



# QUALIFICATION SPECIFICATION

## **Level 3 Diploma in Engineering Construction Lifting, Positioning and Installing Structures, Plant and Equipment (RQF)**

**Contains the following pathways:**

- Erecting
- Rigging

# QUALIFICATION SPECIFICATION

## Engineering Construction Lifting, Positioning and Installing Structures, Plant and Equipment

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# Engineering Construction Lifting, Positioning and Installing Structures, Plant and Equipment (RQF)

## 1. Introduction

### 1.1 Objective and overview

The objective of this vocational competence qualification is to provide recognition that a candidate has demonstrated the required level of technical competence to be qualified to work on engineering construction structures, plant and equipment in **one** of the following disciplines:

- Erecting.
- Rigging.

The candidate is required to select **ONE** discipline pathway **ONLY** when registering on the qualification. Successful completion of the qualification pathway will lead to the candidate being awarded an:

- ECITB Level 3 Diploma In Engineering Construction Lifting, Positioning and Installing Structures, Plant and Equipment (RQF) – Erecting.
  - **OR**
- ECITB Level 3 Diploma In Engineering Construction Lifting, Positioning and Installing Structures, Plant and Equipment (RQF) – Rigging.

The qualification is based on National Occupational Standards (NOS) and has been designed following consultation with industry employers and stakeholders on a qualifications strategy which allows for a wider use of off the job assessment and to further sector needs to improve transferability of skills across the different sectors that comprise the industry. The detail and scope of the assessment criteria within this qualification has been developed by the Engineering Construction Industry Training Board (ECITB) Standards Setting Organisation in conjunction with employers, trainers, and assessors through workshops and consultations.

### 1.2 Erector and Rigger Occupations

Engineering Construction Erecting & Rigging are both vital roles in the Engineering Construction Industry, working within strictly defined processes and procedures to exacting standards to achieve their activities. This often involves working on major infrastructure projects in various sectors such as the power generation sector, (gas, nuclear, wind and other renewables) oil and gas refining; nuclear waste reprocessing; the processing and production of chemicals; pharmaceuticals; human and animal food; cosmetics; petrochemicals; sewerage, steel mill, the exploration and exploitation of oil and gas and the erection and dismantling/decommissioning of steel structures and engineering construction plant of varying sizes and complexity.

Riggers and Erectors often work in hazardous environments which can include working at height, over water and in confined spaces. Riggers and Erectors must be able to work autonomously and as part of a team ensuring compliance with health, safety and environmental processes and procedures, this can involve working with other engineering construction occupations such as Maintenance Technicians, Platers, Pipefitters and Welders.

Erectors and Riggers work at craft person level and are overseen by a Supervisor. They are responsible for the quality of their own work; possibly others' ensuring all work is completed safely and meets stakeholder quality, time and budgetary requirements. Erectors and Riggers generally work on-site on various types of plant and equipment dependent on their employer's given sector.

Collectively Erectors and Riggers are responsible for the assembly, installation and movement of a wide range of plant and associated components. They are required to interpret specifications, engineering drawings and diagrams and understand the on-site hazards and health, safety and environmental requirements of plant and systems.

**Erecting** refers to the installation and dismantling of structural steel frames of building and engineering projects. The structural steel installation is usually crane assisted and utilises mobile elevated work platforms or scissor lifts as the erection of the structure progresses. Erectors can also fix metal decking, safety netting and edge rails to facilitate safe working. The erection work is usually undertaken by teams using a range of tools both powered and hand to connect the steelwork together using range of methods and working on sites which are often under development where new steel structures are being erected.

**Rigging** refers to the lifting, moving and positioning of extremely large or heavy objects which are beyond the reasonable scope of manual handling and outside the reach of material handling equipment. The rigging activities are specialised and require detailed planning and control of all the elements due to the inherent range of hazards and therefore require extensive operator training. Rigging operations often require teams of riggers working cohesively in order to successfully and safely complete the load movement activities often in or around live working plants or during routine maintenance and overhaul of plant and equipment. The moving and lifting equipment is diverse and can include specialist equipment such as skids and rollers as well as numerous types of winches, hoists and cranes of various sizes and design.

For the purpose of this qualification, movement is defined as the relocating of loads which involves cross hauling, vertical raising and lowering or suspension of load. This may be achieved through the use of manually controlled or automated equipment.

### 1.3 Entry requirements

There are no mandatory entry requirements. However, due to the level and complexity of the subject, it is recommended that candidates should have attained GCSE grade “C/5” or above or RQF Functional Skills Level 2 or above in English (Language) and Mathematics or are able to demonstrate evidence of other suitable attainment or experience. A candidate’s individual circumstances will determine if this qualification is appropriate and the Approved Centre will work with the prospective candidate and, where appropriate, employer to determine suitability for the qualification.

### 1.4 Achievement

This qualification consists of 9 mandatory units. A candidate must successfully meet the selected pathway requirements of all 9 units in order to attain this qualification. This specification details the learning outcomes and assessment criteria that a candidate must meet in order to demonstrate the acquisition of the knowledge, skills and behaviours (KSBs) to be awarded a vocational ECITB L3 Diploma in Engineering Construction Lifting, Positioning and Installing Structures, Plant and Equipment (RQF) in either Erecting or Rigging. Mandatory observation of the candidate by an Awarding Organisation (AO) assessor is required to achieve this qualification.

Typical types of engineering construction structures, plant and equipment for the assessment of each pathway in this qualification are listed in Annex 1.

The contents of each unit within the qualification interrelate and the AO does not issue credit certificates for completion of standalone units.

### 1.5 Assessment

Assessment is through a combination of ECITB AO online knowledge tests; observed skills assessment in the ‘live’ workplace’ or under approved simulated workplace conditions; portfolio of evidence; and a final recorded technical discussion.. All assessment is carried out at a location approved by the AO. Refer to Section 3 for further detailed assessment guidance.

## 1.6 Total Qualification Time (TQT), level & duration of qualification

The TQT for this qualification is 1,906 hours. The TQT is broken down by unit below. The amount of time taken to achieve this Level 3 Diploma is typically 36 months.

Unit	Guided Learning (hours)	Total Qualification Time (hours)
<b>Mandatory Units</b>		
LPI01	127.5	361
LPI02	80	220
LPI03	80	210
LPI04	160	427
LPI05	120	340
LPI06	225	545
LPI07	105	310
LPI08	30	93
LPI09	200	527
<b>Total</b>	<b>1127.5</b>	<b>1906</b>

There are no optional units contained in this qualification.

## 1.7 Equal opportunities, reasonable adjustments and special considerations

For information about fair assessment, equal opportunities, reasonable adjustments and special considerations please refer to the ECITB AO 'RQF Quality Assurance & Procedures Manual (QAPM).'

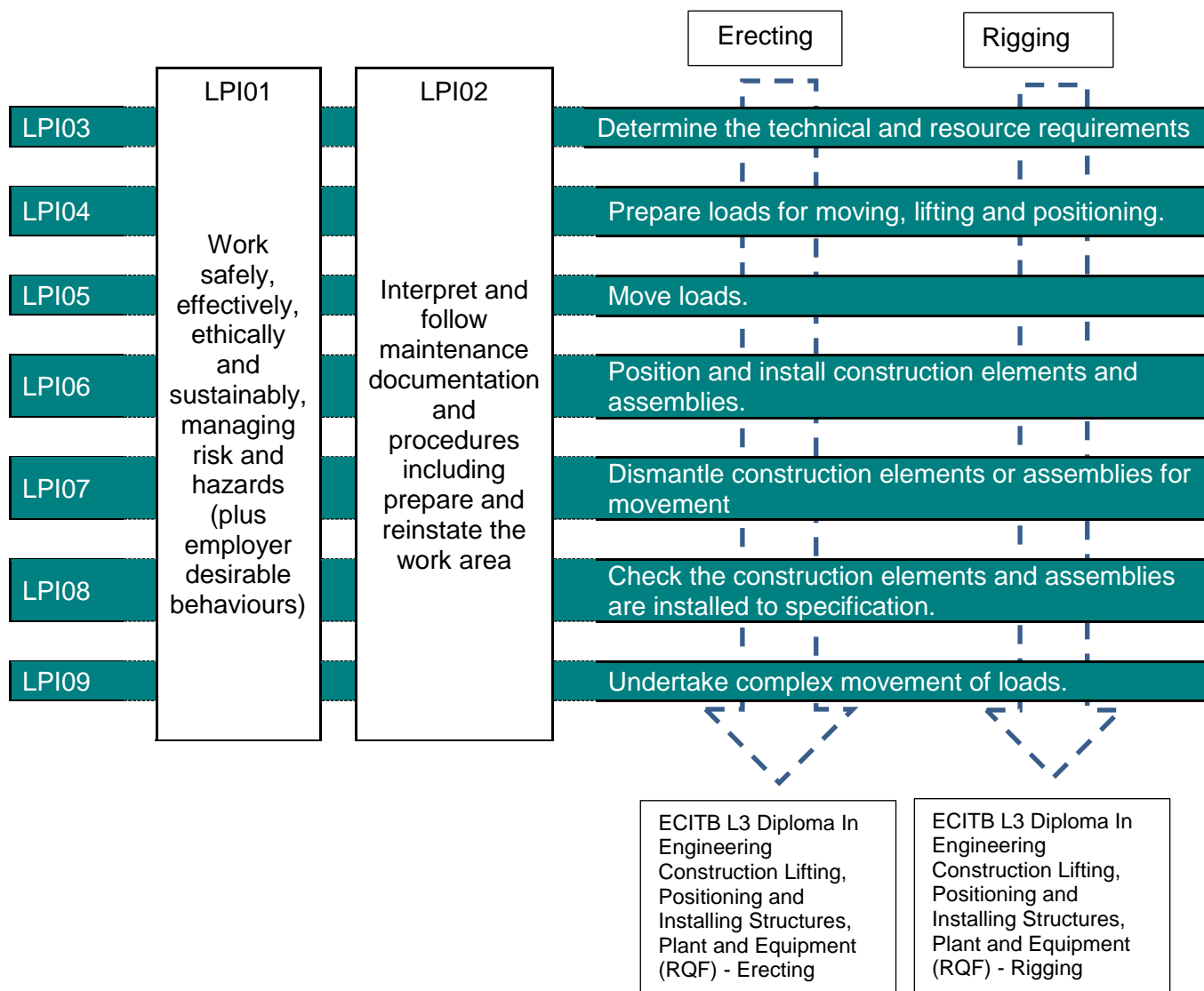
## 1.8 Career development within the Engineering Construction Industry

Completing this qualification can lead to a range of further career options. Those who wish to stay in engineering construction can develop their skills further, or progress through supervision to senior positions such as Construction Manager. Individuals can progress through additional qualifications and apprenticeships into design and engineering, or into supporting engineering functions such as procurement, project management or project controls.

For more information about career progression you can go to the ECITB website [www.ecitb.org.uk](http://www.ecitb.org.uk)

## 2. Qualification units and scope of assessment

### Overview of this qualification



This qualification consists of 9 mandatory units.

The underpinning knowledge, skills and behaviours (KSBs) within units LPI01 and LPI02 are demonstrated by candidates when they undertake the observed skills assessments on structures, plant and equipment in their selected discipline to demonstrate the application of the KSBs detailed in Units LPI03 to LPI09.

This vocational qualification contains the following elements:

### 2.1 Underpinning knowledge, skills and behaviours

Units LPI01 and LPI02 detail the factual, procedural and theoretical knowledge that the Candidate must acquire and also demonstrate on structures, plant and equipment of their selected discipline:

- Relevant national and industry health, safety and environmental standards and legislation and those relevant to the specific disciplines, as appropriate.
- Site safety responsibilities, own and others including: first aid procedures, evacuation procedures and contingency reporting.

- Types and effects of hazards, safety assessment methods and techniques and how to minimise associated risks.
- Relationships: importance of and understanding of work relationship problems.
- Lines of communication, reporting lines and levels of responsibility in the workplace.
- The importance of ethical working and the sustainable use of resources including: codes of conduct, minimising the impact of work on the environment.
- The importance of questioning and demonstrating initiative in day to day problem-solving.
- Procedures and related documentation and responsibility for reporting and following procedures.
- Preparation and reinstatement of work area including: preparing, checking and handling material; types of equipment and the related care and control procedures; storing and disposing of material; handing over plant and equipment.

## 2.2 Employer-desirable behaviours and attitudes

The candidate must demonstrate the application of the following employer desirable behaviours during the observed skills assessments:

- Safety conscious - works safely at all times.
- Risk aware - manages hazards and minimises risk.
- Effective communicator - works effectively with others including keeping others informed.
- Quality focus – ensures work is completed to an appropriate level of quality.
- Conscientious - follows procedures and completes reporting documentation accurately and correctly.
- Initiative – deals with problems effectively and highlights those that cannot be solved.
- Critical thinker – displays the ability to use vocational knowledge to deal with issues that arise during practical tasks.
- Ethical and sustainability behaviours such as:
  - Manages risk to minimise adverse impact to people or the environment.
  - Uses resources efficiently and effectively.
  - Treats all people fairly and with respect.

## 2.3 Erecting or Rigging specific knowledge and skills (Units LPI02 to LPI09)

Units LPI02 to LPI09 are discipline specific and the candidate must demonstrate their knowledge application of KSB's on structures, plant and equipment of their selected discipline pathway:

- Erector.
- Rigger.

The candidate is required to effectively demonstrate theoretical, factual and procedural knowledge and practical skills of the following units that comprise the qualification in accordance with the stated assessment criteria and scope of assessment provided in this document:

LPI01	Work safely, effectively, ethically and sustainably, managing risks and hazards.
LPI02	Interpret and follow procedures including prepare and reinstate the work area.
LPI03	Determine the technical and resource requirements.
LPI04	Prepare loads for moving, lifting and positioning.
LPI05	Move loads.
LPI06	Position and install construction elements and assemblies.
LPI07	Dismantle construction elements or assemblies for movement.
LPI08	Check the construction elements and assemblies are installed to specification.
LPI09	Undertake complex movement of loads.

## 2.4 Further information

For further information either visit the ECITB website or contact ECITB Awarding Organisation:

ECITB AO

Office Suite KD3, First Floor, KD Tower, Cotterells, Hemel Hempstead, HP1 1FW

Tel: 01923 260000

Email: [Qualifications@ecitb.org.uk](mailto:Qualifications@ecitb.org.uk)

Website: [www.ecitb.org.uk](http://www.ecitb.org.uk)



## 2.5 Units

### Unit LPI01 Work safely, effectively, ethically and sustainably, managing risk and hazards

#### Learning outcomes for this unit:

1. The candidate can explain health and safety legislation, regulations, safe working practices, personal site safety responsibilities and demonstrate what 'work safely' at all times means an erector/rigger.
2. The candidate can explain risk and hazard management and demonstrate the ability to identify and take action to deal with potential hazards.
3. The candidate can establish and maintain productive working relationships.
4. The candidate understands lines of communication, responsibilities and can explain quality management systems and can demonstrate effective communication in the context of working as a erector/rigger.
5. The candidate understands codes of conduct and the importance of ethical working and the need to undertake activities in a way that contributes to environmental sustainability.
6. The candidate is able to work effectively as an erector/rigger by demonstrating all employer desirable behaviours.

#### Knowledge assessment criteria:

the candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:

#### HEALTH AND SAFETY LEGISLATION AND REGULATIONS

- K1.1 The requirements of the main health and safety legislation relevant to the role of erector/rigger.
- K1.2 The purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes.
- K1.3 The consequences for employers and employees of not fulfilling their legal health and safety responsibilities.
- K1.4 The importance of personal behaviour in maintaining workplace standards.

#### PERSONAL SITE SAFETY RESPONSIBILITIES

- K1.5 The need for health and safety training for themselves and others in a workplace, the procedures for requesting training and who to ask for help in understanding the work.
- K1.6 Where to get information relating to the safe use of equipment and how to ensure the equipment is used safely.
- K1.7 When personal protective equipment should be used and how to select and use the correct equipment for the work to be undertaken.
- K1.8 The potential for different types of injury including vibration injuries and how they can be prevented.
- K1.9 The checks which are needed to make sure that portable electrical appliances are safe to use.
- K1.10 What a safe system for plant isolation should include including electrical isolation and why low voltage is generally safer in relation to health and safety.
- K1.11 The risks from overhead cables and how to control them.

#### FIRST AID

- K1.12 First aid procedures as used in a typical company and where information about them can be

obtained.

- K1.13 Which first aid procedures typically apply in a workplace including:
- The sources of competent assistance.
  - How to find local first aid facilities.
  - How to alert or summon professional authorities.

### **EMERGENCY AND EVACUATION PROCEDURES**

- K1.14 Emergency procedures and evacuation procedures as used in a typical company and where information about them can be obtained from including the different alarms.
- K1.15 Contingency reporting documentation and systems including: emergencies, accidents and potential incidents.
- K1.16 How to call for expert help in the event of contingencies occurring, following relevant procedures.
- K1.17 How to follow shutdown and evacuation procedures promptly and correctly.

### **HAZARDS AND HAZARD SPOTTING**

- K1.18 What is a hazard and the common types of hazard associated with processes, tools, equipment and materials.
- K1.19 Where information on hazard spotting and safety assessment techniques can be found.
- K1.20 Hazard spotting and safety assessment techniques, which apply in a typical work location.
- K1.21 The effects of hazards on persons, property and the environment.
- K1.22 Who to call for appropriate help using warning systems as appropriate in relation to hazards.
- K1.23 What must be done when transporting hazardous substances around a site.

### **MANAGING HAZARDS AND THE ASSOCIATED RISK**

- K1.24 What the individual's responsibilities are in terms of dealing with and notifying others of hazards including what should it be reported, how and the related documentation.
- K1.25 The types of actions that are required to deal with and minimise the risks from different hazards.
- K1.26 What risk is in relation to health and safety, its importance and the consequences of poor risk management.

### **MAINTAINING WORKING RELATIONSHIPS**

- K1.27 Why it is important to create and maintain working relationships.
- K1.28 The different problems that can affect working relationships and the actions that can be taken to deal with specific difficulties.

### **REPORTING LINES, COMMUNICATION AND QUALITY MANAGEMENT**

- K1.29 The responsibilities of an erector/rigger in a typical workplace and the responsibilities of others within a typical work location.
- K1.30 The importance of reporting lines, procedures, systems and documentation and the consequences of failing to follow them.
- K1.31 The limits of own responsibility and who to refer to for clarification on issues.
- K1.32 Quality management procedures and the importance of following them.
- K1.33 The importance of dealing promptly and effectively with problems and reporting those which cannot be solved.

### **ETHICS AND ENVIRONMENTAL SUSTAINABILITY**

- K1.34 The purpose of ethics and environmental sustainability in a typical workplace.
- K1.35 Codes of conduct, including relevant professional codes of conduct relevant to an erector/rigger.
- K1.36 The importance of using resources efficiently and effectively.
- K1.37 What working ethically means in terms of treating all people fairly and with respect and displaying honesty, integrity, accuracy and rigour.
- K1.38 How the role of an erector/rigger impacts on the environment and how this impact can be reduced.

**Skills assessment criteria:**

the candidate must demonstrate the following on structures, plant and equipment of their selected discipline during the observed skills assessment of units 2 and 9, specifically the ability to:

**SKILLS FOR WORKING SAFELY**

- S1.1 Work safely at all times complying with health and safety and other relevant guidelines and procedures.
- S1.2 Select the correct personal protective equipment for the work to be undertaken.
- S1.3 Deal safely with dangers that can be contained using appropriate equipment and materials, in accordance with procedures.

**SKILLS FOR MANAGING HAZARDS AND MINIMISING RISK**

- S1.4 Identify potential hazards in the workplace including hazardous processes, tools, equipment and materials.
- S1.5 Safely check for potential hazards in accordance with agreed and approved procedures.
- S1.6 Take appropriate action upon identification of a hazard or emergency minimise the risk from it.
- S1.7 Report in accordance with procedures / risk control strategy.

**SKILLS FOR WORKING RELATIONSHIPS**

- S1.8 Develop working relationships with a range of people.
- S1.9 Deal with disagreements in a professional and constructive manner so that effective relationships are maintained.

**SKILLS FOR REPORTING LINES, COMMUNICATION AND QUALITY PROCEDURES**

- S1.10 Keep others informed about work plans and activities which affect them – either formal/informal, written or verbal.
- S1.11 If needed, seek assistance in relation to work related activities from others in a polite and courteous way without causing undue disruption to normal working activities.
- S1.12 Respond in a timely and positive way when others ask for help or information e.g. prioritise requests, clarify exactly what is required.
- S1.13 Follow quality requirements.
- S1.14 Deal with problems appropriately if and when they arise.

**SKILLS FOR SUSTAINABILITY AND ETHICS**

- S1.15 Treat everyone fairly and with respect.
- S1.16 Demonstrate accuracy and rigour when undertaking practical procedures.
- S1.17 Deal effectively with resources taking environmental considerations into account.

**Behaviours assessment criteria:**

the candidate must demonstrate the following as part of the observed skills assessment of units LPI02 to LPI09 or provide additional evidence as part of their Qualification portfolio of evidence, specifically:

## EMPLOYER DESIRABLE BEHAVIOURS

- B1.1 Safety conscious - works safely at all times.
- B1.2 Risk aware - manages hazards and minimises risk.
- B1.3 Effective communicator - works effectively with others including keeping others informed.
- B1.4 Quality focus - ensures work is completed to an appropriate level of quality.
- B1.5 Conscientious - follows procedures and complete documentation accurately and correctly.
- B1.6 Initiative - deals with problems effectively and highlights those that cannot be solved.
- B1.7 Ethical and sustainability behaviours such as:
  - a) Manages risk to minimise adverse impact to people or the environment.
  - b) Uses resources efficiently and effectively.
  - c) Treat all people fairly and with respect.
- B1.8 Critical thinker – displays the ability to use vocational knowledge to deal with issues that arise during practical tasks.

## Unit LPI02 Interpret and follow documentation procedures including prepare and reinstate the work area

### Learning outcomes:

1. The candidate must demonstrate that they can interpret and follow specifications, plans and schedules so that they are able to carry out the job of an erector/rigger effectively.
2. The candidate must demonstrate that they can follow reporting procedures and documentation completion requirements as required to carry out the job of an erector/rigger effectively.
3. The candidate can explain and demonstrate how to prepare and reinstate the work area, material and equipment safely and correctly before and after Lifting, Positioning and Installing activities take place.

### Knowledge assessment criteria:

the candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:

#### ERECTOR/RIGGER DOCUMENTATION

- K 2.1 The principles, uses and conventions of:
  - a) Methods statements.
  - b) Risk assessments, POWRA/POWLA.
  - c) Lift plans.
  - d) Technical drawings.
  - e) Related specifications.
  - f) Crane specifications.
- K 2.2 The information detailed in the diagrams in engineering drawings and related specifications and how it relates to the physical component(s) and activities.
- K 2.3 The diagrams and key information found in:
  - a) Manufacturer's specifications.
  - b) Handbooks.
  - c) Trade association codes of practice.
- K 2.4 Where to find information that may be necessary in order to undertake lifting, positioning and installing activities.
- K 2.5 Plan and schedules and their use

#### ERECTOR/RIGGER PROCEDURES

- K 2.6 Typical authorisation procedures.

### Skills assessment criteria:

the candidate must demonstrate the ability to:

#### ERECTOR/RIGGER DOCUMENTATION

- S2.1 Check the validity or the documentation being used.
- S2.2 Interpret and follow specifications, engineering drawings and work instructions including:
  - a) Method statements.
  - b) Risk assessments, POWRA/POWLA.
  - c) Lift plans.
  - d) Technical drawings.
  - e) Related specifications.
  - f) Crane specifications.
- S2.3 Interpret and follow equipment manuals.
- S2.4 Interpret plans and schedules.

#### ERECTOR/RIGGER PROCEDURES

- S2.5 Follow authorisation procedures.
- S2.6 Follow procedures and report on the completion of activities in accordance with procedures.
- S2.7 Complete all relevant documentation correctly and accurately at all stages.

- K 2.7 The procedures used to report on activities and the related reporting documentation in other words - who to report to, what to report and when to report.
- K 2.8 The importance of checking and confirming procedures have been followed and documentation correctly completed.

### **HANDOVER ERECTING/RIGGING ACTIVITES**

- K 2.9 Typical handover procedures and environments including:
- When handover should occur.
  - Related quality control systems and documentation procedures.
  - How to confirm the precise moment of transfer.
  - Why it is important to define the precise moment of transfer.
  - The level of detail and information required by different parties for handover.
  - How to confirm the information at handover is accurate and complete.

### **PREPARE AND REINSTATE THE WORK AREA**

- K 2.10 The consequences/hazards of incorrectly preparing or reinstating the work areas, material and equipment.
- K 2.11 The procedures for the connection and operation of applicable services and equipment including but not limited to pneumatic, electric, gas and hydraulic.
- K 2.12 The types of equipment used and explain the care and control procedures.
- K 2.13 How to check materials for correct specification, quantity and quality.
- K 2.14 Material handling techniques and preparation methods.
- K 2.15 Storage methods and procedures.
- K 2.16 Typical waste minimisation and disposal procedures.

- S2.8 Report any instance where the activities cannot be fully met or where there are identified defects or variations from the specification or outside the planned schedule.
- S2.9 Check required reporting documentation is completed correctly once the activity is completed and before handover takes place.

### **HANDOVER ERECTING/RIGGING ACTIVITES**

- S2.10 Follow appropriate handover procedures, confirming and recording acceptance of responsibility in line with procedures including:
- Clearly define and obtain agreement on the moment of transfer of responsibility.
  - Communicate handover of control as specified.
  - Make sure information received at the handover is accurate, up-to-date and complete.
  - Seek additional information if there are areas of doubt or lack of clarity.
  - Provide proper support and co-ordination to those transferring control.

### **PREPARE AND REINSTATE THE WORK AREA**

- S2.11 Follow safety procedures, risk assessment and methods of work when preparing and reinstating the work area, materials, tools and equipment.
- S2.12 Obtain, check against relevant specification and prepare the appropriate tools, materials and equipment and check:
- Quantities.
  - That they are in a safe and usable condition.
- S2.13 Ensure that all necessary service supplies are connected correctly and ready for use.
- S2.14 Ensure that any stored energy or substances are released correctly and safely, where appropriate.
- S2.15 Ensure all isolations and disconnections to the equipment are completed in line with the approved procedures (stored energy, substances, air, fluids, gas, mechanical, electrical).
- S2.16 Provide and maintain safe access to the work area.
- S2.17 Check the workplace is as expected.
- S2.18 Confirm plant and/or equipment is in the expected configuration.
- S2.19 Ensure that arrangements are made to protect other workers from activities likely to disrupt normal working.

S2.20 Deal promptly and effectively with problems and report those that cannot be solved.

**SKILLS FOR REINSTATEMENT ONLY**

Reinstate the work area to a safe condition taking safety and environmental considerations into account by:

S2.21 Correctly disposing of waste materials.

S2.22 Storing re-usable materials and equipment in accordance with procedures.

S2.23 Ensuring any necessary connections to equipment are established and complete.

S2.24 Minimise waste wherever possible.

## Unit LPI03 Determine the technical and resource requirements

**Learning outcome:** The candidate understands how to determine technical and resource requirements in order to achieve engineering activities safely and effectively to specification.

### Knowledge assessment criteria:

the candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:

- K3.1 Available information sources
  - Method Statements.
    - Lift Plans.
  - Risk Assessments:
    - Point Of Work Lifting Assessment (POWLA).
    - Point Of Work Risk Assessment (POWA).
  - Technical drawings:
    - Component.
    - Assembly.
    - General arrangement.
    - Isometrics.
  - Work Schedules.
  - Lifting equipment specifications.
- K3.2 Information obtained from work objectives in relation to:
  - Resources, tools and equipment.
  - Skill sets and appropriately authorised personnel.
  - Individual roles and responsibilities.
  - Communication methods/techniques.
  - Work Schedules.
  - Safety Procedures.
- K3.3 Planning methods and techniques commonly used.
- K3.4 Methods of presenting technical and resource information.
- K3.5 Typical problems that can arise and how to solve them.

### Skills assessment criteria:

the candidate must demonstrate the ability to:

- S3.1 Interpret the specifications in relation to:
  - 1) Technical requirements.
  - 2) Resource requirements.
- S3.2 Clearly identify and confirm work objectives to be achieved.
- S3.3 Identify how the working environment and work schedule impact on the technical and resource requirements.
- S3.4 Determine and specify the most appropriate technical and resource requirements to meet the objectives including:
  - Resources- tools & equipment.
  - Skill sets & appropriately authorised personnel.
  - Individual roles & responsibilities.
  - Communication methods/techniques.
  - Work Schedules.
  - Safety Procedures.
- S3.5 Specify work methods and techniques for their suitability and technical feasibility to meet the objectives.
- S3.6 Report and advise on the chosen technical and resource requirements, clearly stating the requirements that cannot be achieved.
- S3.7 Provide colleagues with valid and up-to date information, through a suitable method such as a pre-job discussion.
- S3.8 Clarify information or raise queries following appropriate processes.

## Unit LPI04 Prepare loads for moving, lifting and positioning

**Learning outcome:** The candidate understands how to prepare loads for moving, lifting and positioning and can do this safely and effectively to requirements and procedures allowing for the centre of gravity.

### Knowledge assessment criteria:

the candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:

- K 4.1 Methods of confirming the weight of a load.
- K 4.2 How to establish the weight of a load and its centre of gravity.
- K 4.3 Slinging and lifting methods and techniques.
- K 4.4 Route planning methods and techniques.
- K 4.5 Load handling methods and techniques.
- K 4.6 Types of equipment used for moving, lifting and positioning loads and explain the care and control procedures.
- K 4.7 The importance of and how to correctly identify the load
- K 4.8 Why orientation is important and how to confirm this is correct.
- K 4.9 Techniques and materials for protecting the load and equipment.

### Skills assessment criteria:

the candidate must demonstrate the ability to:

- S 4.1 Establish the weight of the load to be moved.
- S 4.2 Determine the methods and techniques for moving or lifting the load and the equipment required.
- S 4.3 Determine a suitable route for moving the load minimising the risk to people and property.
- S 4.4 Obtain the required load(s) and check it for quantity, quality and orientation.
- S 4.5 Determine the correct sequence of moving, lifting and positing the loads and how to prepare them for moving.
- S 4.6 Select, check and attach the equipment to be used, confirming it is capable of moving the load safely.
- S 4.7 Carry out preparations including protecting the load and equipment from damage.
- S 4.8 Secure and protect the load and equipment before moving operations start.



## Unit LPI05 Move loads

**Learning outcome:** The candidate understands how to move loads and can do this safely and effectively.

**Knowledge assessment criteria:**

the candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:

- K 5.1 Typical load characteristics.
- K 5.2 Methods and techniques for moving loads.
- K 5.3 The types of equipment used for the following;
  - a) Lifting Loads.
  - b) Moving Loads.
  - c) Handling Loads.
- K 5.4 The factors which effect the identification of a suitable storage location for the load.
- K 5.5 The materials that are required to protect the load when it is released.

**Skills assessment criteria:**

the candidate must demonstrate the ability to:

- S 5.1 Position the moving equipment so that the weight of the load is evenly distributed.
- S 5.2 Attach the appropriate lifting, moving and handling equipment securely to the load, using approved methods to eliminate slippage.
- S 5.3 Confirm the load is secure before moving.
- S 5.4 Move the load over the selected route.
- S 5.5 Position and release the load safely in its intended final destination on appropriate packing materials.

## Unit LPI06 Position and install construction elements and assemblies

**Learning outcome:** The candidate understands how to and is able to, position, install and secure construction elements safely and effectively to requirement and procedures.

### **Knowledge assessment criteria:**

the Candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:

- K 6.1 The types and application of construction sections.
- K 6.2 The methods of construction element identification and orientation before assembly.
- K 6.3 Approved installation methods and techniques used to align and connect construction elements & assemblies.
- K 6.4 Determine the best technique and procedure for position and installing construction elements and assemblies
- K 6.5 Slings, lifting and signalling methods and techniques.
- K 6.6 Types of equipment used for holding loads in the required positions
- K 6.7 Methods of providing temporary support during installation.

### **Skills assessment criteria:**

the candidate must demonstrate the ability to:

- S 6.1 Interpret relevant drawings and specifications in relation to:
  - Technical implications.
  - Work circumstances.
- S 6.2 Identify, select and conduct pre-use checks on the tools and equipment for the installation operation/s.
- S 6.3 Attach the appropriate handling equipment securely to the load, using approved methods to allow for easy alignment and connection.
- S 6.4 Confirm that the load is secure before moving.
- S 6.5 Use a variety of installation methods and techniques.
- S 6.6 Position the moving equipment so that the construction element is appropriately aligned and supported.
- S 6.7 Install, position and secure the construction elements/assemblies and components as specified.
- S 6.8 Securely fix any necessary temporary support facilities.
- S 6.9 Release the load safely in its intended final location.
- S 6.10 Ensure all the necessary connections are complete.
- S 6.11 Check that the installation is complete and that all components are free from damage.
- S 6.12 Take appropriate measures to protect the finished construction/assembly.

## Unit LPI07 Dismantle construction elements or assemblies

**Learning outcome:** the candidate understands how to and is able to dismantle construction elements or assemblies safely and effectively to requirement and procedures.

<b>Knowledge assessment criteria:</b>	<b>Skills assessment criteria:</b>
<p>the Candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:</p> <p>K 7.1 The types and application of construction elements and assemblies.</p> <p>K 7.2 Methods and techniques for dismantling construction elements and assemblies.</p> <p>K 7.3 Methods of providing temporary support during dismantling.</p> <p>K 7.4 The considerations to be taken into account when dismantling construction elements &amp; assemblies on an operational site and what limitations this can impose.</p> <p>K 7.5 How these considerations can impact on the following:</p> <ul style="list-style-type: none"> <li>○ Selection of method or technique.</li> <li>○ Size of components.</li> <li>○ Selection of equipment.</li> <li>○ Implications on operation on work activities.</li> </ul> <p>K 7.6 The implications on workplace infrastructure of dismantling activities and operations on live plant, including service supplies.</p>	<p>the candidate must demonstrate the ability to:</p> <p>S7.1 Dismantle in accordance with instructions &amp; specifications.</p> <p>S7.2 Identify the construction elements to be removed and determine the most appropriate method of dismantling.</p> <p>S7.3 Establish and where necessary support components before removal of securing devices.</p> <p>S7.4 Remove components in the correct sequence using approved equipment methods and techniques.</p> <p>S7.5 Identify and attend to damage and defects in any re-usable elements and store them for re-use in an appropriate location.</p> <p>S7.6 Dispose of unwanted elements in line with agreed and approved procedures.</p>

## Unit LPI08 Check the construction elements and assemblies are installed to specification

**Learning outcome:** The candidate understands and is able to carry out checks in an appropriate sequence, using the correct methods and procedures and how to report their completion in line with organisational procedures.

**Knowledge assessment criteria:**  
the candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:

- K 8.1 Compliance checking methods and techniques, to include;
  - Dimensional.
  - Line and level.
  - Visual.
  - Specification.
  - Torque.
- K 8.2 How to identify defects and how to rectify them.
- K 8.3 Quality control systems and documentation procedures in relation to post installation inspection.

**Skills assessment criteria:**  
the candidate must demonstrate the ability to:

- S 8.1 Follow the appropriate specification for the item being checked.
- S 8.2 Use all the correct tools and inspection equipment and check that they are in useable condition
- S 8.3 Carry out compliance checks in the correct sequence using approved methods and procedures.
- S 8.4 Identify and assess any construction element defects or variations from the specification and take appropriate action.
- S 8.5 Report completion of compliance activities in line with procedure.
- S 8.6 Deal promptly and effectively with problems and report those that cannot be solved.

## Unit LPI09 Undertaking complex movement of loads

**Learning outcome:** The candidate understands and is able to carry out complex movement of loads including; selection and siting of specialist lifting accessories, confirming that the load is secure before moving and releasing safely and effectively in its intended destination.

### Knowledge assessment criteria:

the candidate must demonstrate an understanding of the following in order to satisfy the skills assessment criteria:

- K 9.1 The methods and techniques used for the movement of loads through the following:
  - Confined spaces.
  - Over or through operational plant and equipment.
  - Using specialist structures or lifting assemblies.
  - Rotation through various orientations.
  - Cross hauling.
- K 9.2 The methods and equipment used for the lifting of persons.
- K 9.3 The supporting technical information which is required to complete these operations.
- K 9.4 Mode factors.
- K 9.5 The correct position of winch for intended operation.
- K 9.6 How to achieve mechanical advantage through the use of reeving multiple fall rigging arrangement (load and pull).
- K 9.7 Why it is important to be aware of the materials and environment when selecting lifting equipment.
- K 9.8 Complex load movement route planning methods and techniques.
- K 9.9 The roles of the Appointed Person (AP), and Lift Supervisor when carrying out complex lifts.

### Skills assessment criteria:

the candidate must demonstrate the ability to:

- S 9.1 Apply the technical information required to achieve objectives.
- S 9.2 Apply methods and techniques to move loads through the following:
  - Confined spaces.
  - Using specialist structures or lifting assemblies.
  - Rotation through various orientations.
  - Cross hauling.
- S 9.3 Position the moving equipment using multiple lifting points.
- S 9.4 Maintain the correct mode factors during the complex movement of loads.
- S 9.5 Position lifting equipment to cross haul the load.
- S 9.6 Correctly select lifting equipment taking into account the materials & the environment.
- S 9.7 Attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage.
- S 9.8 Confirm the load is secure before moving.
- S 9.9 Move the load over the selected route.
- S 9.10 Position and release the load safely in its intended final location.
- S 9.11 Seek authority from the appropriate person to:
  - Begin the complex movement of loads.
  - Seek clarification if problems arise.
  - Land the load.