

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

Functional Area - Testing Operations

Title	Perform acoustic measurements (electrical products)
Code	105849L4
Range	This unit of competency (UoC) covers the abilities to carry out acoustic measurements on electrical and electronic products independently by applying suitable testing equipment and conclude test results in testing laboratories.
Level	4
Credit	4 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of acoustic measurements</p> <ul style="list-style-type: none"> • Employ the basic principles of acoustic measurements, e.g.: <ul style="list-style-type: none"> ○ sound theory and signal pattern, ○ addition and subtraction of sound levels, ○ components of human ear and ear coupler, ○ basic types of sound field microphones, ○ units of sound measurements. • Employ the principles of measuring acoustic properties of electrical and electronic products, e.g. A-weighted, C-weighted, continuous and instantaneous measurements. • Specify the requirements of measuring acoustic properties of electrical and electronic audio appliances in relevant categories of standards, e.g.: <ul style="list-style-type: none"> ○ basic/generic standards, product family standards ○ international, national and industrial standards such as IEC, EN, GB, BS, UL, MS, SS, AS/NZS • Specify the regulatory requirements of acoustic measurements of electrical and electronic products in selected countries or regions, e.g. China, EU. • Explain the principles and operation of testing equipment and chamber for acoustic measurements. • Apply the concepts of uncertainty and equipment calibration to the acoustic measurements. <p>2. Perform acoustic measurements</p> <ul style="list-style-type: none"> • Select appropriate test methods/standards and test conditions for acoustic measurements. • Apply appropriate testing equipment and test site for the acoustic measurements. • Apply appropriate conditions to the testing equipment, e.g. positions of microphones, reference box. • Apply appropriate conditions to the sample under test, e.g. test signal, measurement distances, number of measurements. • Carry out acoustic measurements on the test sample independently according to the test methods/standards. • Carry out required validation checks to confirm the system and equipment requirements (e.g. background level, noise of accessories) are met. • Record accurate measurement data and conclude test results to confirm the compliance of the test sample. <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> • Ensure all measurements are carried out in compliance with good industry practices and relevant international standards. • Maintain the conditions of chamber for acoustic measurements to ensure a sound proof environment according to test methods/standards.

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	<ul style="list-style-type: none">• Ensure integrity and confidentiality of laboratory data and information by observing the code of conduct as required by the standards, regulations and the organisation.
Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ul style="list-style-type: none">• carry out acoustic measurement on selected electrical and electronic product independently by applying appropriate testing equipment and test conditions according to the requirements of test methods/standards,• record accurate and reliable measurement data by data validation and verifying equipment calibration status,• conclude test results to confirm the compliance of acoustic properties of the product against the relevant specifications of test methods/standards.
Remark	