



Qualification Specification

# **ProQual Level 6 Diploma in Quality Control and Quality Assurance (QA/QC) - Engineering**

# ProQual Level 6 Diploma in Quality Control and Quality Assurance - Engineering (QA/QC)



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### Introduction

The ProQual Level 6 Diploma in Quality Control and Quality Assurance (QA/QC) – Engineering provides a nationally recognised qualification for individuals aged 19 and older who are seeking to develop advanced knowledge and skills in quality management practices across various engineering disciplines. It is particularly suited for professionals in civil, mechanical, and electrical engineering sectors who are responsible for ensuring quality standards in their projects and systems. This qualification is ideal for those aiming to enhance their expertise in quality control and assurance processes, and it supports career progression into senior quality management roles.

This qualification is designed in alignment with recognized national and international quality standards, including ISO 9001 and Six Sigma. It incorporates best practices from Total Quality Management (TQM) and other established quality management frameworks. By adhering to these standards, the qualification ensures that learners are proficient in current industry requirements and are well-prepared to meet the demands of quality assurance roles.

The aims of this qualification are:

- Foster an in-depth understanding of quality management systems and their applications.
- Develop the ability to implement and evaluate QA/QC processes in civil, mechanical, and electrical projects.
- Enhance the capability to manage risks, ensure regulatory compliance, and contribute to continuous improvement in quality standards.

The awarding body for this qualification is ProQual AB. This qualification has been approved for delivery in England. The regulatory body for this qualification is Ofqual, and this qualification has been accredited onto the Regulated Qualification Framework (RQF), and has been published in Ofqual's Register of Qualifications.

## Qualification Profile

<b>Qualification Title:</b>	ProQual Level 6 Diploma in Quality Control and Quality Assurance (QA/QC) - Engineering
<b>Qualification Number:</b>	610/5242/5
<b>Level:</b>	6
<b>Total Qualification Time (TQT):</b>	600 Hours 60 Credits
<b>Guided Learning Hours (GLH):</b>	300 Hours
<b>Assessment:</b>	Pass / Fail
	Internally assessed and verified by centre staff
	Externally verified by ProQual Verifiers
<b>Qualification Start Date:</b>	24/01/2025
<b>Qualification Review Date:</b>	24/01/2028

### Learner Profile

There are no formal academic entry requirements for this qualification. Centres should carry out an initial assessment of candidate skills and knowledge to identify and gaps and inform the assessment plan.

Candidates must be employed in a role, or enrolled in a training course, that will allow them to generate evidence against each of the assessment criteria.

Candidates must be aged 19 years or older on the day they are registered for this qualification. Centres are reminded that no assessment should take place before candidates are registered.

Candidates who complete this qualification may progress onto the ProQual Level 7 Diploma in in Quality Control & Quality Assurance (QA/QC)

## Qualification Structure

This qualification consists of **five** mandatory units. Candidates must complete all mandatory units to complete this qualification.

Unit Number	Unit Title	Level	TQT	GLH
Mandatory Units – Candidates must complete <b>all</b> units in this group.				
T/651/4531	Principles of Quality Control and Quality Assurance	6	120	60
Y/651/4532	Quality Management Systems and Standards	6	120	60
A/651/4533	Quality Control & Quality Assurance in Civil Engineering Projects	6	120	60
D/651/4534	Quality Control & Quality Assurance in Mechanical Field Activities and Systems	6	120	60
F/651/4535	Quality Control & Quality Assurance in Electrical Systems	6	120	60

### Centre Requirements

Centres must be approved to deliver this qualification. If your centre is not approved to deliver this qualification, please complete and submit the **ProQual Additional Qualification Approval Form**.

Materials produced by centres to support candidates should:

- Enable them to track their achievements as they progress through the learning outcomes and assessment criteria.
- Provide information on where ProQual's policies and procedures can be viewed.
- Provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence.

Centres must have the appropriate equipment to enable candidates to carry out the practical requirements of this qualification.



## Certification

Candidates who achieve the requirements for this qualification will be awarded:

- A certificate listing all units achieved, and
- A certificate giving the full qualification title:

## Level 6 Diploma in Quality Control and Quality Assurance (QA/QC) - Engineering

### Claiming certificates

Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the qualification. All certificates will be issued to the centre for successful candidates.

### Unit certificates

If a candidate does not achieve all of the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all of the units achieved.

### Replacement certificates

If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement.

## Assessment Requirements

Each candidate is required to produce a portfolio of evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

Evidence can include:

- Observation report by assessor
- Assignments/projects/reports
- Professional discussion
- Witness testimony
- Candidate product
- Worksheets
- Record of oral and written questioning
- Recognition of Prior Learning

Candidates must demonstrate the level of competence described in the units. Assessment is the process of measuring a candidate's skill, knowledge and understanding against the standards set in the qualification.

Centre staff assessing this qualification must be **occupationally competent** and qualified to make assessment decisions. Assessors who are suitably qualified may hold a qualification such as, but not limited to:

- ProQual Level 3 Certificate in Teaching, Training and Assessment.
- ProQual Level 3 Award in Education and Training.
- ProQual Level 3 Award in Assessing Competence in the Work Environment.  
*(Suitable for assessment taking place in a working environment only.)*
- ProQual Level 3 Award in Assessing Vocational Achievement.  
*(Suitable for assessment taking place in a simulated training environment only.)*

Candidate portfolios must be internally verified by centre staff who are **occupationally knowledgeable** and qualified to make quality assurance decisions. Internal verifiers who are suitably qualified may hold a qualification such as:

- ProQual Level 4 Award in the Internal QA of Assessment Processes and Practice.
- ProQual Level 4 Certificate in Leading the Internal QA of Assessment Processes and Practice.

**Occupationally competent** means capable of carrying out the full requirements contained within a unit. **Occupationally knowledgeable** means possessing relevant knowledge and understanding.

## **Enquiries, Appeals and Adjustments**

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements.

Centres should contact ProQual for further information or queries about the contents of the policy.

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

## Units – Learning Outcomes and Assessment Criteria

<b>Title:</b>		Principles of Quality Control and Quality Assurance		<b>Level:</b>	6
<b>Unit Number:</b>	T/651/4531	<b>TQT:</b>	120	<b>GLH:</b>	60
<b>Learning Outcomes</b> <i>The learner will be able to:</i>		<b>Assessment Criteria</b> <i>The learner can:</i>			
1	Understand the principles of Quality Control (QC) and Quality Assurance (QA).	1.1	Define the terms: <ul style="list-style-type: none"> <li>Quality Control.</li> <li>Quality Assurance.</li> </ul>		
		1.2	Describe the relationship between QC and QA in the overall quality management process.		
		1.3	Explain the role of QC/QA in maintaining product or service quality.		
		1.4	Explain the difference between corrective actions and preventive actions in QA/QC.		
2	Evaluate the importance of quality standards and regulations.	2.1	Identify key national and international quality standards.		
		2.2	Discuss the importance of compliance with regulatory frameworks.		
		2.3	Discuss the consequences of non-compliance with quality standards.		
		2.4	Explain the role of regulatory bodies in QA/QC implementation.		
3	Examine the quality assurance lifecycle.	3.1	Identify the stages in the QA lifecycle.		
		3.2	Discuss key tools used in the QA process.		
		3.3	Analyse how continuous improvement is embedded in the QA lifecycle.		

4	Understand risk management in QA/QC.	4.1	Define risk management within the context of QA/QC.
		4.2	Explain methods for identifying and mitigating risks in QA/QC.
		4.3	Discuss the impact of unaddressed risks on quality outcomes.

## Additional Assessment Information

This unit is **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

<b>Title:</b>		Quality Management Systems and Standards		<b>Level:</b>	6	
<b>Unit Number:</b>		Y/651/4532	<b>TQT:</b>	120	<b>GLH:</b>	60
<b>Learning Outcomes</b> <i>The learner will be able to:</i>		<b>Assessment Criteria</b> <i>The learner can:</i>				
1	Understand Quality Management Systems (QMS).	1.1	Describe the concept and purpose of a Quality Management System.			
		1.2	Explain the principles of Total Quality Management (TQM).			
		1.3	Discuss the benefits of a QMS in an organisation.			
2	Understand international quality standards to QMS.	2.1	Identify key international quality standards.			
		2.2	Describe the implementation steps for ISO 9001 standards.			
		2.3	Evaluate the effectiveness of different quality management models.			
3	Understand continuous improvement strategies.	3.1	Describe continuous improvement tools, including but not limited to: <ul style="list-style-type: none"> <li>• Kaizen.</li> <li>• PDCA.</li> </ul>			
		3.2	Discuss the benefits of continuous improvement in QMS.			
		3.3	Design a continuous improvement plan within a QA/QC framework.			
4	Evaluate performance measurement techniques for QMS.	4.1	Identify key performance indicators (KPIs) for QA/QC.			
		4.2	Discuss the role of data and performance measurement in QMS.			
		4.3	Analyse the effectiveness of performance reviews in enhancing quality management			

## Additional Assessment Information

This unit is **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

<b>Title:</b>		Quality Control & Quality Assurance in Civil Engineering Projects		<b>Level:</b>	6	
<b>Unit Number:</b>		A/651/4533	<b>TQT:</b>	120	<b>GLH:</b>	60
<b>Learning Outcomes</b> <i>The learner will be able to:</i>		<b>Assessment Criteria</b> <i>The learner can:</i>				
1	Understand the application of QA/QC in Civil Engineering.	1.1	Explain the role of QA/QC in the construction industry.			
		1.2	Discuss common quality issues in civil engineering projects.			
		1.3	Analyse the use of QA/QC in civil engineering project lifecycle.			
2	Design quality assurance processes in civil engineering projects.	2.1	Identify QA tools and techniques for quality assurance in construction.			
		2.2	Produce a QA plan for a civil engineering project.			
		2.3	Evaluate the effectiveness of a QA process in improving construction outcomes.			
3	Understand how to monitor and evaluate construction materials for quality.	3.1	Identify common materials used in civil engineering projects.			
		3.2	Explain testing methods for construction materials.			
		3.3	Discuss the quality assurance process for construction materials.			
4	Understand regulatory standards for civil engineering QA/QC.	4.1	Identify regulations and standards specific to civil engineering.			
		4.2	Discuss the impact of non-compliance with construction quality standards.			
		4.3	Discuss the role of inspections and audits in ensuring compliance.			

### Additional Assessment Information

This unit is **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

<b>Title:</b>		Quality Control & Quality Assurance in Mechanical Field Activities and Systems		<b>Level:</b>	6
<b>Unit Number:</b>		D/651/4534	<b>TQT:</b>	120	<b>GLH:</b> 60
<b>Learning Outcomes</b> <i>The learner will be able to:</i>		<b>Assessment Criteria</b> <i>The learner can:</i>			
1	Understand the role of QA/QC in mechanical engineering systems.	1.1	Explain the importance of QA/QC in mechanical systems.		
		1.2	Discuss the application of quality control methods in mechanical engineering.		
		1.3	Identify challenges in ensuring quality in mechanical field activities.		
2	Understand testing and calibration techniques in mechanical systems.	2.1	Identify common mechanical testing methods for QA/QC.		
		2.2	Describe the calibration processes for mechanical instruments.		
		2.3	Analyse the significance of testing and calibration in mechanical quality control.		
3	Evaluate mechanical system performance under QA/QC standards.	3.1	Assess mechanical system performance using quality standards.		
		3.2	Explain how performance data is used to ensure quality in mechanical systems.		
		3.3	Suggest improvements to mechanical systems based on QA/QC performance analysis.		
4	Assess safety and environmental impacts in mechanical QA/QC.	4.1	Identify potential safety hazards in mechanical systems.		
		4.2	Discuss the role of QA/QC in mitigating environmental risks in mechanical systems.		
		4.3	Evaluate safety standards and their integration into mechanical QA/QC.		

### Additional Assessment Information

This unit is **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.



<b>Title:</b>		Quality Control & Quality Assurance in Electrical Systems		<b>Level:</b>	6	
<b>Unit Number:</b>		05	<b>TQT:</b>	120	<b>GLH:</b>	60
<b>Learning Outcomes</b> <i>The learner will be able to:</i>		<b>Assessment Criteria</b> <i>The learner can:</i>				
1	Understand QA/QC principles in electrical systems.	1.1	Describe the role of QA/QC in electrical system design and maintenance.			
		1.2	Describe the challenges of implementing QA/QC in electrical systems.			
		1.3	Explain the importance of quality assurance in electrical safety.			
2	Understand electrical system testing for quality assurance.	2.1	Identify key testing techniques for electrical systems.			
		2.2	Describe the procedures for inspecting electrical installations.			
		2.3	Discuss the role of preventive testing in electrical QA/QC.			
3	Monitor and evaluate risk management processes in QA/QC.	3.1	Produce tools for monitoring risks within QA/QC processes.			
		3.2	Evaluate the success of risk management and mitigation strategies.			
4	Understand regulatory compliance in electrical QA/QC processes.	4.1	Identify key regulations governing electrical systems.			
		4.2	Discuss the compliance process for electrical QA/QC.			
		4.3	Discuss the consequences of non-compliance with electrical quality standards.			

### Additional Assessment Information

This unit is **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

## Appendix One – Command Verb Definitions

The table below explains what is expected from each **command verb** used in an assessment objective. Not all verbs are used in this specification

<b>Apply</b>	Use existing knowledge or skills in a new or different context.
<b>Analyse</b>	Break a larger subject into smaller parts, examine them in detail and show how these parts are related to each other. This may be supported by reference to current research or theories.
<b>Classify</b>	Organise information according to specific criteria.
<b>Compare</b>	Examine subjects in detail, giving the similarities and differences.
<b>Critically Compare</b>	As with compare, but extended to include pros and cons of the subject. There may or may not be a conclusion or recommendation as appropriate.
<b>Describe</b>	Provide detailed, factual information about a subject.
<b>Discuss</b>	Give a detailed account of a subject, including a range of contrasting views and opinions.
<b>Explain</b>	As with describe, but extended to include causation and reasoning.
<b>Identify</b>	Select or ascertain appropriate information and details from a broader range of information or data.
<b>Interpret</b>	Use information or data to clarify or explain something.
<b>Produce</b>	Make or create something.
<b>State</b>	Give short, factual information about something.
<b>Specify</b>	State a fact or requirement clearly and in precise detail.



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