

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

Functional Area - Testing Operations

Title	Perform stability and mechanical tests
Code	105847L4
Range	This unit of competency (UoC) covers the abilities to carry out stability and mechanical tests on electrical and electronic products independently by applying the knowledge of mechanical properties of the products and conclude test results in testing laboratories.
Level	4
Credit	4 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of mechanical properties</p> <ul style="list-style-type: none"> <li>• Define the mechanical properties, e.g. mass, force, torque, stress, strain, vibration, angle, energy.</li> <li>• Identify the potential mechanical hazards of selected electrical and electronic products, e.g.: <ul style="list-style-type: none"> <li>○ audio, video and similar electronic apparatus,</li> <li>○ household and similar electrical appliances,</li> <li>○ information technology equipment,</li> <li>○ luminaires.</li> </ul> </li> <li>• Employ the principles and methods of performing stability and mechanical tests.</li> <li>• Specify the requirements of stability and mechanical tests of selected electrical and electronic products in relevant categories of standards, e.g.: <ul style="list-style-type: none"> <li>○ basic/generic standards, product family standards</li> <li>○ international, national and industrial standards such as IEC, EN, GB, BS, UL, MS, SS, AS/NZS</li> </ul> </li> <li>• Explain the principles and operation of testing fixtures and equipment used for stability and mechanical tests, e.g. load cells, vibration generator and table, impact hammer, pull and push gauge.</li> <li>• Apply the concepts of uncertainty and equipment calibration to the stability and mechanical tests.</li> </ul> <p>2. Perform stability and mechanical tests</p> <ul style="list-style-type: none"> <li>• Select appropriate test methods/standards and test conditions for stability and mechanical tests.</li> <li>• Apply appropriate testing fixtures and equipment for stability and mechanical tests.</li> <li>• Carry out stability and mechanical tests on the test sample independently by applying appropriate test conditions and environment according to the test methods/standards, e.g. degree of inclination of rigid support surface.</li> <li>• Carry out required validation checks to confirm the system and equipment requirements are met.</li> <li>• Record the stability behaviour and mechanical strength of the test sample.</li> <li>• Conclude test results to confirm the compliance of the test sample.</li> </ul> <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> <li>• Ensure all tests are carried out in compliance with good industry practices and relevant international standards.</li> <li>• Ensure integrity and confidentiality of laboratory data and information by observing the code of conduct as required by the standards and the organisation.</li> </ul>
Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to:

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	<ul style="list-style-type: none"><li>• carry out stability and mechanical tests on selected electrical and electronic product independently by using appropriate testing fixtures and equipment according to the requirements of test methods/standards,</li><li>• record accurate and reliable test data by data validation and verifying equipment calibration status,</li><li>• conclude test results to confirm the compliance of stability and mechanical properties of the product against the relevant specifications of test methods/standards.</li></ul>
Remark	