

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

Functional Area - Testing Operations

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| Title | Perform fibre analysis |
| Code | 105858L4 |
| Range | This unit of competency (UoC) covers the abilities to carry out fibre analysis on textile and garment products independently, record accurate test data, and determine the fibre types and fibre contents in textile and garment products in testing laboratories. |
| Level | 4 |
| Credit | 4 (For Reference Only) |
| Competency | <p>Performance Requirements</p> <p>1. Possess knowledge of fibre analysis</p> <ul style="list-style-type: none"> • Employ the principles of fibre analysis, fibre trademark and their composition and describe application of the fibre trademark to garments. • Identify the analysis methods for various types of fibre, e.g. qualitative method, quantitative methods including mechanical separation, chemical analysis and microscopic analysis, mercerisation of cotton. • Specify the requirements of fibre analysis to selected type of textile and garment products. • Identify relevant standards relating to fibre analysis, e.g.: <ul style="list-style-type: none"> ○ international and national standards such as AATCC, ASTM, BS, ISO, WOOLMARK, European Council Directive, JIS, GB, ○ manufacturers' and/or clients' specifications. • Explain the principles and operation of equipment used for fibre analysis, e.g. high power, comparison and polarity microscope, Fourier transform infrared spectrophotometer (FTIR), analytical balance. • Apply the concepts of uncertainty and equipment calibration to fibre analysis. <p>2. Perform fibre analysis</p> <ul style="list-style-type: none"> • Select appropriate test methods/standards for fibre analysis. • Apply appropriate tests and environmental conditions to the sample under test, e.g.: <ul style="list-style-type: none"> ○ visual and microscopic identification, ○ microscopic and cross-section identification, ○ refractive index, ○ burning test, ○ density analysis, ○ solubility test using solvents, acids and alkalis, ○ drying twist analysis, ○ stain analysis, ○ melting analysis, ○ micro-FTIR. • Carry out fibre analysis on the sample with different types of fibre and colours independently according to the test methods/standards. • Carry out required validation checks to confirm equipment requirements such as daily check of balance are met and cross check with the supervisor. • Record accurate test data and judge test results to confirm the fibre types and fibre contents of the test sample in compliance with the required specifications. <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> • Ensure all tests are carried out in compliance with good laboratory practices under relevant categories of 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 fibre analysis on selected textile and garment product independently by applying appropriate tests and environmental conditions 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 fibre types and fibre contents of the product against the relevant specifications of test methods/standards and/or manufacturers/clients. |
| Remark | |