

## TESTING OF ELECTRICAL INSTALLATION

**UNIT CODE: ENG/CU/EI/CR/03/5**

### Relationship to Occupational Standards

This unit addresses the unit of competency: Perform Testing of Electrical Installation

**Duration of Unit:** 60 hours

### Unit Description

This unit covers the competencies required to carry out inspection and testing of an electrical installation. It covers testing activities starting from verifying the installed fittings and accessories, identifying the type of tests, carrying out the tests and issuing test certificates.

### Summary of Learning Outcomes

1. Conduct physical inspection
2. Identify the test to be carried out and test equipment
3. Perform the test
4. Issue installation test and wiring certificates

### Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Conduct physical inspection	<input type="checkbox"/> Inspection <ul style="list-style-type: none"><li>• Reasons for inspection</li><li>• Physical and visual check<ul style="list-style-type: none"><li>➤ Firmness</li><li>➤ Loose connections</li><li>➤ Damaged accessories and fittings</li><li>➤ Colour coding</li></ul></li></ul>	<input type="checkbox"/> Observation <input type="checkbox"/> Oral questioning
2. Identify the test to be carried out and the test equipment	<input type="checkbox"/> Testing <ul style="list-style-type: none"><li>• Meaning</li><li>• Purpose and reasons</li><li>• Types of tests<ul style="list-style-type: none"><li>➤ Polarity</li><li>➤ Effectiveness of earthing</li><li>➤ Insulation resistance</li><li>➤ Ring circuit continuity</li></ul></li><li>• Identification of test equipments</li><li>• Specification of test equipment</li></ul>	<input type="checkbox"/> Observation <input type="checkbox"/> Oral questioning <input type="checkbox"/> Written tests

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> <li>• Test equipment care, storage and maintenance</li> </ul>	
3. Perform identified tests	<ul style="list-style-type: none"> <li><input type="checkbox"/> Reading and interpretation of appropriate manuals</li> <li><input type="checkbox"/> Identification of test equipment e.g.               <ul style="list-style-type: none"> <li>➤ Continuity tester (ohmmeter)</li> <li>➤ Insulation resistance tester</li> <li>➤ Earth loop impedance tester</li> <li>➤ Test lamp</li> </ul> </li> <li><input type="checkbox"/> Procedure of conducting identified tests               <ul style="list-style-type: none"> <li>➤ Polarity</li> <li>➤ Effectiveness of earthing</li> <li>➤ Insulation resistance</li> <li>➤ Ring circuit continuity</li> </ul> </li> <li><input type="checkbox"/> Recording and verification of results against appropriate standards               <ul style="list-style-type: none"> <li>➤ Rectification of any anomalies</li> </ul> </li> <li><input type="checkbox"/> Safety precautions to be observed</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Observation</li> <li><input type="checkbox"/> Oral questioning</li> <li><input type="checkbox"/> Practical tests</li> <li><input type="checkbox"/> Written tests</li> </ul>
4. Issue installation test results and wiring completion certificates	<ul style="list-style-type: none"> <li><input type="checkbox"/> Installation test results certificate               <ul style="list-style-type: none"> <li>• Meaning terms</li> <li>• Importance</li> </ul> </li> <li><input type="checkbox"/> Wiring certificate               <ul style="list-style-type: none"> <li>• Meaning</li> <li>• Importance</li> <li>• Types</li> <li>• Issuing authority</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Written tests</li> <li><input type="checkbox"/> Oral questioning</li> </ul>

### Suggested Methods of Delivery

- Demonstration by trainer
- Practice by the trainee
- Field trips
- Discussions

### Recommended Resources

<ul style="list-style-type: none"> <li>• Test instruments               <ul style="list-style-type: none"> <li>➤ Continuity tester (ohmmeter)</li> <li>➤ Insulation resistance tester</li> </ul> </li> </ul>	<b>Materials and supplies</b> <ul style="list-style-type: none"> <li>• Stationery</li> <li>• Wiring certificates</li> </ul>
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<ul style="list-style-type: none"><li>➤ Earth loop impedance tester</li><li>➤ Test lamp</li></ul>	
<b>Reference materials</b> <ul style="list-style-type: none"><li>• Manufacturers' manuals</li><li>• Relevant catalogues</li><li>• IEE regulations</li></ul>	

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