

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

Functional Area - Testing Operations

Title	Perform stability, physical and mechanical tests
Code	105852L4
Range	This unit of competency (UoC) covers the abilities to carry out stability, physical and mechanical tests on consumer products independently and record accurate test data to conclude the compliance of consumer products in testing laboratories.
Level	4
Credit	4 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of stability and mechanical tests for consumer products</p> <ul style="list-style-type: none"> • Employ the principles and methods of carrying out stability and safety tests for consumer products, e.g.: <ul style="list-style-type: none"> ○ furniture such as seating, tables, beds, storage units, ○ toys and children products. • Define the physical and mechanical properties, e.g. mass, force, velocity, energy, torque, tension, compression, flexure. • Identify potential physical and mechanical hazards of consumer products, e.g.: <ul style="list-style-type: none"> ○ toys and children products: sharp edges or points, ingestion, inhalation, bite tests, penetration of projectiles, ○ furniture such as seating tables, beds, storage units, ○ cookware and kitchenware. • Employ the principles and methods of carrying out physical and mechanical tests for consumer products, e.g. strength tests, durability tests, dynamic tests. • Specify the requirements of stability, physical and mechanical tests of selected consumer 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, ISO, EN, GB, BS, UL, MS, SS, AS/NZS, ASTM, US CPSC. • Explain the principles and operation of testing fixtures and equipment used for stability and mechanical tests. • Apply the concepts of uncertainty and equipment calibration to the stability and mechanical tests. <p>2. Perform stability and mechanical tests</p> <ul style="list-style-type: none"> • Select appropriate test methods/standards and test conditions for stability and/or physical and mechanical tests. • Apply appropriate testing fixtures and equipment. • Carry out stability and/or physical and mechanical tests on the test sample independently by applying appropriate test conditions and environment according to the test methods/standards. • Carry out required validation checks to confirm the system and equipment requirements are met. • Record the stability behaviour and/or physical and mechanical properties of the test sample. • Judge test results to confirm the compliance of the test sample. <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> • Ensure all tests are carried out in compliance with good laboratory practices and relevant international 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 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 stability and/or physical and mechanical tests on selected consumer product independently by using appropriate testing fixtures and equipment according to the requirements of test methods/standards,• record accurate and reliable test data by data validation and verifying equipment calibration status,• judge test results to confirm the compliance of stability and/or physical and mechanical properties of the product against the relevant specifications of test methods/standards.
Remark	