

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

Functional Area - Testing Operations

Title	Perform electromagnetic field measurements
Code	105827L4
Range	This unit of competency (UoC) covers the ability to carry out electromagnetic field measurements on electrical and electronic products independently and record accurate test data in testing laboratories.
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of electromagnetic field</p> <ul style="list-style-type: none"> • Identify the hazards of electromagnetic field to human body and describe basic restrictions of current density and magnetic flux density to head, trunk and the whole body. • Define the magnetic flux density with appropriate units and coupling factor and explain how the coupling factor affects the evaluation of magnetic flux density. • Employ the principles for measuring the electromagnetic field of selected electrical and electronic products. • Specify the requirements of measuring electromagnetic field of selected electrical and electronic products 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. • Describe the principles and operation of instruments and sensors used for measuring magnetic flux. • Apply the concepts of uncertainty and instrument calibration to the electromagnetic field measurements. <p>2. Perform electromagnetic field measurements</p> <ul style="list-style-type: none"> • Select appropriate test methods/standards, measuring distances, sensor locations and test conditions (e.g. temperature and frequency) for electromagnetic field measurements. • Apply appropriate testing instrument and test site for the measurements. • Apply appropriate conditions to the sample under test and estimate the coupling factor by determining the extent of hot spot, equivalent coil and factor k. • Carry out electromagnetic field measurements on the test sample independently according to the test methods/standards. • Carry out required validation checks to confirm the system and instrumental requirements 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. • Ensure appropriate measures have been taken to minimise the health and safety risks of electromagnetic field arising from the measurements. • Ensure integrity and confidentiality of laboratory data and information by observing the code of conduct as required by the standards and the organisation.

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Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to: <ul style="list-style-type: none">• carry out the electromagnetic field measurement on selected electrical and electronic product independently by applying appropriate testing instrument and test conditions according to the requirements of relevant test methods/standards,• record accurate and reliable measurement data by data validation and verifying instrument calibration status,• conclude test results to confirm the compliance of electromagnetic field of the product against the relevant specifications of test methods/standards.
Remark	