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

Functional Area - Testing Operations

Title	Perform colour fastness tests
Code	105860L4
Range	This unit of competency (UoC) covers the abilities to carry out suitable colour fastness tests on textile and garment products independently, record accurate observations and conditions of colour fastness tests of the products and judge test results in testing laboratories.
Level	4
Credit	4 （For Reference Only）

Competency	Performance Requirements
	1. Possess knowledge of colour fastness
	
	• Identify different types of dyes and describe the ease of fastness of different colour dyes.
	• Employ the principles of colour fastness tests, e.g. colour fastness to light, washing, dry-cleaning, hot pressing, dry heat, perspiration, bleaching, colour migration into PVC coating, perborate, water spotting, acid spotting, alkaline spotting, chlorine bleach, non-chlorine bleach, chlorinated pool water, rubbing/crocking, seawater, saliva, organic solvent, burn gas fumes, ozone, phenolic yellowing, dye transfer,
	• List the method and requirements of colour fastness test to selected type of textile and garment product.
	• Identify relevant colour fastness standards and specifications, e.g.:
	    ○ international and national standards such as AATCC, ASTM, ISO, EN, DIN, AS/NZS, CAN/CGSB, WOOLMARK, JIS, BS, GB,
	    ○ manufacturers' and/or clients' specifications.
	• Explain the principles and operation of equipment used for the colour fastness tests, e.g. crockmeter, dry-cleaning cylinder, fade-o-meter, accelerated laundering machine, automatic washer, automatic tumble dryer, perspiration tester, ozone exposure chamber, burnt gas exposure chamber, heating device.
	• Apply the concept of equipment calibration to colour fastness tests.
	2. Perform colour fastness tests
	
	• Apply appropriate test methods/standards and environmental conditions
	• Apply appropriate testing equipment for colour fastness tests.
	• Apply appropriate conditions to the testing equipment, e.g.:
	    ○ washing powder and loading of automatic washer and automatic tumble dryer,
	    ○ distance, downward force of rubbing finger and travelling distance along the track and rubbing rate for crockmeter,
	    ○ pressure, number and size of plates for perspiration tester,
	    ○ pressure of heating devices,
	    ○ temperature of fade-o-meter, accelerated laundering machine, drying oven and heating device, exposure chamber.
	• Prepare the required chemical stimulants as specified, e.g. seawater, perspiration, saliva, acid spotting, alkaline spotting.
	• Apply appropriate multi-fibre adjacent fabric and conditions to the specimen under test, e.g.:
	    ○ ways of drying of specimen after tested,
	    ○ test duration and cycle,
	    ○ dimension of non-corrodible steel discs, solvent for dry-cleaning,
	    ○ appropriate stimulants.
	• Carry out colour fastness tests according to the test methods/standards.
	• Carry out required quality control check specimens, e.g. blue wool, to confirm the instrumental requirements are met.

Functional Area - Testing Operations

	• Record observations and conditions of colour fastness tests and judge test results. 3. Exhibit professionalism • Ensure all tests are carried out in compliance with good laboratory practices under relevant categories of standards. • Ensure integrity and confidentiality of laboratory data and information by observing the code of conduct as required by the standards and the organisation. • Check colour sensitivity periodically using Munsell Hue test or equivalent.
Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to: • carry out the colour fastness test on selected textile and garment specimen independently by applying appropriate testing equipment and environmental conditions according to the requirements of test methods/standards, • record observations and conditions of colour fastness tests accurately, • judge test results against the relevant specifications of test methods/standards.
Remark	