



Australian Government

Department of Education, Employment and Workplace Relations

MSATMVER401A Verify a limited weighing instrument

Revision Number: 1

MSATMVER401A Verify a limited weighing instrument

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the ability to apply National Test Procedures to determine whether a non-automatic weighing instrument (<3 tonne) or catchweigher is suitable for trade and then mark it accordingly. It also involves the installation and/or repair of weighing instruments.
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Application of the Unit

Application of the unit	This unit of competency is applicable to verifiers who operate under a licence to test and mark specific classes of weighing instruments. They may also undertake sales, installation and/or repair of a limited class of weighing instruments. Weighing instruments are used in a very wide range of commerce. For example, electronic weighing instruments are used to measure a wide range of products at the point of sale, as an order or as a pre-packaged article. The range of environments where these instruments is almost limitless. Some examples of these environments includes pharmaceutical laboratories, supermarkets, fresh food retailers, packing houses, chemical/petroleum industry, construction, mining and other extractive industry sectors. Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These are found at the end of this unit of competency under the section 'This competency in practice'.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Install and repair weighing instruments	1.1. Access and correctly interpret information for installing or repairing instruments 1.2. Select required components, tools and equipment in accordance with manufacturer/component supplier specifications 1.3. Perform installation or repair in accordance with legislation, industry codes of practice and organisational guidelines 1.4. Avoid instrument damage during installation or repair
2. Prepare for verification	2.1. Identify and evaluate the type of instrument to be verified 2.2. Access and correctly interpret documentation required for the verification 2.3. Identify and access test equipment, products and consumables required for the verification 2.4. Liaise with the trader to provide the items required on site 2.5. Ensure specified test equipment is fit for purpose in accordance with applicable legislation and organisational procedures 2.6. Store and transport test equipment in accordance with organisational procedures and industry best practice 2.7. Identify relevant local workplace health and safety issues and implement appropriate control strategies
3. Evaluate weighing instrument performance	3.1. Evaluate whether the operating environment will impact on the instrument performance 3.2. Modify the operating environment or implement alternative arrangements to ensure reliable test conditions as necessary 3.3. Identify the maximum permissible errors for the instrument from the legislative requirements 3.4. Use test equipment safely in accordance with applicable legislation and organisational procedures 3.5. Check instrument for compliance with the appropriate Certificates of Approval 3.6. Inspect the instrument in accordance with relevant National Test Procedure and appropriate National Measurement Institute policy

ELEMENT	PERFORMANCE CRITERIA
	3.7. Evaluate results against prescribed performance criteria and determine if the instrument is suitable for trade use in accordance with legislative requirements
4. Report verification results	4.1. Display the verification result on the instrument in accordance with legislative requirements 4.2. Use test reports to present verification results in the required format 4.3. Complete verification documentation in accordance with legislative requirements and organisational procedures 4.4. Communicate results within the specified time and in accordance with organisational guidelines
5. Model and encourage compliance with statutory requirements	5.1. Apply organisation's procedures and practices to meet licensing authority's requirements 5.2. Clarify any issues about licensing requirements with the licensing authority as they arise 5.3. Review work and seek feedback from others to confirm continuing compliance with licensing requirements 5.4. Identify implications of non-compliance with licensing requirements 5.5. Identify inadequacies in trader's procedures and practices which may contribute to non-compliance with licensing requirements and/or national measurement legislation 5.6. Explain inadequacies and possible remedial actions to trader
6. Maintain statutory records	6.1. Keep accurate and complete records in accordance with licensing requirements 6.2. Ensure authorisation, training and relevant licences are current in accordance with organisational and licensing requirements 6.3. Inform the licensing administering authority of changes to personal information as required by statute

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- diagnosing faults in weighing instruments
- installing and repairing weighing instruments with a basic design
- accessing, interpreting and applying a range of documents for the verification of weighing instruments including:
 - national measurement legislation
 - routine National Test Procedures
 - Certificates of Approval
 - National Measurement Institute verification policy
 - national and international design rules
 - pattern approval documents
- accessing and interpreting Certificates of Verification for a limited range of reference standards
- performing verifications over durations of up to one day in routine environments
- using advanced communication and negotiation skills to:
 - explain the purpose of verification
 - inform traders of non-compliances and consequences of failing to rectify them
 - explain verification procedures and outcomes to traders and managers
- accessing, transporting, setting up, validating, using and maintaining a limited range of test equipment and reference standards
- identifying and evaluating environmental impacts on performance of a range of weighing instruments
- conducting tests and recording results with close attention to detail and accuracy
- performing calculations involving:
 - fractions, decimals, ratios, proportions and percentages
 - scientific notation, correct units and the correct number of significant figures
 - interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation
- analysing performance results over a number of operating conditions
- planning routine tasks
- developing/implementing an efficient verification strategy that has a limited impact on traders, the public, employees and suppliers
- demonstrating professionalism and maintaining the rights of the trader at all times
- solving routine/expected problems
- working safely which may include applying basic first aid, confined space entry and working with heavy machinery

REQUIRED SKILLS AND KNOWLEDGE**Required knowledge**

- design, major components and functions for weighing instruments
- licensing requirements for a verifier including:
 - quality management system
 - licence conditions
 - maintenance of statutory records
- general chemical and physical principles and concepts including weight, mass and gravity
- knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs
- knowledge of metrological terms and terminology specific to weighing instruments such as maximum permissible errors, traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearisation
- national measurement legislation applicable to weighing instruments
- detailed knowledge of National Test Procedures and operating procedures for equipment and reference standards used in job role including:
 - purpose of test
 - test conditions and possible environmental impacts on performance of the instrument
 - key preparation/measurement steps in test method
 - calculation steps to give results in appropriate units and precision
 - maximum permissible errors for weighing instruments under inspection
- procedures for completing verification documentation
- organisational policy and procedures for verifying weighing instruments
- safety principles and procedures relevant to instruments and test environment
- basic first aid and site safety induction if required

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Competency must be demonstrated in the ability to perform consistently at the required standard for one class of weighing instrument listed in the Range Statement.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors should ensure that candidates can:

- identify, access and apply test procedures
- identify and use suitable reference standards
- install and repair weighing instruments to meet statutory requirements
- evaluate and adjust the impact of the operating environment on the performance of the instrument
- analyse test results to determine the instrument's suitability for verification (trade use)
- maintain the security and confidentiality of data in accordance with organisational and regulatory requirements
- report results in the required formats and expected timeframe.

Context of and specific resources for assessment

This unit of competency is to be assessed in the workplace or simulated workplace environment.

This unit of competency may be assessed with:

- MSATMREF301A Use and maintain reference standards.

Resources may include:

- limited weighing instruments, test equipment and reference standards
- computer and relevant software and/or organisation information management system
- Certificates of Approval for instruments
- relevant legislative and organisational procedures.

Method of assessment

The following assessment methods are suggested:

- questions to assess understanding of relevant procedures and remedial actions
- review of verification reports prepared by the

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	candidate • feedback from supervisors and peers regarding the candidate's ability to verify the performance of weighing instruments in accordance with legislative and organisational procedures. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Questioning techniques should suit the language and literacy levels of the candidate.
This competency in practice	Industry representatives have provided the case studies below to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. A retail butcher uses a digital weighing instrument to sell meat with a gross retail cost of \$500,000 annually and where the price per kilogram ranges from 5.99/kg to \$68/kg. As the profit margin of the butcher's business depends on the product received and sold, the butcher contracts a scale repair company to test his buying and selling scales for accuracy. The scale repairer arrives at the butcher's premises with a trolley load of equipment. After their introductions, the butcher enquires as to what all the gear on the trolley is for. The repairer explains that it is all part of the equipment needed to satisfy the licensing requirements of national Trade Measurement. The repairer advises that for this job he needs masses which have a suitable capacity and accuracy for the scale, that have been tested and are still within their expiry period. Not only does he need 15kg for the capacity of the instrument but also smaller masses down to 0.2g to test the scale correctly according to the National Test Procedures that he has brought with him. To keep up to date with new scales, he also has a laptop with internet access to download the latest Certificate of Approval for the instrument from the National Measurement Institute website. Regardless of how accurate the scale is, it can't be used for trade (i.e. buying or selling) unless it is approved for trade use by the National Measurement Institute. He also has the paper work required by national Trade Measurement to issue depending on whether the instrument complies and can

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be certified or not. Finally, he explains that he has tools in case the scales need adjustment if they are outside the maximum permissible errors set down by the National Measurement Institute.

The scale repairer inspects the scales for compliance with the Certificates of Approval and tests them. He finds the selling scale is approved for trade use but is incorrect and the buying scale, while weighing correctly, is not approved. The repairer fixes the selling scale, marks it with a certification mark and issues a certification form. The buying scale cannot be certified because it is not an approved type and the repairer issues a notice of non-compliance advising the butcher that it can no longer be used for trade. Before leaving the butcher shop, the repairer completes his paper work and submits it to national Trade Measurement within the specified 14 days.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Prescribed performance criteria for instruments

Prescribed performance criteria for instruments may include:

- design is in accordance with the appropriate Certificates of Approval
- performance meets the criteria described in the Certificates of Approval, National Test Procedure and legislation

Appropriate documentation

Where reference is made to documentation, it is expected the latest version will be used.

Appropriate documentation may include:

- reference standards
- Certificates of Verification
- Certificates of Approval for limited weighing instruments
- test procedures for verifying limited weighing instruments
- organisational test reports
- organisational procedures e.g. company quality assurance manual
- National Measurement Act
- occupational health and safety (OHS) regulations, guidelines and procedures
- material data safety sheets
- equipment manuals and warranty, supplier catalogues and handbooks

Certificates of Approval

Certificates of Approval may include:

- any Certificate issued by the Chief Metrologist under Regulation 60 of the National Measurement Regulations approving the pattern of a limited weighing instrument as being suitable for trade

Test equipment

Test equipment may include:

RANGE STATEMENT	
	• reference standards of measurement
Legislation	Legislation may include: • national measurement legislation • applicable Commonwealth, state and territory OHS legislation
National Measurement Institute policy	National Measurement Institute policy may include: • accepted test procedure variations • bulletin • instruction • determination
National Test Procedures for weighing instruments	National Test Procedures for weighing instruments may include those for: • non-automatic weighing machines • automatic Class Y(a) Catchweighers • automatic Class Y(b) Catchweighers • any other test procedure prescribed by the National Measurement Institute
OHS and environmental management requirements	OHS and environmental management requirements refer to: • all operations must comply with enterprise occupational health safety and environmental management requirements, which may be imposed through state/territory or Federal legislation. These requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council and State and Territory Departments of Health
Operating environmental impacts	Operating environmental impacts may include: • vibration • wind • humidity • heat

RANGE STATEMENT	
	• dust • electromagnetic interference • out of level
Records	Records may include: • test reports • safety procedures • a history of equipment calibration and test results
Weighing instruments	Verifiers may be licensed to test and mark specific classes of instruments from the following list. Weighing instruments may include: • non-automatic weighing machines tested without substitution loads • automatic Class Y(a) Catchweighers • automatic Class Y(b) Catchweighers • any other instruments prescribed by the National Measurement Institute

Unit Sector(s)

Unit sector	Trade Measurement
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		

