able to blend products and use additives in bulk storage operations.	5.1	Prepare blending equipment to ensure it is operational safe for use.
	5.2	Select and verify the correct products and additives required for the blending process.
	5.3	Measure and mix products and additives accurately according to blending instructions.
	5.4	Monitor the blending process to ensure that all parameters remain within specified limits.
	5.5	Take corrective actions to respond to any deviations or issues during the blending process.

Unit 8: Principles of Maintaining Product Storage Conditions

Unit Reference	M/651/8068	
Level	2	
Credit Value	3	
GLH	27	
Aim	This unit covers the importance of maintaining product quality, ensuring compliance with industry standards and operational efficiency. Learners will explore the purposes and methods of tank dipping and sampling, as well as the procedures for water draw-off to prevent contamination and maintain storage integrity. The unit also introduces the principles of stock accounting and control, enabling learners to understand accurate inventory management and compliance with regulatory requirements.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes The learner will:	Assessment Criteria The learner can:	
1. Know the fundamental principles of maintaining product quality.	1.1	Describe the importance of ensuring product conditions must be kept within limits.
	1.2	State the importance of product testing.
	1.3	Identify the product properties that are tested for.
	1.4	Describe consequences of products not meeting quality requirements.
2. Know the purposes and methods of tank dipping and sampling used in bulk storage operations.	2.1	Describe the purpose and importance of tank dipping.
	2.2	Identify the equipment used in tank dipping.
	2.3	Outline the procedures for performing tank dipping.
	2.4	Identify factors that affect the accuracy of tank dipping.
	2.5	Describe the limitations of tank dipping.
	2.6	Identify different sampling techniques.
	2.7	Outline the hazards of product sampling.
	2.8	Describe the importance of following proper sampling procedures.
3. Know the principles of water draw-off in bulk storage operations.	3.1	State the purpose of water draw-off.
	3.2	Identify key equipment used in water draw-off procedures.
	3.3	Identify conditions for conducting water draw-off procedures.

	3.4	Describe the procedure for detecting and monitoring water in storage tanks.
	3.5	Outline the key steps for performing water draw-off safely.
	3.6	Describe the consequences of failing to perform water draw-off.
	3.7	Describe environmental considerations when performing water draw-off.
4. Know the principles of stock accounting and control in bulk storage operations.	4.1	Define the term stock reconciliation.
	4.2	Identify the importance of stock reconciliation in accounting for product movement.
	4.3	Identify common causes of discrepancies when completing stock reconciliation.
	4.4	Define the term meter proving.
	4.5	Describe the importance of accurate metering.
	4.6	Define the term bonded storage.
	4.7	Describe the requirements for operating bonded storage facilities.
	4.8	Describe the regulatory responsibilities of customs authorities in monitoring stock movement and taxation.
	4.9	Identify the consequences of non-compliance with custom authority regulations.

Unit 9: Practice of Maintaining Product Storage Conditions

Unit Reference	R/651/8069	
Level	2	
Credit Value	3	
GLH	23	
Aim	This unit develops the practical skills and knowledge required to perform key operational tasks in bulk storage facilities. Learners will be able to carry out a variety of tank dipping and sampling techniques, effectively perform water draw-off procedures, and ensure accurate stock reconciliation. The unit also focuses on investigating discrepancies and maintaining the calibration of equipment to ensure operational accuracy and compliance with industry standards.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes	Assessment Criteria	
The learner will:	The learner can:	
1. Be able to successfully use a variety of tank dipping and sampling techniques.	1.1	Select and inspect the appropriate equipment for tank dipping based on the type of product, tank design and operational requirements.
	1.2	Demonstrate the correct use of tank dipping and gauging techniques to measure product levels accurately.
	1.3	Select and inspect the appropriate equipment for sampling and testing based on the type of product, tank design and operational requirements.
	1.4	Perform sampling techniques to obtain representative product samples.
	1.5	Record and document tank dipping measurements and sampling techniques accurately.
	1.6	Check equipment is calibrated.
2. Be able to successfully perform water draw-off in bulk storage operations.	2.1	Select and inspect the necessary equipment or systems for water draw-off.
	2.2	Identify the appropriate tank and confirm the presence of water using appropriate techniques.
	2.3	Perform the water draw-off process safely and efficiently, in line with standard operating procedures.

	2.4	Monitor the draw-off process to prevent contamination, spillage or overdraw.
	2.5	Document the water draw-off process.
3. Be able to perform accurate stock reconciliation, investigate discrepancies and ensure the calibration of equipment to maintain operational accuracy.	3.1	Perform a stock reconciliation.
	3.2	Investigate potential causes of discrepancies during stock reconciliation.

Unit 10: Principles of Communication and Teamwork within Bulk Storage Operations

Unit Reference	A/651/8070	
Level	2	
Credit Value	3	
GLH	22	
Aim	In this unit, learners will explore the importance of effective communication, the use of various communication methods, and the critical role of handovers in maintaining operational continuity and safety. The unit also covers the principles of effective teamwork, the promotion of equality, diversity, and inclusion in the workplace, and the purpose and principles of the General Data Protection Regulations (GDPR) to ensure compliance with data protection laws.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes The learner will:	Assessment Criteria The learner can:	
1. Know the importance of effective communication in ensuring safe and efficient operations.	1.1	Describe the importance of effective communication.
	1.2	Describe the consequences of poor communication.
	1.3	Identify common barriers to effective communication.
	1.4	Describe strategies to overcome barriers to communication.
2. Understand the use of different communication methods used in bulk storage operations.	2.1	Identify different types of communication used.
	2.2	Describe the use of two-way radios in bulk storage operations.
	2.3	Identify the correct words associated with each letter of the phonetic alphabet.
	2.4	State advantages of using the phonetic alphabet within communications.
	2.5	Describe the importance of clarity and brevity in radio communications.
	2.6	Explain the purpose of standard radio protocols.
	2.7	Describe the purpose of prioritising urgent messages.
	2.8	Identify common barriers to effective radio communication.
3. Know the purpose and importance of	3.1	Describe what is meant by 'handover' in bulk storage operations.

handovers in bulk storage operations.	3.2	Identify the purpose of handover operations.
	3.3	Identify the key information that should be included in a handover.
	3.4	Describe potential consequences of an ineffective handover.
	3.5	Describe the importance of documentation in the handover process.
4. Know the principles of effective teamwork in bulk storage operations.	4.1	Describe the importance of teamwork in bulk storage operations.
	4.2	Identify the characteristics of an effective team.
	4.3	Describe the importance of having clearly assigned roles and responsibilities for each team member.
	4.4	Describe the purpose of shift working in bulk storage operations.
	4.5	Identify how shift patterns can influence team dynamics, communication and performance.
	4.6	Describe potential challenges of working in shifts.
5. Understand the principles of equity, diversity and inclusion.	5.1	Define the following terms: • Equity • Diversity • Inclusion
	5.2	Identify what is meant by direct and indirect discrimination.
	5.3	Describe how to address and report incidents of discrimination, harassment, or exclusion.
	5.4	Identify legislation that protects individuals from discrimination.

Unit 11: Communication and Teamwork Practices within Bulk Storage Operations

Unit Reference	D/651/8071	
Level	2	
Credit Value	2	
GLH	11	
Aim	This unit develops the communication and teamwork skills essential for efficient and safe bulk storage operations. Learners will be able to effectively communicate with colleagues and stakeholders, perform clear and accurate handovers, and work collaboratively as part of a team to ensure smooth and coordinated operational processes.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes	Assessment Criteria	
The learner will:	The learner can:	
1. Be able to effectively communicate during bulk storage operations.	1.1	Communicate clearly and accurately with team members during bulk storage operations.
	1.2	Accurately complete and share written documentation.
	1.3	Use appropriate communication tools to relay critical information during bulk storage operations.
	1.4	Demonstrate the correct use of a two-way radio.
2. Be able to perform effective handovers in bulk storage operations.	2.1	Accurately document and communicate the status of ongoing tasks and equipment condition during handovers.
	2.2	Relay outstanding issues, hazards or incidents to the incoming team during handovers.
3. Be able to work effectively as part of a team in bulk storage operations.	3.1	Collaborate with team members to achieve shared objectives.
	3.2	Contribute to problem-solving and decision-making processes within a team.
	3.3	Respond positively to feedback from team members and supervisors to improve performance.
	3.4	Adhere to assigned role and responsibilities.
	3.5	Demonstrate how to address and report incidents of discrimination, harassment or exclusion.

Unit 12: Principles of Emergency Response in Bulk Storage Operations

Unit Reference	F/651/8072	
Level	2	
Credit Value	3	
GLH	25	
Aim	This unit provides learners with a comprehensive understanding of emergency response in bulk storage operations. Learners will explore the variety of emergency equipment used, the significance of mutual aid agreements, and the types, causes, and responses to workplace incidents. The unit also focuses on the roles, responsibilities, reporting procedures, alarm systems, and the critical importance of learning from past incidents to enhance safety and prevent future occurrences.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes The learner will:	Assessment Criteria The learner can:	
1. Know the variety of emergency equipment found at bulk storage facilities.	1.1	Identify different types of fire safety equipment found at bulk storage facilities.
	1.2	Identify different types of spill containment and response equipment found at bulk storage facilities.
	1.3	Identify different pieces of emergency evacuation equipment found at bulk storage facilities.
	1.4	Identify different pieces of medical equipment found at bulk storage facilities.
2. Know the role of mutual aid agreements in enhancing emergency response in bulk storage operations.	2.1	State the purpose of mutual aid agreements.
	2.2	Identify key features of mutual aid agreements.
	2.3	Identify benefits of mutual aid agreements.
3. Know the different types of workplace incidents, their potential causes, appropriate responses, and the importance of	3.1	State key differences between onsite and offsite emergencies.
	3.2	Identify examples of onsite and offsite emergencies.
	3.3	Define the following terms in the context of incidents and emergencies: Near miss

reporting and investigation.		• Dangerous occurrence
	3.4	Define the following terms: • Leading indicators • Lagging indicators.
	3.5	Define the term 'process incident'.
	3.6	Define the following terms: • Major accident hazard (MAH) • Major accident to the environment (MATTE)
	3.7	Identify common causes of process incidents.
	3.8	Outline the different phases of an incident.
	3.9	Outline the steps involved in responding to a process incident.
	3.10	Define the term 'occupational incident'.
	3.11	Identify common causes of occupational incidents.
	3.12	Outline the steps involved in responding to an occupational incident.
	3.13	State the importance of reporting, recording and investigating incidents.
4. Know the roles, responsibilities, actions, reporting procedures, incident recording, and alarm systems involved in emergency response at bulk storage facilities.	4.1	Identify the key roles within an emergency response team.
	4.2	State an individual's responsibilities during an emergency.
	4.3	Identify immediate actions to be taken when an emergency is identified.
	4.4	Identify the correct reporting channels including: • Who to notify • The information to be communicated
	4.5	Outline the process for recording incidents for investigation after an emergency.
	4.6	Identify the types of alarm systems and emergency signals used in bulk storage facilities to include: • Visible alarms • Audible alarms
	4.7	State the meaning of different alarm signals.
5. Know the importance of	5.1	Outline common causes of incidents at bulk storage terminals.

maintaining control in bulk storage operations.	5.2	Identify common lessons learned from incidents.
	5.3	State the role of a secondary emergency control centre.

Unit 13: Practice of Emergency Response in Bulk Storage Operations

Unit Reference	H/651/8073	
Level	2	
Credit Value	1	
GLH	10	
Aim	This unit equips learners with the knowledge and skills needed to ensure safety and preparedness in bulk storage facilities. Learners will be able to locate and identify essential safety and emergency equipment and respond effectively to a range of incidents, minimising risks and ensuring compliance with safety protocols and emergency procedures.	
Assessment Methodology	Centre-Devised Assessment	
Learning Outcomes	Assessment Criteria	
The learner will:	The learner can:	
1. Be able to locate essential safety and emergency equipment at bulk storage facilities.	1.1	Locate different types of fire safety equipment found at bulk storage facilities.
	1.2	Locate different types of spill containment and response equipment found at bulk storage facilities.
	1.3	Locate different pieces of emergency evacuation equipment found at bulk storage facilities.
	1.4	Locate different pieces of medical equipment found at bulk storage facilities.
	1.5	Locate different pieces of personal protective equipment found at bulk storage facilities.
2. Be able to respond effectively to incidents at a bulk storage facility.	2.1	Demonstrate the ability to follow established emergency procedures.
	2.2	Demonstrate the ability to apply appropriate safety measures to contain an incident.
	2.3	Participate in post-incident activities.

Resources

SIAS provides the following additional resources for this qualification:

- Centre Qualification Guide
- Qualification Achievement Record

Further Information

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