ICTQual AB

Qualification Specification

ICTQual AB Level 3 Diploma in Quality Control Electrical

ICTQual AB's

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Qualification Specification about

ICTQual AB Level 3 Diploma in Quality Control Electrical

About ICTQual AB's

ICTQual AB is a distinguished awarding body based in the United Kingdom, dedicated to fostering excellence in education, training, and skills development. Committed to global standards, ICTQual AB's provides internationally recognized qualifications that empower individuals and organizations to thrive in an increasingly competitive world. Their offerings span diverse industries, including technical fields, health and safety, management, and more, ensuring relevance and adaptability to modern workforce needs.

ICTQual AB's delivers high-quality educational solutions through a network of Approved Training Centres worldwide. Their robust standards and innovative teaching methodologies equip learners with practical knowledge and skills for personal and professional growth. With a mission to inspire lifelong learning and drive positive change, ICTQual AB's continuously evolves its programs to stay ahead of industry trends and technological advancements.

Course Overview

The ICTQual AB Level 3 Diploma in Quality Control – Electrical is a competence-based vocational programme designed to develop essential knowledge, practical skills, and critical understanding required for quality control practices within electrical systems and installations. This course is structured around clearly defined standards and objectives to support the learner in mastering techniques of inspection, testing, fault identification, documentation, and compliance monitoring across various electrical environments. Learners will explore key electrical quality control principles, learn to identify non-conformities, and apply effective inspection and monitoring methods. Emphasis is placed on adherence to safety regulations, technical accuracy, and maintaining quality benchmarks in line with industrial standards. The programme ensures learners can interpret technical documentation, operate relevant inspection tools and instruments, and contribute actively to quality improvement and defect prevention within the scope of electrical work. Practical application, analytical thinking, and real-world safety compliance are integral to the learner's development throughout this qualification.

Course Aim

The primary aim of this course is to prepare individuals with the technical capability and professional discipline necessary to perform quality control tasks in electrical environments. It seeks to:

- Develop in-depth understanding of electrical quality control principles, standards, and safety practices.
- Equip learners with practical inspection, testing, and documentation skills relevant to electrical systems.
- Enhance the learner's ability to identify, report, and resolve quality issues and non-conformities.
- Promote the use of preventive actions, root cause analysis, and continuous improvement techniques.
- Instil a strong culture of accountability, compliance, and quality assurance within electrical work settings.

Objectives

Upon successful completion of this qualification, learners will be able to:

- Understand the principles of electrical quality control and their application in real-world environments.
- Identify and classify defects, deviations, and non-conformities in electrical installations.
- Apply inspection and testing techniques using industry-standard tools and methods.
- Interpret and complete relevant documentation such as checklists, reports, and compliance forms.
- Follow electrical safety procedures, regulations, and codes of practice during inspections.
- Evaluate the effectiveness of preventive and corrective actions to improve quality outcomes.

Target Audience:

This qualification is intended for:

- ✓ Individuals aspiring to begin a career in electrical quality control and inspection roles.
- ✓ Technicians, electricians, and maintenance operatives seeking to strengthen their knowledge in quality practices.
- ✓ Quality control assistants or support staff transitioning into more technically demanding inspection roles.
- ✓ Workers from construction, utilities, manufacturing, or maintenance backgrounds aiming to formalise their skills.
- ✓ Organisations seeking to train staff in systematic electrical inspection, fault diagnosis, and quality assurance methods.

Certification Framework

Qualification title	**ICTQual AB Level 3 Diploma in Quality Control Electrical**
Course ID	QC0009
Grading Type	Pass / Fail
Competency Evaluation	Coursework / Assignments / Verifiable Experience
Assessment	The assessment and verification process for ICTQual AB's qualifications involves two key stages: **Internal Assessment and Verification:** ✓ Conducted by the staff at the Approved Training Centre (ATC) to ensure learners meet the required standards through continuous assessments. ✓ Internal Quality Assurance (IQA) is carried out by the centre's IQA staff to validate the assessment process. **External Quality Assurance:** ✓ Managed by ICTQual AB's verifiers, who periodically review the centre's assessment and IQA processes. Verifies that assessments are conducted to the required standards and ensures consistency across centres

Entry Requirements

To enroll in the ICTQual AB Level 3 Diploma in Quality Control Electrical, learners must meet the following requirements:

- **Minimum Age**
  - Learners must be at least 18 years old at the time of enrolment
- **Educational Background**
  - A Level 2 qualification in electrical engineering, electronics, or a closely related technical field
  - Basic skills in mathematics and English to understand technical documentation and complete written assessments
- **Relevant Experience**
  - Although not mandatory, a minimum of 1 year of practical experience in electrical systems, inspection, or maintenance is strongly recommended
  - Prior experience will support better application of concepts in real-world electrical quality control environments

These criteria help ensure that learners have the foundational skills and background knowledge to succeed in the course and progress confidently into more advanced roles.

Qualification Structure

This qualification comprises 6 mandatory units. Candidates must successfully complete all mandatory units to achieve the qualification.

Mandatory Units	
Unit Ref#	Unit Title
QC0009-01	Principles of Electrical Quality Control and Inspection
QC0009-02	Electrical Testing Procedures and Equipment Calibration
QC0009-03	Compliance with Electrical Safety Standards and Regulations
QC0009-04	Fault Detection, Reporting, and Corrective Actions
QC0009-05	Documentation, Record Keeping, and Quality Auditing Techniques
QC0009-06	Quality Assurance in Electrical Installation Projects

Centre Requirements

To ensure quality training delivery, centres must adhere to the following standards:

1. Centre Approval

✓ Centres must be formally approved by ICTQual AB's before delivering this qualification.

✓ Approval involves a review of facilities, policies, and staff qualifications.

2. Qualified Staff

✓ **Tutors:** Must hold a recognised teaching or assessing qualification (e.g., Level 5 or higher in Teaching/Assessing) and have relevant industry experience in electrical quality control.

✓ **Assessors:** Must hold a recognized assessor qualification (e.g., CAVA, AVRA) or equivalent)

✓ **Internal Quality Assurers (IQAs):** Must hold a recognized IQA qualification (e.g. Level 4 Award in the IQA and Level 4 Certificate in Leading the IQA) and experience to oversee assessment standards.

3. Learning Facilities

Centre must offer:

✓ Private study areas and internet-enabled workspaces (for blended or physical delivery)

✓ Academic and pastoral support for learners

✓ Administrative support must be available to manage enrolment, tracking, and learner queries efficiently

4. Health and Safety Compliance

✓ All training facilities must comply with health and safety regulations.

✓ Centres must conduct regular risk assessments for practical activities.

5. Learning Resources

- ✓ **Course Materials:** Approved textbooks, study guides, and digital content must align with the qualification standards.

- ✓ **Assessment Tools:** Templates and guidelines must be provided to ensure standardized evaluation processes.

- ✓ **E-Learning Support:** Centres offering online or blended learning must implement an effective Learning Management System (LMS).

6. Assessment and Quality Assurance

- ✓ Centres must ensure assessments meet ICTQual AB's competency standards.

- ✓ Internal quality assurance (IQA) must be conducted to maintain consistency.

- ✓ External verifiers from ICTQual AB's will review assessment and training practices.

7. Learning Support

- ✓ **Qualification Guidance:** Support for coursework and assignments.
- ✓ **Career Pathway Assistance:** Information on progression opportunities in sustainability and energy sectors.
- ✓ **Accessibility Support:** Accommodations for learners with disabilities or language barriers.

8. Policies and Compliance

Centres must uphold the following policies in accordance with ICTQual AB's standards:

- ✓ Equality, Diversity, and Inclusion Policy.

- ✓ Health and Safety Policy.

- ✓ Safeguarding and Learner Protection Policy.

- ✓ Complaints and Appeals Procedure.

- ✓ Data Protection and Confidentiality Policy.

9. Reporting Requirements

- Centres must provide ICTQual AB's with regular reports on learner registrations, progress, and certification outcomes.

- Assessment records must be maintained for external auditing and quality assurance purposes.

Support for Candidates

Centres should ensure that materials developed to support candidates:

- ✓ Facilitate tracking of achievements as candidate's progress through the learning outcomes and assessment criteria.
- ✓ Include information on how and where ICTQual AB's policies and procedures can be accessed.
- ✓ Provide mechanisms for Internal and External Quality Assurance staff to verify and authenticate evidence effectively.

This approach ensures transparency, supports candidates' learning journeys, and upholds quality assurance standards.

Assessment

This qualification is competence-based, requiring candidates to demonstrate proficiency as defined in the qualification units. The assessment evaluates the candidate's skills, knowledge, and understanding against the set standards. Key details include:

1. **Assessment Process:**

   - ✓ Must be conducted by an experienced and qualified assessor.
   - ✓ Candidates compile a portfolio of evidence that satisfies all learning outcomes and assessment criteria for each unit.

2. **Types of Evidence:**

   - ✓ Observation reports by the assessor.
   - ✓ Assignments, projects, or reports.
   - ✓ Professional discussions.
   - ✓ Witness testimonies.
   - ✓ Candidate-produced work.
   - ✓ Worksheets.
   - ✓ Records of oral and written questioning.
   - ✓ Recognition of Prior Learning (RPL).

3. **Learning Outcomes and Assessment Criteria:**

   - ✓ **Learning Outcomes:** Define what candidates should know, understand, or accomplish upon completing the unit.
   - ✓ **Assessment Criteria:** Detail the standards candidates must meet to demonstrate that the learning outcomes have been achieved.

This framework ensures rigorous and consistent evaluation of candidates' competence in line with the qualification's objectives.

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Unit Descriptors

QC0009-01- Principles of Electrical Quality Control and Inspection

This unit introduces learners to the key ideas and practices involved in controlling the quality of electrical work. It explains why quality control is important and how it helps to maintain safe, reliable, and efficient electrical systems. Learners will understand how inspections are planned and carried out, and how to check if electrical work meets agreed standards. The unit also teaches how to recognise common quality problems and what steps can be taken to prevent them from happening again. By the end of the unit, learners will be confident in the basics of quality inspection for electrical systems.

Learning Outcome:	Assessment Criteria:
1. **Understand the objectives and importance of quality control in electrical systems.**	1.1 Explain the key objectives of quality control, such as ensuring safety, reliability, and compliance. 1.2 Differentiate between quality assurance and quality control in an electrical systems context. 1.3 Describe the potential impact of poor quality control on system performance, user safety, and project costs. 1.4 Justify the importance of a systematic quality control approach to address complex and non-routine installation problems.
2. **Identify inspection techniques used in various electrical environments.**	2.1 Describe at least three different visual inspection techniques for electrical installations. 2.2 Explain the purpose and application of functional testing methods used in different environments. 2.3 Compare and contrast non-destructive and destructive testing methods. 2.4 Evaluate which inspection techniques are most suitable for a given electrical environment. 2.5 Recognise the limitations of specific inspection techniques and propose alternative methods.
3. **Recognise non-conformities and quality deviations in installations.**	3.1 Define a non-conformity in an electrical installation with reference to industry standards. 3.2 Categorise different types of quality deviations (e.g., material, workmanship, design). 3.3 Provide examples of common non-conformities from both residential and industrial installations. 3.4 Interpret a set of inspection findings to identify specific quality deviations.

4. **Interpret quality control standards and their application in practice.**	4.1 Summarise the key requirements of a relevant national quality control standard.
	4.2 Explain how specific clauses of quality standards apply to practical inspection and testing tasks.
	4.3 Evaluate the significance of applying multiple quality standards to ensure comprehensive compliance.
	4.4 Discuss different approaches to applying standards based on project type and scope.
	4.5 Describe the procedural steps for updating quality control processes in response to new standards.
5. **Apply inspection schedules to ensure compliance and performance.**	5.1 Construct an inspection schedule for a defined electrical installation project.
	5.2 Justify the proposed frequency and scope of inspections based on project complexity and risk.
	5.3 Explain the process for securing sign-off and approval on completed inspections.
	5.4 Evaluate the effectiveness of an inspection schedule in ensuring continuous compliance.

QC0009-02- Electrical Testing Procedures and Equipment Calibration

This unit helps learners understand how to test electrical systems correctly and safely. It covers different types of tests, such as continuity, insulation resistance, and earth fault loop impedance tests. Learners will also learn how to use test tools like multimeters and insulation testers. A key part of this unit is making sure that testing equipment is properly calibrated, so that results are accurate. Learners will also understand how to follow testing procedures step-by-step, and how to handle test results with care and attention.

Learning Outcome:	Assessment Criteria:
1. **Perform standard electrical testing procedures safely and effectively.**	1.1 Demonstrate the safe use of personal protective equipment (PPE) and adherence to lock-out/tag-out procedures. 1.2 Execute a sequence of standard electrical tests (e.g., continuity, insulation resistance) according to industry best practices. 1.3 Explain the purpose and expected outcome of each test performed. 1.4 Complete a test report accurately, detailing all procedures and results. 1.5 Interpret the results of a set of tests to draw logical conclusions.
2. **Operate and calibrate testing instruments according to manufacturer guidelines.**	2.1 Select the correct testing instrument for a given electrical test. 2.2 Perform pre-use checks and basic calibration procedures on a testing instrument. 2.3 Follow manufacturer's instructions for the operation of a multi-meter and an insulation resistance tester. 2.4 Explain the importance of calibration and how it impacts the accuracy of test data.
3. **Record, interpret, and analyse test data for accuracy and consistency.**	3.1 Record test readings and data in a specified format. 3.2 Interpret test results by comparing them to established benchmarks and regulatory standards. 3.3 Analyse a set of test data to identify trends or inconsistencies. 3.4 Evaluate the reliability of recorded test data for use in official reports. 3.5 Propose corrective actions based on the analysis of test data.
4. **Identify faults or deviations through systematic testing methods.**	4.1 Design a systematic testing sequence to diagnose a complex, non-routine electrical fault. 4.2 Use test results to logically deduce the location and nature of a fault.

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4.3 Differentiate between a genuine fault and a test reading error.

4.4 Explain the theoretical basis for why a specific test would reveal a particular fault.

5. Ensure test equipment is maintained and certified for reliability.

5.1 Explain the need for a routine maintenance schedule for electrical test equipment.

5.2 Describe the procedural steps for sending equipment for professional calibration and certification.

5.3 Maintain an accurate log of equipment maintenance, calibration, and certification.

5.4 Identify the risks associated with using uncertified or faulty testing equipment.

QC0009-03- Compliance with Electrical Safety Standards and Regulations

In this unit, learners will study the laws, rules, and safety guidelines that apply to electrical work. They will learn how to follow local safety standards and codes of practice. The unit explains why compliance is important for avoiding accidents, protecting people, and ensuring the quality of work. Learners will explore key areas like safe working practices, use of personal protective equipment (PPE), isolation procedures, and electrical permits. It also covers how to identify and report unsafe conditions in the workplace.

Learning Outcome:	Assessment Criteria:
1. **Interpret international and national electrical safety regulations.**	1.1 Explain the purpose and scope of a key national electrical safety regulation. 1.2 Summarise the core requirements of an international safety standard. 1.3 Differentiate between mandatory regulations and advisory codes of practice. 1.4 Interpret a specific clause from a regulation and explain its practical implication for an installation. 1.5 Recognise different perspectives on regulatory compliance based on national and international standards.
2. **Apply regulatory requirements to daily inspection and testing tasks.**	2.1 Select the relevant regulation sections for a specific inspection task. 2.2 Justify a pass/fail decision on an installation based on a specific regulatory requirement. 2.3 Describe the procedural steps for handling a non-compliance issue during an inspection. 2.4 Explain how different regulatory frameworks may require different approaches to the same task.
3. **Promote safety-focused decision-making in electrical quality control.**	3.1 Explain the concept of risk assessment in relation to electrical safety. 3.2 Evaluate a scenario to identify potential safety risks and their consequences. 3.3 Propose solutions or recommendations that prioritise safety over other factors. 3.4 Communicate safety-critical information effectively to a variety of audiences. 3.5 Discuss the ethical considerations involved in safety-focused decision-making.

4. **Identify hazards and take corrective actions based on regulatory frameworks.**

    4.1 Recognise common electrical hazards through visual inspection.

    4.2 Categorise hazards according to their severity and risk level.

    4.3 Describe the immediate and long-term corrective actions for a specific hazard.

    4.4 Refer to the relevant regulation to justify a proposed corrective action.

5. **Maintain compliance documentation to meet legal and client standards.**

    5.1 Explain the legal and professional reasons for maintaining accurate compliance documentation.

    5.2 Prepare a compliant electrical installation certificate or report.

    5.3 Describe a systematic approach for storing and retrieving compliance documents.

    5.4 Provide examples of how compliance documentation is used in legal or insurance contexts.

    5.5 Explain the role of different parties in the sign-off process for compliance documentation.

QC0009-04- Fault Detection, Reporting, and Corrective Actions

This unit focuses on how to find faults in electrical systems, report them properly, and take the right steps to fix them. Learners will study different types of faults, such as short circuits, overloads, and wiring issues. The unit explains how to use testing tools to locate problems and how to describe faults clearly in reports. Learners will also learn how to suggest and apply corrective actions to restore proper operation. This unit encourages a problem-solving approach and promotes the importance of acting quickly and safely when faults occur.

Learning Outcome:	Assessment Criteria:
1. Detect common electrical faults through visual and technical inspections.	1.1 Identify visual indicators of common faults such as overheating, loose connections, and incorrect wiring. 1.2 Perform a logical sequence of tests to confirm a suspected fault. 1.3 Explain differences between a minor deviation and a critical fault. 1.4 Use both factual and procedural knowledge to explain the probable origin of a detected fault.
2. Report findings clearly using industry-accepted formats and terminology.	2.1 Complete a fault report form accurately, using standard electrical symbols and terminology. 2.2 Write a clear and concise summary of fault findings for a non-technical audience. 2.3 Explain the implications of a fault using evidence from tests and visual inspections. 2.4 Structure a report to include the location of the fault, the tests performed, and the findings. 2.5 Evaluate the clarity and completeness of a given fault report.
3. Recommend corrective actions to restore quality and system functionality.	3.1 Propose a range of technically feasible corrective actions for an identified fault. 3.2 Justify a recommended corrective action based on safety, cost, and long-term reliability. 3.3 Describe the procedural steps involved in implementing a specific corrective action. 3.4 Evaluate different approaches to a problem and select the most suitable solution.

4. **Collaborate with technical teams to implement repair strategies.**

4.1 Communicate fault findings and proposed actions to a technical team.

4.2 Participate in a discussion to agree on a repair strategy.

4.3 Describe the responsibilities of different roles within the team during a repair.

4.4 Verify that repair work has been completed correctly and to the required standard.

4.5 Summarise the outcome of the collaboration and the final repair solution.

5. **Track recurring faults to support continuous quality improvement.**

5.1 Maintain a log of recurring faults across different projects or sites.

5.2 Analyse fault data to identify patterns and root causes.

5.3 Propose preventative measures to address a recurring fault.

5.4 Contribute to a review meeting on continuous improvement, using evidence from fault tracking.

QC0009-05- Documentation, Record Keeping, and Quality Auditing Techniques

This unit teaches learners how to create and manage documents used in quality control. It covers the use of checklists, test certificates, inspection forms, and maintenance records. Learners will learn how to keep records up to date, accurate, and secure. The unit also introduces basic quality audit techniques, helping learners understand how audits are used to check that quality procedures are being followed. Learners will practise organising and reviewing documents as part of quality assurance and improvement activities.

Learning Outcome:	Assessment Criteria:
1. **Prepare and maintain accurate inspection and test records.**	1.1 Fill out a variety of inspection forms and certificates accurately. 1.2 Create a systematic filing structure for project documentation. 1.3 Explain the importance of chronological and dated records for accountability. 1.4 Review records for completeness and factual accuracy. 1.5 Explain how different record-keeping approaches can impact project efficiency.
2. **Understand the role of documentation in traceability and accountability.**	2.1 Explain how documentation can be used to trace a fault back to its origin. 2.2 Describe the role of documentation in establishing accountability for work performed. 2.3 Evaluate a set of records to determine compliance and identify missing information. 2.4 Discuss the legal and ethical implications of incomplete or inaccurate documentation.
3. **Learn principles of internal and external quality audits.**	3.1 Define the purpose and scope of an internal quality audit. 3.2 Differentiate between an internal audit and an external, third-party audit. 3.3 Summarise the typical stages of a quality audit process. 3.4 Explain the role of an auditee during an audit.
4. **Support audit processes with proper evidence and reports.**	4.1 Prepare a portfolio of evidence (e.g., test reports, certificates) for an audit. 4.2 Respond to auditor questions using factual and documented evidence. 4.3 Assist in the retrieval of specific records requested by an auditor. 4.4 Explain how audit findings can be used to improve quality management systems.

4.5 Collaborate with team members to ensure all requested documentation is provided.

5. **Implement documentation systems for quality assurance programmes.**

5.1 Describe the components of a digital documentation system for quality assurance.

5.2 Propose improvements to an existing documentation system to enhance efficiency and security.

5.3 Explain the procedural steps for implementing a new documentation system.

5.4 Justify the use of a particular system based on the nature of the work and compliance requirements.

QC0009-06- Quality Assurance in Electrical Installation Projects

This unit explores how to ensure quality during the installation of electrical systems. Learners will learn about planning quality checks before, during, and after installation work. The unit highlights the importance of working to agreed specifications, using the correct materials, and following approved methods. Learners will understand the role of teamwork, supervision, and communication in delivering quality results. It also covers how to review completed work, identify lessons learned, and take steps to improve future installations.

Learning Outcome:	Assessment Criteria:
1. **Apply quality assurance principles across the lifecycle of installation projects.**	1.1 Explain the difference between quality control and quality assurance in a project context. 1.2 Describe the key quality assurance activities at different project stages (e.g., design, procurement, installation). 1.3 Evaluate a project plan to identify where quality assurance principles have been applied. 1.4 Propose proactive quality assurance measures to prevent common problems. 1.5 Discuss how different approaches to quality assurance can be adapted for various project sizes.
2. **Develop checklists and control plans for installation activities.**	2.1 Design a pre-installation checklist for a specific electrical component. 2.2 Develop a quality control plan for a complex installation task. 2.3 Justify the inclusion of specific items on a checklist or plan based on standards. 2.4 Explain how control plans help to address non-routine and complex problems.
3. **Monitor contractor performance to ensure adherence to standards.**	3.1 Explain the methods used to monitor contractor performance (e.g., site visits, progress reports). 3.2 Identify signs of non-compliance or sub-standard work during an inspection. 3.3 Document and report performance deviations to project management. 3.4 Evaluate the effectiveness of monitoring in maintaining quality standards. 3.5 Describe the process of providing constructive feedback to a contractor on their performance.
4. **Identify and mitigate risks affecting installation quality.**	4.1 Identify potential risks to installation quality at the planning stage. 4.2 Explain the impact of specific risks (e.g.,

material shortages, poor communication) on a project.

4.3 Develop mitigation strategies for identified quality risks.

4.4 Evaluate the effectiveness of a risk mitigation plan.

5. Contribute to continuous improvement initiatives within project teams.

5.1 Provide constructive feedback on quality processes and procedures.

5.2 Participate in post-project reviews to identify areas for improvement.

5.3 Propose specific changes to improve a quality-related process.

5.4 Explain the benefits of a continuous improvement culture within an organisation.

5.5 Discuss different perspectives on how to implement improvement initiatives.

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