

**Specification of Competency Standards**  
**for the Testing, Inspection and Certification Industry**  
**Unit of Competency**

Functional Area - Testing Operations

Title	Select test methods and measuring instruments (electrical and electronic testing)
Code	105817L6
Range	This unit of competency (UoC) covers the abilities to select suitable test methods and measuring instruments with justification by critically evaluating test request and relevant test standards for carrying out electrical and electronic testing activities in laboratories.
Level	6
Credit	2 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of test methods and measuring instruments for electrical and electronic testing</p> <ul style="list-style-type: none"> <li>• Interpret the requirements of test methods and measuring instruments in relevant international standards.</li> <li>• Interpret the requirements of electrical measuring instruments in test methods.</li> <li>• Formulate criteria for selection of test methods and measuring instruments in terms of accuracy, resolution, tolerance, limitations and measurement uncertainty.</li> <li>• Explain the principles, operation and typical applications of electrical measuring instruments and systems.</li> <li>• Explain the principles, operation and typical applications of supplementary testing equipment used in conjunction with electrical measuring instruments.</li> <li>• Differentiate conformity of instruments from non-conformity within a narrow range of measured values.</li> </ul> <p>2. Select test methods, testing envelopment and measuring instruments for electrical and electronic testing</p> <ul style="list-style-type: none"> <li>• Evaluate the customer's test request critically and determine sample characteristics and factors to justify the selection of test method and measuring instrument.</li> <li>• Select appropriate test method in accordance with relevant test standard, specifications and test request from the customer.</li> <li>• Select appropriate testing envelopment for on-site electrical and electronic testing.</li> <li>• Select the most suitable measuring instrument or system in accordance with the test method/standard.</li> <li>• Set up the electrical measuring instrument or system and optimise its performance by adjusting appropriate scale and measurement mode.</li> <li>• Evaluate the performance verification and stability checks of the instrument or system and take appropriate actions if any drift in performance is identified.</li> </ul> <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> <li>• Maintain efficient communication with customers.</li> <li>• Assess any health and safety risks associated with electrical measuring instruments to instrument operator, other laboratory personnel and the environment.</li> </ul>
Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ul style="list-style-type: none"> <li>• select and justify appropriate test method and/or test envelopment at the site by critically evaluating the test request from the customer and interpreting relevant test standard,</li> <li>• select appropriate electrical measuring instrument for a particular test by evaluating the requirements of relevant test method/standard and sample characteristics,</li> <li>• evaluate the performance, stability and risks of the instrument to ensure it is ready and safe for use in electrical and electronic testing activities.</li> </ul>

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Remark	The relevant international standard involved in this UoC is as follows: <ul style="list-style-type: none"><li>• ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories</li></ul>
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