



Australian Government

MSL905004 Perform non-standard calibrations

Release: 1

MSL905004 Perform non-standard calibrations

Modification History

Release	Comments
Release 1	This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>. Supersedes and equivalent to MSL905001 Perform non-standard calibrations. Foundation skills information added. Range of conditions removed. Assessment requirements amended. Equivalent outcome.

Application

This unit of competency describes the skills and knowledge to recognise non-conforming calibration work, research and select the most appropriate test method or calibration procedure for a given measurement request, and then conduct the calibration. It also covers the ability to modify and revise existing procedures or substitute alternative instruments and measurement standards, when necessary.

This unit applies to calibration technicians/specialists who carry out calibrations in first, second and third party laboratories, and laboratories where testing and/or calibration forms part of inspection or product certification. They work with limited guidance and results of their work are checked by the laboratory manager, quality inspector or designated signatory.

The unit requires personnel to use a wide variety of precision measuring equipment and standards and cope with deviations from the explicit procedural instructions detailed in standard procedures and work instructions. When deviations do occur, each case must be documented, technically justified, authorised and accepted by the client.

No licensing or certification requirements exist at the time of publication. However, regulations and/or external accreditation requirements for laboratory operations exist, so local requirements should be checked. Relevant legislation, industry standards and codes of practice within Australia must also be applied.

Pre-requisite Unit

MSL904002 Perform standard calibrations

Competency Field

Calibration

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 | Select the appropriate calibration procedure | <div>1.1 Identify non-conforming calibration tasks and requests and analyse their significance</div> <div>1.2 Review the authorised procedure and establish whether it is appropriate for the test, as required</div> <div>1.3 Research an alternative or adapt an existing procedure to satisfy the test specification requirements</div> <div>1.4 Confirm that available resources meet all the requirements of the calibration procedure</div> <div>1.5 Obtain authorisation prior to substituting equipment, changing or deviating from the specified procedure</div> <div>1.6 Document and validate any authorised changes or deviations in accordance with workplace procedures</div> |
| 2 | Prepare items for calibration | <div>2.1 Identify hazards and use the appropriate personal protective equipment (PPE), safety equipment and procedures</div> <div>2.2 Assemble and set up reference standards and associated equipment prior to testing</div> <div>2.3 Verify performance of reference standards and measuring equipment prior to use and adjust or calibrate as necessary</div> <div>2.4 Identify and minimise potential sources of measurement error</div> |
| 3 | Perform calibration | <div>3.1 Perform individual tests and document each step in the calibration procedure to ensure repeatability of measurement</div> <div>3.2 Critically analyse readings to confirm they are the result of a valid measurement and record data as required (as-found or before adjustment)</div> <div>3.3 Adjust device under test to bring readings within</div> |

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	tolerance and record results (as-left or after adjustment) if required
	3.4 Analyse resulting test data to detect trends or inconsistencies that would significantly affect the accuracy or validity of test results
	3.5 Seek appropriate advice when result interpretation is outside authorised scope of approval
4 Document results	4.1 Document compliance/non-compliance with requirements of test and/or specifications
	4.2 Estimate and document uncertainty of measurement in accordance with workplace procedures
	4.3 Record the results of each test/calibration accurately, unambiguously and objectively
	4.4 Ensure confidentiality of workplace information in accordance with workplace procedures
5 Finalise calibration	5.1 Prepare and issue a final report for the job/item detailing testing carried out, statement of compliance and all other required information
	5.2 Report any non-compliance and verify next course of action with supervisor
	5.3 Attach calibration labels, equipment stickers, quality control tags and tamper resistant seals as required in workplace procedures
	5.4 Report all changes and deviations that may have a significant influence on the test
	5.5 Store test equipment/measurement standards and results in accordance with workplace procedures

Foundation Skills

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

- Oral communication skills to explain complex calibration procedures and clarify requirements and deviations
- Numeracy skills to:
 - use calculation procedures to give results in appropriate accuracy, precision and units
 - use methods for statistical analysis (means, ranges and standard deviations) and estimation of uncertainty of measurement (can use software).

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Equivalent to MSL905001 Perform non-standard calibrations, Release 1.

Links

MSL Laboratory Operations Companion Volume Implementation Guide is available from VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

Assessment Requirements for MSL905004 Perform non-standard calibrations

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- safely and accurately performed non-standard calibrations of test and measurement equipment in accordance with workplace procedures on at least two separate occasions.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- procedures, and implications, for changing or deviating from standard calibration methods and procedures
- structure and terminology used in standard calibration methods, procedures, requests and instructions
- Australian and international standards accuracy of measurement methods and results, expression of uncertainty (GUM), quantifying uncertainty in analytical measurement, quality assurance of measurement equipment
- registration/licensing and/or National Association of Testing Authorities (NATA) accreditation requirements
- test methods, calibration procedures and new technology published by international, national or regional standards, reputable technical organisations, scientific texts or journals and equipment manufacturers and the hierarchy of these reference materials
- common test equipment
- legal, ethical and workplace requirements specific to the work task
- fields where testing and calibration are conducted
- legal, ethical and work health and safety (WHS) requirements specific to the work task.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - specialised calibration/test equipment, reference standards and materials and laboratory facilities
 - procedures and equipment specifications
 - workplace quality manual and procedures.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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