Title | Demonstrate knowledge of and inspect weighing and measuring instruments, weights and measures
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Level | 6
Credits | 40

Purpose
People credited with this unit standard are able to: explain the New Zealand Measurement System in the context of legal metrology; describe the design and application of basic components in weighing and measuring instruments; follow health and safety procedures during a Weights and Measures Inspection; outline the metrological characteristics of measures of length, measures of volume, weights, measuring and weighing instruments; determine the type of inspection required for weighing and measuring instruments, weights and measures; inspect weighing and measuring instruments and weights and measures; analyse results and conclude inspection.

Classification | Public Sector Services > Public Sector Compliance Management

Available grade | Achieved

Guidance Information
1 This unit standard is intended for people who are employed in the New Zealand public sector in the role of Inspector of Weights and Measures. The content is based on the Weights and Measures Act 1987 and the Weights and Measures Regulations 1999 and their subsequent amendments and OIML recommendations.

2 Definitions
*International Organisation of Legal Metrology (OIML)* is based in Paris and is an organisation made up of member states. New Zealand is a member state. OIML makes recommendations covering aspects of legal metrology.
*International Systems of Units (SI)* is the coherent system of units adopted and recommended by the General Conference on Weights and Measures. *Legal Metrology* is part of metrology relating to activities that result from statutory requirements and concern measurements.
*Maximum permissible error (mpe)* is the extreme value of an error permitted by the mandatory requirements.
*Metrology* is the science of measurement.
*Organisation* in the context of this unit standard is the Ministry of Consumer Affairs Measurement and Product Safety Service.
*Organisational requirements* in the context of this unit standard includes policy and procedures of the Ministry of Consumer Affairs Measurement and Product Safety Service.
Public Sector covers all publicly owned organisations which are connected to the institution of New Zealand government, both central and local, and which include public service, crown entities, non-uniformed staffs of the services and forces, offices of Parliament, and local authorities. Public Service is part of the State sector, and consists of all the ministries and departments of state which carry out core government business which are listed in the First Schedule of the State Sector Act 1988. State Sector applies to all national institutions of central government. Standard means a physical representation of any standard of measurement.

3 The range of weighing and measuring instruments and weights and measures in this unit standard must include:
- weights, measures of length, measures of volume, non-automatic weighing instruments, liquid measuring instruments;
and may include but is not limited to:
- spirit dispensers, beer delivery measures, semi-automatic weighing instruments, length measuring instruments, multidimensional measuring instruments.

Outcomes and performance criteria

Outcome 1

Explain the New Zealand Measurement System in the context of legal metrology.

Performance criteria

1.1 The national measurement system, the associated institutions and their functions are described.

1.2 The International System of units is outlined.

1.3 Legal metrology is defined according to international standards.

1.4 The metrological control system for weighing and measuring instruments, weights and measures is outlined in accordance with international standards.

1.5 Relevant legislation for weighing and measuring instruments, measures and weights is identified and described.

1.6 The need for standards and their traceability is explained.

Outcome 2

Describe the design and application of basic components in weighing and measuring instruments.

Performance criteria

2.1 The fundamental operating features of weighing and measuring instruments are described.
2.2 The purpose of major components of weighing and measuring instruments are described.

**Outcome 3**

Follow health and safety procedures during a Weights and Measures Inspection.

**Performance criteria**

3.1 All health and safety procedures are followed when working on a client's premises in accordance with organisational requirements.

3.2 The safety of persons present during the inspection is protected in accordance with organisational requirements.

3.3 Respect for client property is shown at all times during the inspection.

Range includes but is not limited to – equipment, product, documents, personal effects.

3.4 Safety protective aids are used during the inspection in accordance with workplace and organisational requirements.

Range includes but is not limited to – protective clothing, safety footwear, safety helmet, eye and ear protectors, reflective jacket.

3.5 Items of potential danger are dealt with in accordance with organisational requirements.

Range includes but is not limited to – operating machinery, fork lifts, vehicles, cranes, dangerous goods.

**Outcome 4**

Outline the metrological characteristics of measures of length, measures of volume, weights, measuring instruments and weighing instruments.

**Performance criteria**

4.1 The metrological requirements for measures of length, measures of volume, weights, measuring instruments and weighing instruments are outlined.

4.2 The metrological characteristics of measures of length, measures of volume, weights, measuring instruments and weighing instruments are outlined.

**Outcome 5**

Determine the type of inspection required for weighing and measuring instruments, weights and measures.
Performance criteria

5.1 Weighing and measuring instruments, weights and measures are assessed to determine whether a verification or inspection maximum permissible error (mpe) is to be applied.

5.2 The process required for both verification and certification is explained.

5.3 Maximum permissible errors (mpe) for the determined inspection are identified.

Outcome 6

Inspect weighing and measuring instruments, weights and measures in accordance with organisational requirements.

Performance criteria

6.1 The operating environment is analysed to determine its impact on the accuracy of measurement results.

6.2 Operational error in the use of the weighing and measuring instruments, weights and measures under examination is identified.

6.3 Specialised testing equipment is selected and used in accordance with organisational requirements.

6.4 Weighing and measuring instruments, weights and measures are examined for compliance with the weights and measures legislation.

Outcome 7

Analyse results and conclude inspection.

Performance criteria

7.1 Inspection results are analysed and appropriate action is implemented.

Range actions may include but are not limited to – certification, verification, legal action, infringement offence notice, letter of warning, no action.

7.2 Performance problems with weighing and measuring instruments are identified and reported.

7.3 All documentation is completed in accordance with organisational requirements.

Range may include but is not limited to – test sheets, certificate of accuracy, breach report, infringement offence notice, letter of warning, advice note.
This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

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Consent and Moderation Requirements (CMR) reference 0121