REGULATED QUALIFICATION FRAMEWORK (RQF)

QUALIFICATION SPECIFICATION

1. **LCL Awards Level 3 Award in the Initial Verification, Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations (601/5928/5)**

2. **LCL Awards Level 3 Award in the Initial Verification and Certification of Electrical Installations (601/5929/7)**

3. **LCL Awards Level 3 Award in the Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations (601/5930/3)**

1.0 Qualification Objectives

The objectives of the qualification are to:

1. Prepare learners to progress to a qualification in the same subject area but at a higher level or requiring more specific knowledge, skills and understanding
2. Prepare learners to progress to a qualification in another subject area.

2.0 Prior qualifications, knowledge, skill or understanding which learners are required to have achieved before taking the qualification

LCL Awards Level 3 Award in the Initial Verification and Certification of Electrical Installations (601/5929/7)

This qualification is aimed at experienced and practicing electrical operatives that do not hold, or wish to renew an initial verification qualification, or learners that may be new entrants to the electrotechnical industry. On application for the qualification, the Approved Centre (AC) will carry out an Initial Assessment of the learner's capability to complete the qualification.

As a minimum requirement learners shall have an understanding of electrical systems and shall hold the following qualification:

- BS 7671 Requirements for Electrical Installations (current edition) qualification.

This evidence must be documented and retained by the AC.

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LCL Awards Level 3 Award in the Initial Verification, Periodic Inspection and Testing, Condition Reporting and Certification of Electrical Installations (601/5928/5), and

LCL Awards Level 3 Award in the Periodic Inspection and Testing, Condition Reporting and Certification of Electrical Installations (601/5930/3)

These qualifications are aimed at experienced and practicing electrical operatives, they are not to be taken by learners with limited experience of working in the electrotechnical industry, or who do not already hold relevant Level 3 electrotechnical qualifications. On application for the qualification, the AC will carry out an Initial Assessment of the learner's capability to complete the qualification.

Learners with demonstrable experience and holding the following, will confirm their suitability to enrol on the qualification:

- Level 3 Electrotechnical vocational qualification, and a
- Level 3 Initial Verification of Electrical Installations qualification, and a
- BS 7671 Requirements for Electrical Installations (current edition) qualification.

Learners not holding the above qualifications, will be required to provide evidence to the AC of suitable alternative qualifications and/or provide confirmation of their related work experience, skills and knowledge of current electrical regulations. This evidence must be documented and retained by the AC.

Note:
For learners to meet the membership requirements of any competent person scheme, registration body or other professional recognition there may be additional requirements.

3.0 Other requirements which a learner must have satisfied before the learner will be assessed or before the qualification will be awarded

None.

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4.0 Qualification Framework

The qualification framework comprises of 3 qualification routes. Unit LCL-E3001 is a mandatory core unit, and at least one or both of units (LCL-E3002 and/or LCL-E3003) must be undertaken to gain the qualification.

Unit Title	Unit Reference Number	Type of Unit	Level	Credit Value	IVEI	PITCR	IVPICR
Inspection and Testing of Electrical Installations (ITEI) (Core Unit)	LCL-E3001	Knowledge	3	3	✓	✓	✓
The Initial Verification of Electrical Installations (IVEI)	LCL-E3002	Knowledge and Performance	3	2	✓		✓
The Periodic Inspection Testing and Condition Reporting of Electrical Installations (PITCR)	LCL-E3003	Knowledge and Performance	3	2		✓	✓

4.1 Qualification Time and Credit Value

- **The Initial Verification and Certification of Electrical Installations:**
  - The Total Qualification Time (TQT) is 50 hours
  - The Guided Learning Hours (GLH) are 35
  - The total credit value of the qualification is 5.

- **The Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations:**
  - The Total Qualification Time (TQT) is 50 hours
  - The Guided Learning Hours (GLH) are 35
  - The total credit value of the qualification is 5.

- **The Initial Verification, Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations:**
  - The Total Qualification Time (TQT) is 70 hours
  - The Guided Learning Hours (GLH) are 50
  - The total credit value of the qualification is 7.

4.2 Qualification Level

The qualifications have been assigned at Level 3.

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4.3 Grading Structure

The grading structure for the qualification is that learners are required to achieve a result of **Pass** to be awarded credit for each unit.

This qualification will be achieved when learners have successfully completed:

- The LCL Awards set and marked multiple choice knowledge examination
- The LCL Awards set and AC marked performance assessments.

4.4 Assessment Methods

The assessment methods within the qualification include an online multiple choice knowledge examination and an AC marked performance assessment.

The assessment methods have been designed to assess the knowledge, understanding and skills of learners.

The online multiple choice examination is set and marked by LCL Awards.

The performance assessment is set by LCL Awards and marked by an LCL Awards approved assessor at the AC.

5.0 The criteria against which learners' level of attainment will be measured

The Learning Outcomes and Assessment Criteria against which learners' level of attainment will be measured are detailed in the examination and assessment specification for each unit below.

LCL-E3001: Inspection and Testing of Electrical Installations

Learning Outcome 01: The learner will know the requirements for completing the safe isolation of electrical circuits and installations.

The learner will demonstrate knowledge of:

1.1. The requirements of the Electricity at Work Regulations for the safe inspection of electrical systems and equipment
1.2. The appropriate procedure for completing safe isolation
1.3. The reasons for carrying out safe isolation
1.4. The implications of not carrying out safe isolation
1.5. The Health and Safety requirements that apply when inspecting and testing electrical installations
1.6. The considerations which need to be made during the inspection and testing process to ensure the safety of the persons and livestock on the premises.

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Learning Outcome 02: The learner will know the requirements for the use of test instruments used to carry out inspection and testing of electrical installations**.**

The learner will demonstrate knowledge of:

2.1. The appropriate instrument for each test to be carried out when testing electrical installations
2.2. The correct scale or setting when carrying out testing of electrical installations
2.3. The requirements for the safe use of instruments to be used for testing electrical installations, to include:
   a) Checks required to prove that test instruments are safe, functioning correctly and are fit for purpose
   b) The requirements for test leads and probes.

Learning Outcome 03: The learner will know the requirements for completing the inspection of electrical installations.

The learner will demonstrate knowledge of:

3.1. The requirements to be checked during the inspection process including switchgear, wiring accessories, lighting controls and points, socket-outlets, junction boxes, wiring systems and cables
3.2. The human senses which are appropriate for inspection and how they can be used
3.3. Types of special installations and locations and their associated risks
3.4. The requirements of special installations or locations as identified in BS 7671
3.5. A safe system of work prior to work commencing
3.6. The required competence of persons undertaking the inspection of an installation
3.7. The requirements for protected escape routes.

Learning Outcome 04: The learner will know the requirements for testing before circuits are energised.

The learner will demonstrate knowledge of:

4.1. Why it is necessary to verify continuity of conductors, to include:
   - protective bonding conductors
   - circuit protective conductors
   - ring final circuit conductors.

4.2. The methods for verifying continuity, to include:
   - protective bonding conductors
   - circuit protective conductors
   - ring final circuit conductors.

4.3. The factors that affect conductor resistance values
4.4. The purpose of carrying out insulation resistance testing
4.5. The effects on insulation resistance values that the following can have:
   - cables connected in parallel
   - ambient temperature

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- variations in cable length.

4.6. Why it is necessary to verify polarity
4.7. The different procedures for verifying polarity, including the incoming supply
4.8. The methods for measuring earth electrode resistance to include:
    - installations forming part of a TT system
    - generators and transformers.
4.9. The cause of voltage drop in an electrical installation
4.10. The voltage drop of an electrical circuit.

Learning Outcome 05: The learner will know the requirements for testing energised installations.

The learner will demonstrate knowledge of:

5.1. The common earth fault loop impedance paths
5.2. The methods for verifying protection by automatic disconnection of supply
5.3. The requirements for the measurement of prospective fault current
5.4. The methods for determining prospective fault current
5.5. The suitability of protective devices for prospective fault current
5.6. The methods for testing the correct operation of residual current devices
5.7. The reasons for verifying phase sequence
5.8. The method used to verify phase sequence
5.9. The reasons for functional testing
5.10. Items which require functional testing.

LCL-E3002: The Initial Verification of Electrical Installations (IVEI)

Learning Outcome 01: The learner will know the requirements for the initial verification, testing and commissioning of electrical installations.

The learner will demonstrate knowledge of:

1.1. The purpose of the initial verification of electrical installations
1.2. The requirements of the initial verification of electrical installations
1.3. The relevant documents associated with the initial verification of an electrical installation
1.4. The information required to conduct the initial verification of an electrical installation
1.5. The tests to be carried out during the initial verification of an electrical installation
1.6. Why testing is carried out in a specific sequence
1.7. Why it is necessary for test results to comply with standard values
1.8. The actions to be taken in the event of unsatisfactory results being obtained
1.9. The commissioning procedures to adopt on completion of initial verification of an electrical installation.

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Learning Outcome 02: The learner will know the requirements for the completion of electrical installation certificates and associated documentation.

The learner will demonstrate knowledge of:

2.1. The purpose of certification and associated documentation
2.2. The information that must be contained in an Electrical Installation Certificate and associated documentation
2.3. The requirements for the recording, issuing and retention of completed Electrical Installation Certificates and associated documentation
2.4. The relevant persons and their responsibilities in relation to the completion of an Electrical Installation Certificate and associated documentation.

Learning Outcome 03: The learner will be able to confirm safe systems of work and the suitability of the electrical installation for initial verification**.**

The learner will be able to:

3.1. Identify a safe system of work
3.2. Confirm the electrical installation is isolated from the supply prior to carrying out the initial verification process
3.3. Comply with personal health and safety requirements and that of others.
3.4. Carry out the procedures for dealing with relevant persons during the initial verification process
3.5. Identify any obvious signs of non-compliance with the electrical installation prior to commencing the initial verification process.

Learning Outcome 04: The learner will be able to test electrical installations prior to them being placed into service.

The learner will be able to:

4.1. Select the appropriate test instruments and their accessories for testing:
- continuity of conductors
- insulation resistance
- polarity
- earth electrode resistance
- earth fault loop impedance
- prospective fault current
- RCD operation
- phase sequence
- functional testing.

4.2. Carry out and record test results to confirm:
- continuity of protective conductors
- continuity of ring final circuit conductors
- insulation resistance

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- polarity
- earth fault loop impedance
- prospective fault current
- additional protection
- phase sequence
- functional testing
- verification of voltage drop.

4.3. Compare and analyse test results with standard requirements

Learning Outcome 05: The learner will be able to complete and report the outcome of the initial verification and issue the Electrical Installation Certificate to the client.

The learner will be able to:

5.1. Complete an Electrical Installation Certificate
5.2. Complete Schedules of Inspections
5.3. Complete Generic Schedules of Circuit Details
5.4. Complete Generic Schedules of Test Results
5.5. Handover certification and documentation to the client with appropriate information.

Learning Outcome 06: The learner will be able to commission the electrical installation.

The learner will be able to:

6.1. Clarify the commissioning procedures with relevant persons
6.2. Commission the electrical installation and leave ready for use.

LCL-E3003: The Periodic Inspection Testing and Condition Reporting of Electrical Installations (PITCR)

Learning Outcome 01: The learner will know the requirements for periodic inspecting and testing of electrical installations.

The learner will demonstrate knowledge of:

1.1. The purpose of periodic inspection and testing of an electrical installation
1.2. The requirements of the periodic inspection and testing of an electrical installation
1.3. The relevant documents associated with the periodic inspection and testing and condition reporting of an electrical installation
1.4. The information that is required to conduct the periodic inspection and testing of an electrical installation
1.5. The need to determine the extent and limitations for the periodic inspection and testing of an electrical installation with the client and interested third parties
1.6. The application of sampling when carrying out periodic inspection and testing of an electrical installation to include:
    - factors which determine the extent of sampling

- situations where sampling may not be appropriate

1.7. The reason(s) why agreements made with the client and interested third parties are recorded on the Electrical Installation Condition Report
1.8. Why periodic inspection and testing of electrical installations differs to the initial verification of electrical installations
1.9. The tests which can be conducted during the periodic inspection and testing of an electrical installation and the tests which may differ from those undertaken during the initial verification of electrical installations
1.10. The purpose of the observations and classification codes in regards to:
    - the observations to be recorded
    - appropriate recommendations to be made.
1.11. The action to be taken if a dangerous situation is identified
1.12. The action to be taken when the extent and limitations agreed may not be achieved
1.13. Why fault finding and remedial work does not form part of the periodic inspection process
1.14. The difference between defects and non-compliances
1.15. Why it is necessary to confirm whether test results comply with standard values
1.16. Safety in relation to diverted neutral currents.

Learning Outcome 02: The learner will know the requirements for the completion of Electrical Installation Condition Reports and associated documentation.

The learner will demonstrate knowledge of

2.1. The purpose of an Electrical Installation Condition Report and associated documentation
2.2. The information that must be recorded on an Electrical Installation Condition Report and associated documentation
2.3. The requirements for the recording, issuing and retention of completed Electrical Installation Condition Reports and associated documentation
2.4. The appropriate methods for providing information to a client following completion of the Electrical Installation Condition Report and associated documentation
2.5. The appropriate classification codes to be allocated to documented observations.

Learning Outcome 03: The learner will be able to confirm safe systems of work and the suitability of the electrical installation for periodic inspection and testing

The learner will be able to:

3.1. Identify a safe system of work
3.2. Carry out safe isolation procedures
3.3. Comply with personal health and safety requirements and that of others
3.4. Carry out the procedures for dealing with relevant persons during the periodic inspection and testing process
3.5. Identify any obvious signs of distress or non-conformance with an electrical installation prior to commencing the periodic inspection and testing process.

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Learning Outcome 04: The learner will be able to carry out testing of electrical installations.

The learner will be able to:

4.1. Select the appropriate test instruments and their accessories for testing:
- continuity of conductors
- insulation resistance
- polarity
- earth electrode resistance
- earth fault loop impedance
- prospective fault current
- RCD operation
- phase sequence
- functional testing.

4.2. Carry out and record test results to confirm:
- continuity of protective conductors
- continuity of ring final circuits
- insulation resistance
- polarity
- earth fault loop impedance
- prospective fault current
- additional protection
- phase sequence
- functional testing
- verification of voltage drop.

4.3. Compare and analyse test results with standard requirements and previous test results and determine if further action is required.

Learning Outcome 05: The learner will be able to complete and report on the condition of the electrical installation to the client.

The learner will be able to*:*

5.1. Complete an Electrical Installation Condition Report
5.2. Complete Schedules of Inspections
5.3. Complete Generic Schedules of Circuit Details
5.4. Complete Generic Schedules of Test Results
5.5. Handover relevant reporting documentation to the client with appropriate information and guidance regarding actions to be taken
5.6. Identify observations and recommendations to be recorded on the Electrical Installation Condition Report.

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6.0 Other Information

Qualification Regulator Numbers:

The Initial Verification, Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations.

- Ofqual QAN 601/5928/5
- Qualifications Wales QW C00/0707/7

The Initial Verification and Certification of Electrical Installations:

- Ofqual QAN 601/5929/7
- Qualifications Wales QW C00/0707/6

The Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations:

- Ofqual QAN 601/5930/3
- Qualifications Wales QW C00/0707/8

Sector Skills Area: SSA: 05.2 Building and Construction.

Age suitability: 16 plus.

Last Qualification Review Date June 2024

Next Qualification Review Date: 30.06.2027

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