REGULATED QUALIFICATION FRAMEWORK (RQF)

QUALIFICATION SPECIFICATION

- **LCL Awards Level 3 Award in the Initial Verification and Certification of Electrical Installations.**

- **LCL Awards Level 3 Award in the Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations.**

- **LCL Awards Level 3 Award in the Initial Verification, Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations.**

1. Objective:

The qualification allows learners to continue to learn, develop and practise the skills required for employment within the electrotechnical sector. The Learner will be able to: - Understand the requirements for completing the safe isolation of electrical circuits and installations. Understand the requirements for the use of test instruments used to carry out inspection and testing of electrical installations. Understand the requirements for completing the inspection of electrical installations. Understand the requirements for testing before circuits are energised. Understand the requirements for testing energised installations. Understand the requirements for the initial verification, testing and commissioning of electrical installations. Understand the requirements for the completion of electrical installation certificates and associated documentation.

Be able to confirm safe systems of work and the suitability of the electrical installation for initial verification. Be able to test electrical installations prior to them being placed into service. Be able to complete and report the outcome of the initial verification and issue the electrical installation certificate to the client. Be able to commission the electrical installation.

Understand the requirements for periodic inspecting and testing of electrical installations. Understand the requirements for the completion of electrical installation condition reports and associated documentation. Be able to confirm safe systems of work and the suitability of the electrical installation for periodic inspection and testing. Be able to carry out testing of electrical installations. Be able to complete and report the condition of the electrical installation to the client.

The target groups for the qualification are those learners who are;

1. Updating occupational competence, continuous professional development and or obtaining a licence to practice

2. Preparing for further learning or training and/or developing knowledge and or skills in a subject area who are existing workers in the occupation seeking to extend their range of work}

2. Qualification Framework:

The qualification comprises of 1 mandatory Unit and 2 qualification specific units;

Unit Title	Unit Reference Number	Type of Unit	Level	Credit Rating	IVEI	PITCR	IVPICR
Inspection and Testing of Electrical Installations	LCL-E3001	Knowledge only	3	3	✓	✓	✓
The Initial Verification of Electrical Installations	LCL-E3002	Combi	3	2	✓		✓
The Periodic Inspection Testing and Condition Reporting of Electrical Installations	LCL-E3003	Combi	3	2		✓	✓

Qualification structures:

LCL Awards Level 3 Award in the Initial Verification and Certification of Electrical Installations. (IVEI21)

- The Guided Learning Hours (GLH) are 35 hours
- The Total Qualification Time (TQT) is 50 hours
- The total credit required to achieve the qualification is 5
- QAN 601/5929/7
- QW C00/0707/6
- To achieve the qualification, learners must successfully complete the core unit plus the IVEI unit.

LCL Awards Level 3 Award in the Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations. (PITCREI21)

- The Guided Learning Hours (GLH) are 35 hours
- The Total Qualification Time (TQT) is 50 hours
- The total credit required to achieve the qualification is 5
- QAN 601/5930/3
- QW C00/0707/8
- To achieve the qualification, learners must successfully complete the core unit plus the PITCR unit.

LCL Awards Level 3 Award in the Initial Verification, Periodic Inspection, Testing, Condition Reporting and Certification of Electrical Installations. (IVPICR21)

- The Guided Learning Hours (GLH) are 50 hours
- The Total Qualification Time (TQT) is 70 hours
- The total credit required to achieve the qualification is 7
- QAN 601/5928/5
- QW C00/0707/7
- To achieve the qualification, learners must successfully complete the core unit plus both IVEI & PITCR units.

Condition of certification:
Learners must hold a current BS7671: prior to certification of this qualification

3. Unit Grading Structure:

The learner is required to successfully achieve a pass in each unit for this qualification to be awarded.

4. Unit specifications:

LCL-E3001: Inspection and Testing of Electrical Installations
Assessment method (MC O/L)

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

1.01. the requirements of the Electricity at Work Regulations for the safe inspection of electrical systems and equipment.
1.02. the appropriate procedure for completing safe isolation.
1.03. the reasons for carrying out safe isolation.
1.04. the implications of not carrying out safe isolation.
1.05. the Health and Safety requirements that apply when inspecting and testing electrical installations.
1.06. 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.

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

2.01. the appropriate instrument for each test to be carried out when testing electrical installations:
2.02. the correct scale or setting when carrying out testing of electrical installation
2.03. 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 lead and probes.

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

3.01. the requirements to be checked during the inspection process including General, Switchgear, General wiring accessories, lighting controls and points, socket outlets, junction boxes, conduit and trunking systems and cable systems
3.02. the human senses which are appropriate for inspection and testing and how they can be used
3.03. the meaning of the term Special Installations and locations
3.04. additional requirements for Special installations or locations as identified in BS 7671
3.05. a safe system of work prior to work commencing

Learning Outcome 04: The learner will demonstrate knowledge of; the requirements for testing before circuits are energised.

4.01. why it is necessary to verify continuity to include:
- Protective bonding conductors
- Circuit protective conductors
- Ring final circuit conductors

4.02. the methods for verifying continuity to include:
- Protective conductors
- Circuit protective conductors
- Ring final circuit conductors

4.03. the factors that affect conductor resistance values:
4.04. the purpose of carrying out insulation resistance testing.
4.05. the effects on insulation resistance values that the following can have
- Cables connected in parallel
- Ambient temperature
- Variations in cable length

4.06. why it is necessary to verify polarity
4.07. the different procedures for verifying polarity including the incoming supply.
4.08. the methods for measuring earth electrode resistance to include:
- Installations forming part of a TT system
- Generators and transformers

4.09. the cause of voltage drop in an electrical installation
4.10. the voltage drop of an electrical circuit

Learning Outcome 05: The learner will demonstrate knowledge of; the requirements for testing energised installations.

5.01. the common earth fault loop paths.
5.02. the methods for verifying protection by automatic disconnection of supply.
5.03. the requirements for the measurement of prospective fault current.
5.04. the methods for determining prospective fault current
5.05. the suitability of protective devices for prospective fault currents
5.06. the methods for testing the correct operation of residual current devices
5.07. the reasons for verifying phase sequence
5.08. the method used to verify phase sequence
5.09. the reasons for functional testing
5.10. items which require functional testing

LCL-E3002 The Initial Verification of Electrical Installations (IVEI)
Assessment Method {MC O/L-RWE}

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

1.01. the purpose of the Initial Verification of electrical installations.
1.02. the requirements of the initial verification of electrical installations.
1.03. the relevant documents associated with the initial verification of an electrical installation.
1.04. the information required to conduct the initial verification of an electrical installation.
1.05. the tests to be carried out during the initial verification of an electrical installation
1.06. why testing is carried out in a specific sequence
1.07. why it is necessary for test results to comply with standard values

1.08. the actions to be taken in the event of unsatisfactory results being obtained
1.09. the commissioning procedures to adopt on completion of initial verification of an electrical installation

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

2.01. the purpose of certification and associated documentation
2.02. the information that must be contained on an electrical installation certificate.
2.03. the requirements for the recording, issuing and retention of completed electrical installation certificates and associated documentation
2.04. the relevant persons and their responsibilities in relation to the completion of an electrical installation certificate

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

3.01. identify a safe system of work
3.02. confirm the electrical installation is disconnected from the supply prior to carrying out the initial verification process
3.03. comply with personal health and safety requirements and that of others.
3.04. carry out the procedures for dealing with clients during the initial verification process
3.05. identify any obvious signs of non-conformance 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.

4.01. select the test instruments and their accessories for tests to include:
- continuity
- insulation resistance
- polarity
- earth electrode resistance
- earth fault loop impedance
- prospective fault current
- RCD operation
- phase sequence
- functional testing

4.02. carry out and records tests to confirm:
- continuity of;
  - main protective bonding conductors
  - circuit protective conductors
  - ring final circuits conductors
- insulation resistance
- polarity
- external earth fault loop impedance
- system earth fault loop impedance
- prospective fault current
- RCD operation including additional protection

- phase sequence/rotation
- functional testing

4.03. 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.

5.01. complete a schedule of inspection
5.02. complete a generic schedule of test results
5.03. complete the electrical installation certificate
5.04. handover relevant reporting documentation to the client with appropriate information and guidance regarding actions to be taken.

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

6.01. clarify the commissioning procedures with relevant persons
6.02. commission the electrical installation and leave ready for use.

Performance Assessments:
Where this assessment is conducted in full or in part, either in the work place or a simulated Realistic Work Environment (RWE), the performance assessment must be carried out using installations that will enable the learner to demonstrate competence in the Initial Inspection and Testing, Commissioning and Handover to the end user of a new electrical installation and associated components covered by this assessment and that the assessment will enable the Unit's performance and knowledge assessment criteria to be met in a full, professional and competent manner.

Workplace Performance Assessments:
Workplace performance assessments must be undertaken with the learner being directly supervised by an electrically competent person.
It is the responsibility of the assessor to ensure that;

- *The assessment being undertaken by the learner is carried out in accordance with the requirements of prevailing legislation and normative standards at the time of assessment.*
- *A risk assessment has been carried out by the learner and that the assessment has taken into account and mitigated potential or actual risks either before or during the assessment.*
- *The supervising engineer holds valid certificates of competence in the areas of work being undertaken by the learner.*
- *Confirmation has been given by the responsible person of the property for the work to be carried out.*

Realistic Work Environment (RWE) Assessments:
The assessment must be undertaken an installed fixed system. The assessment facility/equipment must simulate a realistic and working electrical installation as prescribed by LCL (further details can be found in the Centre Guidance documentation).
The assessment task must be undertaken using fit-for-purpose tools and equipment and include realistic completion deadlines and other commercial requirements.

LCL-E3003: The Periodic Inspection Testing and Condition Reporting of Electrical Installations (PITCR)
Assessment Method {MC O/L-RWE}

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

1.01. the purpose of periodic inspection and testing of an electrical installation.
1.02. the requirements of the periodic inspection and testing of an electrical installation.
1.03. the relevant documents associated with the periodic inspection and testing and condition reporting of an electrical installation.
1.04. the information that is required to conduct the periodic inspection and testing of an electrical installation
1.05. the need to determine the Extent and Limitations of periodic inspection and testing of an electrical installation with the client and interested third parties prior to undertaking the inspection.
1.06. 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

1.07. the reason(s) why agreements made with the client and interested third parties are recorded on the condition report
1.08. why periodic inspection and testing of electrical installations differs to that published for initial verification of electrical installations
1.09. the tests which can be carried out during periodic inspection of an electrical installation.
1.10. which tests may differ from those undertaken during the initial verification of electrical installations
1.11. the purpose of the observations and classification codes in regards to
- the observations to be recorded
- appropriate recommendations to be made

1.12. the action to be taken if a dangerous situation is identified.
1.13. the action to be taken when the Extent and Limitations agreed may not be achieved.
1.14. why fault finding and remedial work does not form part of the periodic inspection process.
1.15. the difference between defects and non-compliances.
1.16. why it is necessary to confirm whether test results comply with standard values

Learning Outcome 02: The learner will demonstrate knowledge of; the requirements for the completion of electrical installation condition reports and associated documentation.

2.01. the purpose of an electrical installation condition report and associated documentation
2.02. the information that must be recorded on an electrical installation condition report.
2.03. the requirements for the recording, issuing and retention of completed electrical installation condition reports and associated documentation
2.04. the appropriate methods for providing information to a client following completion of the electrical installation condition report

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.

3.01. identify a safe system of work
3.02. carry out safe isolation procedures
3.03. comply with personal health and safety requirements and that of others.
3.04. carry out the procedures for dealing with clients during the periodic inspection process

3.05. identify any obvious signs of distress or non-conformance in dwellings and other premises with the electrical installation prior to commencing the periodic inspection and testing process

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

4.01. select the test instruments and their accessories for tests to include:
- Insulation resistance
- Earth electrode resistance
- Earth fault loop impedance
- Prospective fault current
- Phase sequence
- RCD Operation

4.02. carry out and records tests to confirm:
- The continuity of protective conductors and ring final circuits
- Polarity
- System earth fault loop impedance
- Prospective fault current
- Phase sequence/rotation
- Functional testing
- Additional protection
- Verification of voltage drop

4.03. compare and analyse test results with standard requirements and previous test results, determine if further action is required.

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

5.01. complete a condition report inspection schedule
5.02. complete an electrical installation condition report
5.03. handover relevant reporting documentation to the client with appropriate information and guidance regarding actions to be taken.
5.04. verbally explain any observations and recommendations made reported on the electrical installation condition report

Performance Assessments:
Where this assessment is conducted in full or in part, either in the work place or a simulated Realistic Work Environment (RWE), the performance assessment must be carried out using installations that will enable the learner to demonstrate competence in the Periodic Inspection, Testing and Condition Reporting of an existing Electrical Installation to the person ordering the work and any associated components covered by this assessment and that the assessment will enable the Unit's performance and knowledge assessment criteria to be met in a full, professional and competent manor.

Workplace Performance Assessments:
Workplace performance assessments must be undertaken with the learner being directly supervised by an electrically competent person.
It is the responsibility of the assessor to ensure that;

- *The assessment being undertaken by the learner is carried out in accordance with the requirements of prevailing legislation and normative standards at the time of assessment.*
- *A risk assessment has been carried out by the learner and that the assessment has taken into account and mitigated potential or actual risks either before or during the assessment.*
- *The supervising engineer holds valid certificates of competence in the areas of work being undertaken by the learner.*
- *Confirmation has been given by the responsible person of the property for the work to be carried out.*

Realistic Work Environment (RWE) Assessments:
The assessment must be undertaken an installed fixed system. The assessment facility/equipment must simulate a realistic and working electrical installation as prescribed by LCL (further details can be found in the centre guidance documentation).
The assessment task must be undertaken using fit-for-purpose tools and equipment and include realistic completion deadlines and other commercial requirements.

4. National Occupational Standard:

The Units used in this qualification have a direct relationship with the National Occupational Standards for the areas of work contained within.

5. RQF Descriptor Level {3}.

Knowledge descriptor: *(the holder can)*

- *Has factual, procedural and theoretical knowledge and understanding of a subject or field of work to complete tasks and address problems that while well-defined, may be complex and non-routine.*
- *Can interpret and evaluate relevant information and ideas.*
- *Is aware of the nature of the area of study or work.*
- *Is aware of different perspectives or approaches within the area of study or work*.

Skills Descriptor *(the holder can)*

- *Identify, select and use appropriate cognitive and practical skills, methods and procedures to address problems that while well defined, may be complex and non-routine.*
- *Use appropriate investigation to inform actions.*
- *Review how effective methods and actions have been.*

6. Prior qualifications, knowledge, skill or understanding which the learner is required to have before taking this qualification. (Pre-requisites)

Learners wishing to participate on this program needs to be deemed able to complete. This would normally mean a qualified electrician or working as an electrician. It is a requirement on the Approved Centre (AC) to ensure that an Initial Assessment (IA) of a learners' capability to complete a qualification is carried out prior to registration. LCL guidance is provided to an AC on the methods which can be used to carry out the IA.

7. Units which a learner must have completed before the qualification will be awarded and any optional routes.

Learners must complete the mandatory units as listed in section 2 of this specification before the qualification(s) will be awarded.

8. Other requirements which a learner must have satisfied before the learner will be assessed or before the qualification will be awarded. None

9. The design and delivery of the examination associated with these units are based on the following documents;

- BS 7671:2018 Requirements for Electrical Installations:
- IET Guidance Note 3.
- HSE Guidance GS38.

10. 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 Sections 2 and 4 of this specification.

11. Planned exemptions; None

12. Specimen assessment materials; None

13. Specified levels of attainment;

Learners must pass all the mandatory units as listed in section 2 of this specification for the qualification to be awarded.

14. Other information; None

SSAs: 5.2 Construction **Review Date** 31/03/2025

Assessment and Examination Terminology

AC – *Approved Centre; an examination conducted either at the approved centre or a location approved by the centre, using staff approved by the centre to conduct the examination.*

CBSR – ***Closed Book*** *Short Response; Short response written questions will be set by the awarding organisation and administered and marked locally at the approved centre by approved markers. Learners will be prohibited from using industry normative or informative documents.*

CE – *Customer Evidence; evidence provided by a customer in the form of a written witness statement confirming a competent performance by the learner. That evidence may also be provided by an employing supervisor or manager of the learner. Witness statements that relate to a technical competence will only be accepted from a person technically competent in that particular activity to provide the statement.*

IK – *Inferred Knowledge; inferred knowledge is assessed as part of a performance assessment by a centre approved assessor. To deem the learner as having sufficient knowledge the learner must satisfactorily pass the performance assessment.*

LE – *Learner Evidence; learner generated evidence is for example documented recordings of readings, calculations or the production of a risk assessment or other procedural document.*

MC – *Multiple Choice; set by the awarding organisation and administered and marked locally or electronically. Learners will be able to answer multi-choice questions using reference to appropriate industry normative or informative sources.*

O/L – on-line: a secure web-based assessment system (XAMS)

OP – *Observed Performance; the assessment of a learner's performance by an approved assessor either in the learner's work place or at the approved centre or a location approved by the centre.*

OQ – *Oral Questions; oral questions may be asked by an assessor as part of a performance assessment or knowledge examination to confirm the understanding of the criteria by the learner*.

PA – *Performance Assessment; a performance assessment conducted either in the learner's work place or at the approved centre or a location approved by the centre.*

RWE – *Realistic Work Environment; an area at the approved centre or a location approved by the centre which replicates and has the features of a Work Place. The learner must not be permitted to be familiar with the simulated environment prior to undertaking assessment*.

SR – Short Response questions

WP – *Work Place; is the naturally occurring environment in which the learner works, typically that would be in a customer's premise where work is being paid for by the customer*.