



Australian Government

MSMTMREF301 Use and maintain reference standards

Release: 2

MSMTMREF301 Use and maintain reference standards

Modification History

Release 2. Adjustments to Application and Range of Conditions. Adjustment to Assessment Conditions. Equivalent.

Release 1. Supersedes and is equivalent to MSATMREF301A Use and maintain reference standards

Application

This unit of competency covers the ability to select and use appropriate reference standards of measurement in accordance with standard procedures and industry best practice. It also involves storing and transporting reference standards correctly and maintaining their integrity during all trade measurement activities.

This unit of competency is applicable to trade measurement inspectors appointed under national measurement legislation who may use reference standards of measurement for inspecting a range of pre-packaged products, trading practices or measuring instruments as part of their allocated duties. The unit also covers verifiers operating under a servicing licence who use reference standards of measurement to test and verify specific classes of measuring instruments used for trade. Inspectors and verifiers must work safely and this may require applying basic first aid, entering confined spaces, working with heavy machinery and site safety induction.

While no specific licensing or certification requirements apply to this unit at the time of publication, all inspection activity is legislated under the *National Measurement Act 1960*.

Pre-requisite Unit

Nil

Competency Field

Trade measurement

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes

Performance criteria describe the performance needed to demonstrate achievement of the element

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|---|--------------------|-----|---|
| 1 | Maintain reference | 1.1 | Identify environmental issues that may impact on reference standard integrity and implement appropriate |
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standard integrity		control strategies	
		1.2	Store, transport and handle reference standards in accordance with organisational procedures and industry best practice
		1.3	Quarantine and report damaged or compromised reference standards in accordance with organisational procedures
		1.4	Plan and organise reference standard maintenance and calibration in accordance with legislative requirements and organisational procedures
		1.5	Update maintenance and calibration records in accordance with organisational procedures
		1.6	Ensure that personnel assisting with the activity use correct handling procedures for reference standards
2	Select appropriate reference standards	2.1	Identify the scope and expected outcomes of the planned activity
		2.2	Identify and access reference standards appropriate to the activity
		2.3	Evaluate reference standard limitations associated with the activity and operating environment
		2.4	Validate reference standard suitability against the activity scope and expected outcomes in accordance with legislative requirements and organisational policy and procedures
3	Use reference standards	3.1	Review the expected outcomes for the activity
		3.2	Access and interpret reference standard Certificates of Verification and measurement reports
		3.3	Condition the reference standard as required to produce consistent and accurate measurements
		3.4	Identify, interpret and apply reference standard corrections as required
		3.5	Assess the results of the activity against the prescribed

		performance criteria
	3.6	Analyse any variances from the expected outcomes to identify any isolated or systemic problems linked to the reference standard or its use
4	Maintain a safe work environment	4.1 Use established safe work practices and personal protective equipment to ensure personal safety and that of other personnel 4.2 Identify relevant local workplace, health and safety issues and implement appropriate control strategies 4.3 Handle reference standards safely in accordance with applicable legislation and organisational procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Procedures include one or more of:

- National Instrument Test Procedures prescribed by the NMI
- article measurement procedures
- any other test procedure prescribed by the NMI

Regulatory requirements include:

- Regulation 13 or 48 Certificates for each reference standard

Legislation includes:

- national measurement legislation
- applicable Commonwealth, state and territory work/occupational health and safety (WHS/OHS) legislation

- NMI guidance includes:**
- bulletins
 - instructions
 - determinations
 - updates
- WHS/OHS and environmental management requirements include:**
- complying with WHS/OHS and environmental management requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time
 - applying standard precautions relating to the potentially hazardous nature of material/product measured
 - applying any necessary hygiene controls

Unit Mapping Information

Release 2. Adjustments to Application and Range of Conditions. Adjustment to Assessment Conditions. Equivalent.

Release 1. Supersedes and is equivalent to MSATMREF301A Use and maintain reference standards

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=d1287d36-dff4-4e9f-ad2c-9d6270054027>

Assessment Requirements for MSMTMREF301 Use and maintain reference standards

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- selecting, calibrating, using and maintaining appropriate reference standards in accordance with specified procedures on at least three (3) occasions
- maintaining the integrity of reference standards by controlling the operating environment and ensuring that all storage, transport and handling is in accordance with organisational procedures and industry best practice
- ensuring that the inspection, maintenance, calibration and documented status of reference standards are completed in accordance with organisational procedures
- selecting appropriate reference standards for specific trade measurement activities after careful consideration of the activity's scope, and expected outcomes and limitations, including the operating environment
- validating reference standard suitability against the activity's scope and expected outcomes in accordance with legislative requirements and organisational policy and procedures
- accessing and accurately interpreting reference standard Certificates of Verification, information about tolerances and measurement reports
- using the reference standard correctly, including conditioning and applying corrections, as required, to produce consistent and accurate measurements
- assessing results of trade measurement activities and analysing any variances from the expected outcomes to identify any isolated or systemic problems linked to the reference standard or its use
- using advanced communication and negotiation skills to:
 - explain the purpose of the trade measurement activities
 - access external equipment and resources to complete the activity
 - explain procedures and expected outcomes of activities to traders and managers
 - organise large reference standards to be dispatched ahead of visit to trader's premises
- performing specified 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
- maintaining the security and confidentiality of data in accordance with organisational and regulatory requirements
- reporting results in the required formats and expected timeframe
- working safely.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- general physical principles and concepts, including weight, mass, gravity, density, volume, length and area
- metrological terms, including maximum permissible errors, maximum permissible variations, traceability and uncertainty
- Australian legal units of measurement
- organisations involved in legal metrology in Australia
- hierarchy and classes of reference standards used in legal metrology
- purpose of Certificates of Verification issued under the national measurement legislation and the information contained in them
- National Measurement Institute (NMI) policy requirements and National Instrument Test Procedures and operating procedures for equipment and reference standards used in job role, including:
 - transport/storage specifications and procedures for test/specialised equipment and reference standards, and variations requiring approval
 - maintenance requirements for reference standards and test equipment, including when manufacturer's requirements are unavailable
 - procedures covering maintenance, recording and reporting faults and calibration
 - actions to be taken where legal traceability cannot be confirmed
 - actions to be taken if reference standards and test equipment are found to be defective
 - article measurement and measuring instrument test procedures
 - test conditions and possible environmental impacts on performance of reference standards and measuring instruments
 - key preparation/measurement steps in test method
 - calculation steps to give results in appropriate units and precision
 - maximum permissible errors for instruments under test and tolerances for reference standards
 - organisational safety procedures and requirements of applicable Commonwealth, state and territory work/occupational health and safety (WHS/OHS) legislation
- basic first aid and site safety induction, if required.

Assessment Conditions

- Judgement of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.
- This unit of competency should be assessed in the workplace, or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with MSMTM units dealing with the inspection or verification of trade measurement instruments and inspection of trading practices and pre-packaged products.
- Holistic assessment methods include:
 - review of maintenance and calibration records and analysis of results from trade measurement activities prepared by the candidate
 - feedback from supervisors and peers regarding the candidate's ability to use and maintain reference standards in accordance with legislative and organisational procedures
 - questions to assess understanding of relevant procedures and specific actions required in response to given reference standard scenarios
 - observation of the candidate using and/or maintaining reference standards.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - latest versions of appropriate documentation, such as Certificates of Verification, NMI policy, National Instrument Test Procedures for using reference standards and relevant legislation
 - equipment manuals, safety data sheets (SDS), safety procedures and safety equipment
 - records, such as test reports, audit reports, instrument history and test results
 - measuring instruments, test equipment and reference standards
 - computer and relevant software and/or organisation information management system.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience in trade measurement at least to the level being assessed and broad industry knowledge (such as a relevant industry qualification).

- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment in trade measurement OR
 - having consulted with trade measurement inspectors and/or verifiers performing the competency being assessed within the last twelve months.

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