

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

Functional Area - Testing Operations

Title	Perform basic physical and mechanical tests
Code	105845L3
Range	This unit of competency (UoC) covers the abilities to conduct pre-use and calibration checks on equipment and perform routine physical and mechanical tests on samples to record test data in testing laboratories.
Level	3
Credit	4 (For Reference Only)
Competency	<p>Performance Requirements</p> <ol style="list-style-type: none"> 1. Possess knowledge of basic physical and mechanical tests <ul style="list-style-type: none"> • Employ the physical and mechanical principles and concepts underpinning the selected test/procedure, e.g.: <ul style="list-style-type: none"> ○ mass, weight, forces, pressure, energy, friction, ○ cohesive/adhesive forces, hydrostatic pressure, fluid flow, viscosity, friction and slip resistance, ○ elasticity, hardness, ductility, malleability, strength of materials, elastic limit, elastic modulus, ultimate stress, plasticity, permeability and dispersion. • Describe the principles, operation and function of key components of testing equipment. • Specify the calibration requirement of equipment. • Apply the concepts of metrology. 2. Check equipment before use and carry out routine physical and mechanical tests on samples <ul style="list-style-type: none"> • Identify sampling requirements in test methods, e.g. selection of samples, minimum sample size. • Set up equipment in accordance with test method requirements. • Perform pre-use and safety checks in accordance with relevant operating procedures. • Check equipment calibration using specified procedures, if applicable. • Operate equipment in accordance with test method requirements. • Carry out physical and mechanical tests on samples in accordance with specified methods. • Record accurate test data. 3. Exhibit professionalism <ul style="list-style-type: none"> • Ensure integrity and confidentiality of test data by observing the code of conduct of the laboratory. • Follow established safe work practices and use appropriate personal protective equipment to ensure personal safety and that of other laboratory personnel.
Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ul style="list-style-type: none"> • set up testing equipment and check equipment calibration, • operate testing equipment safely to carry out routine physical and mechanical tests on the sample in accordance with test method requirements, • record accurate test data by checking the equipment calibration status.
Remark	