



Australian Government

MSMTMINS302 Inspect a range of simple measuring instruments

Release: 2

MSMTMINS302 Inspect a range of simple measuring instruments

Modification History

Release 2. Correction to Application, Performance Criteria and adjustment to Range, Performance Evidence and Assessment Conditions. Equivalent.

Release 1. Supersedes and is equivalent to MSATMINS302A Inspect a range of simple measuring instruments

Application

This unit of competency covers the ability to apply National Instrument Test Procedures to determine whether a range of simple measuring instruments are suitable for trade use. The unit also involves assessing the performance of verifiers, by auditing recently verified simple measuring instruments, to ensure they meet the legislative requirements for trade use.

This unit of competency is applicable to trade measurement inspectors appointed under national measurement legislation who may inspect a wide range of simple measuring instruments as part of their allocated duties. Simple measuring instruments are used in a very wide range of commerce. Measuring instruments are used to measure liquids in tanks; multi-dimensional measuring instruments are used to measure the cubic measurements of packages for freight; length/area instruments are used to measure a wide range of articles sold by reference to those measurements; quality measuring instruments are used to measure certain characteristics of commodities such as protein content of grain; and point of sale systems (POS systems) and control systems for liquid-measuring instruments (Consoles) are systems connected to approved measuring instruments that are used to transform or supplement displayed and/or printed measurement data and/or control certain functions of the connected instrument.

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 | Prepare for inspection | 1.1 | Identify and evaluate the type of instrument to be inspected |
| | | 1.2 | Access and review any history of previous inspections of the instrument |
| | | 1.3 | Access and correctly interpret appropriate documentation required for the inspection |
| | | 1.4 | Identify and access test equipment, products and consumables required for the inspection |
| | | 1.5 | Ensure specified test equipment or reference material is fit for purpose in accordance with applicable legislation and organisational procedures, as appropriate |
| | | 1.6 | Store and transport test equipment or reference material in accordance with organisational procedures and industry best practice, as appropriate |
| | | 1.7 | Identify workplace health and safety issues relevant to the inspection |
| 2 | Initiate inspection | 2.1 | Identify the site controller, explain the purpose of the inspection and produce formal identification, if required |
| | | 2.2 | Identify relevant site health and safety issues and implement appropriate control strategies |
| | | 2.3 | Conduct a preliminary evaluation of the site's trading practices and prioritise activities to maximise inspection outcomes |
| | | 2.4 | Identify instruments used for trade and plan inspection to minimise disruption to the public and trader |
| | | 2.5 | Identify locations for product return or disposal, as appropriate |
| 3 | Evaluate simple measuring instrument performance | 3.1 | Evaluate whether the operating environment impacts the instrument's performance |
| | | 3.2 | If necessary, modify the operating environment or implement alternative arrangements to ensure reliable |

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| | | test conditions |
| | 3.3 | Identify the instrument's maximum permissible errors as specified by the legislative requirements |
| | 3.4 | Use any 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 Instrument Test Procedures and appropriate National Measurement Institute (NMI) policy |
| | 3.7 | Evaluate results against prescribed performance criteria and determine if the instrument is suitable for trade use in accordance with legislative requirements |
| 4 | Conduct a verifier instrument audit | |
| | 4.1 | Identify the scope of the verifier instrument audit |
| | 4.2 | Identify the expected outcomes of the verifier instrument audit |
| | 4.3 | Assess the instrument's performance against the expected outcome |
| | 4.4 | Check that the verification mark complies with legislation |
| | 5.5 | Analyse any variances from the expected outcomes to identify isolated or systemic problems |
| 5 | Analyse and report inspection results | |
| | 5.1 | Analyse inspection data for unacceptable performance trends |
| | 5.2 | If required, display the inspection result on the instrument in accordance with legislative requirements |
| | 5.3 | Use test reports to present inspection results in the required format |
| | 5.4 | Complete inspection documentation in accordance with legislative requirements and organisational procedures |
| | 5.5 | Communicate inspection results within the specified |

		time and in accordance with organisational guidelines
	5.6	Recommend follow-up actions as appropriate
6	Act on non-compliance	6.1 Select applicable enforcement action for the non-compliance in accordance with legislative requirements and organisational policy and procedures 6.2 Inform traders of non-compliances and consequences of failing to have them corrected 6.3 Implement enforcement action in accordance with legislative requirements and organisational policy and procedures 6.4 Respect the rights of the trader at all times

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.

National Instrument Test Procedures include one or more of:

- measuring instrument test procedures
- any other test procedure prescribed by the NMI

Classes of simple measuring instruments include one or more of:

- beverage dispensers
- protein quality measuring instruments
- grain density measuring instrument
- sugar quality measuring instruments
- length measuring instruments
- area measuring instruments
- dimensional measuring instruments
- vehicle tanks
- farm milk tanks

	• POS systems • consoles • point of sale systems • control systems • any other instrument prescribed by the NMI
Test equipment and materials include:	• reference standards of measurement • certified reference materials, such as grain for testing protein measuring instruments • equipment, such as weighing instruments, strikes, funnels, water meters, beakers, roman levels, trammels and pocket length comparators
Certificates of Approval include:	• any Certificate issued by the Chief Metrologist under Regulation 60 of the <i>National Measurement Regulations 1999</i> approving the pattern of a simple measuring instrument as being suitable for trade
Prescribed performance criteria for simple measuring instruments include:	• that the instrument is of an approved pattern • that the instrument operates within the appropriate limits of error permitted by legislation • that the instrument is used in accordance with any legislative requirements
Verification	Has the same meaning as Section 18GG of the <i>National Measurement Act 1960</i>
Verification marks	Verification marks for different instruments are defined in Regulations 2.28 and 2.29 of the <i>National Trade Measurement Regulations 2009</i>
Trading practices include one or more of:	• methods used for the sale of goods • using measuring instruments • position of measuring instruments • environmental factors • suitability of instrument • incorrect measurement

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| Legislation includes: | <ul style="list-style-type: none">• national measurement legislation• applicable Commonwealth, state and territory work/occupational health and safety (WHS/OHS) legislation |
| Enforcement actions include one or more of: | <ul style="list-style-type: none">• formal warnings, infringement notices, undertakings, injunction and prosecutions |
| NMI policy includes: | <ul style="list-style-type: none">• test procedure variations between a verification, in-service or audit inspection• bulletins• instructions• determinations |
| WHS/OHS and environmental management requirements include: | <ul style="list-style-type: none">• 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

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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 MSMTMINS302 Inspect a range of simple measuring instruments

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Performance Evidence

- Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:
- Completing initial verification testing of at least six (6) instruments with at least one (1) instrument from three (3) of the following classes of simple measuring instruments:
 - beverage dispensers
 - protein quality measuring instruments
 - grain density measuring instruments
 - sugar quality measuring instruments
 - length measuring instruments
 - area measuring instruments
 - dimensional measuring instruments
 - vehicle tanks
 - milk tanks
 - point of sale systems
 - control systems
 - any other simple measuring instrument prescribed by the NMI
- accessing and correctly interpreting documentation required for inspections, evaluation of measuring instruments and verifier audits
- ensuring test equipment, reference standards or reference materials are fit for purpose in accordance with applicable legislation and organisational procedures
- planning, preparing for, and safely conducting inspections to maximise outcomes and minimise disruption to the public and trader
- checking compliance and evaluating the performance of instruments using appropriate Certificate of Approval, National Measurement Institute (NMI) policy and National Instrument Test Procedures, and adjusting for any impact of the operating environment
- reliably determining if instruments are suitable for trade use in accordance with legislative requirements
- conducting at least two (2) verifier instrument audits to assess the performance of verifiers who test and mark simple measuring instruments for trade use
- assessing verifier performance against expected outcomes and analysing any variances to identify isolated or systemic problems

- identifying potential non-compliance of trading practices (applicable to the instrument) with national measurement legislation and initiating an efficient inspection strategy that has a limited impact on others
- acting on non-compliance of instrument or verifier performance and/or trading practices with national measurement legislation and initiating appropriate enforcement action
- demonstrating professionalism and respecting the rights of the trader at all times
- using routine communication and negotiation skills to:
 - explain the purpose of inspection
 - inform traders of non-compliances and consequences of failing to rectify them
 - explain procedures and inspection outcomes to traders, verifiers and managers
- using numeric skills to:
 - perform specified calculations involving fractions, decimals, ratios, proportions and percentages
 - use correct units and the correct number of significant figures
 - analyse performance results over a single or limited range of operating conditions
- 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 science principles and concepts, such as weight, mass, gravity, density, buoyancy, temperature and coefficients of expansion
- metrological terms and terminology specific to simple measuring instruments, such as maximum permissible errors and traceability
- national measurement legislation requirements for simple measuring instruments
- safe work method statements (SWMS) and safe operating procedures (SOPS) for a range of trading environments, such as laboratories, retail, industrial and farming
- NMI policy requirements, including test procedure variations between a verification, in-service or audit inspection, bulletins, directives, instructions and determinations
- National Instrument Test Procedures and operating procedures for equipment, certified reference materials and reference standards used in job role, including:
 - test conditions and possible environmental impacts on performance of the instrument
 - key preparation/measurement steps in the test method
 - calculation steps to give results in appropriate units and precision
 - maximum permissible errors for simple measuring instruments under inspection
 - organisational policy and procedures for inspecting simple measuring instruments, including completing inspection documentation
 - organisational safety procedures and requirements of applicable Commonwealth, state and territory work/occupational health and safety (WHS/OHS) legislation

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:
 - *MSMTMREF301 Use and maintain reference standards*
 - *MSMTMINS301 Inspect a range of simple measures*
 - *MSMTMVER403 Verify Inspectors' Class reference standards*
- Holistic assessment methods include:
 - review of inspection reports and verifier instrument audit reports prepared by the candidate
 - feedback from supervisors and peers regarding the candidate's ability to conduct inspections, evaluate the performance of simple measuring instruments and audit verifier's performance in accordance with legislative and organisational procedures
 - questions to assess understanding of relevant procedures, licensing requirements, trader obligations and remedial actions
 - review of candidate's responses to inspection scenarios, such as potential/actual non-compliances and appropriate actions, common issues and problems
 - observation of the candidate conducting an inspection.
- 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 and Approval, NMI Policy, National Instrument Test Procedures for verifying simple measuring instruments and relevant legislation
 - equipment manuals, safety data sheets (SDS) and safety procedures
 - records, such as test reports, audit reports, instrument history and test results
 - simple measuring instruments, test equipment, reference standards and material
 - 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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