



Australian Government

Department of Education, Employment and Workplace Relations

MSATMVER302A Verify a simple measuring instrument

Revision Number: 1

MSATMVER302A Verify a simple measuring 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 simple measuring instrument is suitable for trade and then mark it accordingly. It also involves the installation and/or repair of simple measuring 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 a specific class of simple measuring instruments. Simple measuring instruments are used in a very wide range of commerce. For example, dip sticks are used to measure bulk petroleum products and beverages, dimensional measuring instruments are used to determine cubic measurements of packages for freight and length/area instruments are used to measure a wide range of articles sold by reference to those measurements. 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 simple measuring 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 simple measuring 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 simple measuring instruments
- installing and repairing measuring instruments with a basic design
- accessing, interpreting and applying a range of documents for the verification of simple measuring instruments including:
 - national measurement legislation
 - routine National Test Procedures
 - Certificates of Approval
 - National Measurement Institute verification policy
 - Australian Standards
- accessing and interpreting Certificates of Verification for a limited range of reference standards
- using routine 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 simple measuring instruments
- conducting tests and recording results with close attention to detail and accuracy
- performing calculations involving fractions, decimals, ratios, proportions and percentages
- using correct units and the correct number of significant figures
- analysing performance results over a single or limited range of operating conditions
- planning routine tasks
- developing/implement an efficient verification strategy that has a limited impact on others
- demonstrating professionalism and maintaining the rights of the trader at all times
- solving routine/expected problems
- working safely

Required knowledge

- design, major components and functions for relevant simple measuring instruments
- licensing requirements for a verifier including:
 - quality management system

REQUIRED SKILLS AND KNOWLEDGE

- licence conditions
- maintenance of statutory records
- general chemical and physical principles and concepts including:
 - weight, mass, gravity and density
 - temperature effects and coefficients of expansion
- basic knowledge of the operating procedures across a limited range of environments including laboratories, retail, industrial and farming
- knowledge of metrological terms and terminology specific to simple measuring instruments such as maximum permissible errors and traceability
- national measurement legislation applicable to simple measuring 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 simple measuring instruments under test
- procedures for completing verification documentation
- organisational policy and procedures for verifying simple measuring instruments

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 simple measuring instruments 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 measuring 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:

- simple measuring instruments, test equipment and reference standards
- computer and relevant software and/or organisation information management system
- Certificates of Approval for simple measuring 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

EVIDENCE GUIDE

	• review of verification reports prepared by the candidate • feedback from supervisors and peers regarding the candidate's ability to verify the performance of 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 local hotel tests their spirit measuring instruments once a month to ensure they comply with the relevant trade measurement legislation. These tests reveal two of the remote storage spirit measuring instruments are giving short measure to their customers. The publican contacts a verifier, explains the situation and asks if he/she can repair them today. When the verifier asks the publican if he is still using the instruments, he responds 'yes'. The verifier advises the publican that he should immediately stop using the two instruments to avoid being fined for using an incorrect instrument by national Trade Measurement. The verifier arrives that afternoon and discusses the problem in more detail with the publican. During this discussion, the verifier explains what he/she will be doing and confirms that he will maintain the highest standards of hygiene when working with the spirits. The verifier conducts a preliminary test on the incorrect instruments and confirms the publican's results. After making adjustments to rectify their inaccuracy, the verifier assesses the instruments design against the Certificate of Approval and completes a full test in accordance with the nationally recognised National Test Procedures. As all results are now within the maximum permissible errors, the verifier marks the instruments with a certification mark and completes a certification form. Before leaving the hotel, the verifier explains to the publican that he/she has completed the work and is now leaving the hotel. The verifier submits the relevant

EVIDENCE GUIDE

forms 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:

- Certificates of Verification
- Certificates of Approval for simple measuring instruments
- test procedures for verifying simple measuring instruments
- organisational test reports
- organisational procedures e.g. company quality assurance manual
- National Measurement Act
- occupational health and safety (OHS) regulations, guidelines and procedures and material safety data sheets (MSDS)
- equipment manuals and warranty, supplier catalogues and handbooks
- National Measurement Institute policy
- Australian Standards

Certificates of Approval

Certificates of Approval may include:

- the Certificate issued under national measurement legislation approving the pattern of a simple measuring instrument as being suitable for trade

Test equipment

Test equipment may include:

RANGE STATEMENT	
	• reference standards of measurement • equipment other than reference standards of measurement such as weighing instruments, strikes, funnels, water meters, beakers, roman levels, tramells and pocket length comparator
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 simple measuring instruments	National Test Procedures for simple measuring instruments may include: • beverage measuring instruments • protein measuring instruments • length measuring instruments • area measuring instruments • dimensional measuring instruments • vehicle tanks • milk tanks • 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 OHS 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

RANGE STATEMENT	
	Medical Research Council and State and Territory Departments of Health
Operating environmental impacts	Operating environmental impacts may include: • vibration • temperature • humidity • dust • electromagnetic interference • level
Records	Records may include: • test reports • safety procedures • a history of equipment calibration and test results
Simple measuring instruments	Verifiers may be licensed to test and mark specific classes of instruments from the following list. Simple measuring instruments may include: • beverage measuring instruments • protein measuring instruments • length measuring instruments • area measuring instruments • dimensional measuring instruments • vehicle tanks • milk tanks • 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		