



**Australian Government**

**Assessment Requirements for  
MSMTMVER501 Verify complex  
measuring instruments**

**Release: 2**

# Assessment Requirements for MSMTMVER501 Verify complex measuring instruments

## Modification History

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

Release 1. Supersedes and is equivalent to MSATMVER501A Verify a complex measuring instrument

## Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- testing and marking at least one (1) complex measuring instrument
- accessing and correctly interpreting documentation required for verification of a complex measuring instrument
- ensuring test equipment and reference standards are fit for purpose in accordance with applicable legislation and organisational procedures
- planning, scheduling, preparing for and safely conducting a verification to optimise use of resources and minimise disruption to the public and trader
- checking compliance and evaluating the performance of a complex measuring instrument using appropriate Certificates of Approval, National Measurement Institute (NMI) policy and National Instrument Test Procedures, and adjusting for any impact of the operating environment and operational factors
- using specified calculations, graphical and statistical analysis to determine the performance result for a complex measuring instrument
- reliably determining if a complex measuring instrument is suitable for trade use in accordance with legislative requirements
- displaying the verification result on the instrument and completing all verification documentation in accordance with legislative requirements and organisational procedures
- identifying and communicating any inadequacies in servicing licensee's organisational procedures and practices that may contribute to non-compliance with legislative requirements
- maintaining the accuracy, completeness and currency of statutory records required of servicing licensees, such as authorisation, training and relevant licences
- identifying and communicating any inadequacies in trader's use of complex instruments which may contribute to non-compliance with national measurement legislation
- demonstrating professionalism and respecting the rights of the trader at all times
- using advanced communication and negotiation skills to:
  - explain verification procedures and verification outcomes to traders and managers
  - arrange site clearances, gain cooperation of site controllers and schedule complex tests
  - access external equipment and resources to complete the inspection

- organise large equipment to be dispatched ahead of a verification visit, when necessary
- using numerical skills to perform specified calculations involving:
  - fractions, decimals, ratios, proportions and percentages
  - evaluation of formulae containing powers, exponents and logarithms functions
  - use of scientific notation, correct units and correct number of significant figures
  - determination of regression line equations and correlation coefficients
  - preparation and interpretation of complex control charts and frequency distribution plots
- 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, including:
  - physical states (solid, liquid and gas), weight, mass, gravity and density
  - pressure, pressure differential, backpressure and head pressure, fluid flow and viscosity
  - temperature effects and coefficients of expansion, flashpoint, boiling point and ice point
- metrological terms and terminology specific to instrument, such as maximum permissible errors, maximum permissible difference and maximum permissible variation, traceability, repeatability, uncertainty, error of measurement and error of indication, meter creep, hose dilation, temperature correction, linearization and gas elimination
- details of the design and applications for one (1) class of complex measuring instruments, the major instrument components and their function
- servicing licensee requirements, including:
  - quality management system
  - licence conditions
  - maintenance of statutory records
- national measurement legislation applicable to complex measuring instruments
- safe work method statements (SWMS) for trading environments relevant to job role
- NMI policy, National Instrument Test Procedures and operating procedures for equipment, and reference standards used in job role, including:
  - 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 instrument under test
  - safety principles and procedures relevant to instrument
  - organisational policy and procedures for verifying a complex measuring instrument, including completion of test results, verification documents and statutory records

- 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:
  - *MSMTMREF301 Use and maintain reference standards*
- Holistic assessment methods include:
  - review of test results, verification documentation and verifier statutory records completed by the candidate
  - feedback from supervisors and peers regarding the candidate's ability to verify the performance of a complex measuring instrument in accordance with legislative and organisational procedures
  - questions to assess understanding of relevant verification procedures, servicing licensee requirements, trader obligations and remedial actions
  - review of candidate's responses to verification scenarios, such as potential/actual non-compliances of traders and verifiers, appropriate actions, common issues and problems
  - observation of the candidate verifying a complex measuring instrument.
- 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, intermediate National Instrument Test Procedures for verifying complex measuring instruments 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; and correction tables for volume, density and pressure for a range of liquids
  - complex measuring instrument, 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.

## Links

Companion Volume implementation guides are found in VETNet -

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