

Unit 75: Commissioning Electrical Installations in Building Services Engineering

Unit code: R/600/0405

QCF Level: 3

Credit value: 10

Guided learning hours: 60

Unit aim

The aim of this unit is to give learners the opportunity to gain knowledge of the purpose of commissioning electrical installations, and an understanding of the inspection and testing process used to provide reports to gain certification.

Learning outcomes and assessment criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes	Assessment criteria
1 Know the requirements for inspection, testing and commissioning of electrical installations	1.1 Describe safe isolation procedures
	1.2 State the conditions for periodic inspection
	1.2 List sources of information for inspection and testing
2 Understand the inspection process for electrical installations	2.1 Discuss the procedure for carrying out visual inspections
	2.2 Explain the procedure for dealing with unsatisfactory inspection results
3 Understand how to carry out testing and commissioning operations	3.1 Discuss the suitability of different instruments for specific test procedures
	3.2 Explain how to carry out testing and commissioning operations
	3.3 Explain the procedure for dealing with unsatisfactory test results

4 Understand the certification and reporting process	4.1 Compare different certification processes
	4.2 Explain the procedure for dealing with report forms and associated documentation

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THIS IS AN ACCREDITED SPECIFICATION AND CAN BE USED FOR TEACHING AND ASSESSMENT

Unit content

1 Know the requirements for inspection, testing and commissioning of electrical installations

Requirements for inspection, testing and commissioning: new installations; factors to be considered; periodic inspection; sources of information

New installations: initial verification; compliance with regulations; meeting design specifications; safety in use

Factors to be considered: safety precautions; assessment of safe working practice; permit to work; isolation, purpose and usage of systems and equipment; identification of circuits; equipment; test procedures; test instruments; correct methods; relevant data; accurate labelling; recording; contact with relevant parties; customers; clients

Periodic inspection: change of use of buildings; alterations; additions to electrical systems; damage

Sources of information: current British Standards; contract specification; distribution and wiring diagrams; schedules; manufacturer instructions; previous test results (if any); relevant statutory legislation

2 Understand the inspection process for electrical installations

Inspection: visual inspection of main intake/switchboard connections; power circuits; lighting circuits; conduit; trunking; cable tray; components; procedure to be followed if inspection results are unsatisfactory

3 Understand how to carry out testing and commissioning operations

Testing and commissioning operations: test methods; instruments

Instruments: multimeter; wattmeter; tong tester; earth loop impedance tester; low-ohm continuity tester; insulation resistance tester; residual current device and prospective short-circuit current tester; approved voltage indicator; proving unit; verifying test instruments; calibration procedure; use of documentary evidence

Test methods: sequence of tests; precautions to be taken; continuity; insulation resistance; polarity; earth fault loop impedance; earth electrode resistance; operation of residual current devices; functional testing; test values; reasons for unsatisfactory results; action to be taken

4 Understand the certification and reporting process

Certification: people responsible for design, testing and construction; electrical installation certificate; schedule of inspection; schedule of test results; minor works certificate; periodic inspection report

Reporting process: report forms; documentation; operation and maintenance manual