



Australian Government

MEM15001 Perform basic statistical quality control

Release: 1

MEM15001 Perform basic statistical quality control

Modification History

Release 1. Supersedes and is equivalent to MEM15001B Perform basic statistical quality control

Application

This unit of competency defines the skills and knowledge required to take samples and apply a statistical process to monitor production and applies to the collation and interpretation of statistical data in the context of statistical quality control.

When the production and interpretation of charts and graphs not dependent on knowledge and understanding of the implications for quality are required unit MEM12024 Perform computations should be selected.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Quality

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times

Elements describe the essential outcomes.

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

		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, plans, job sheets or work instructions
2	Take samples	2.1	Interpret the difference between populations and apply various sampling schemes in accordance with SOPs
3	Apply statistical process to monitor production	3.1	Interpret the concept of variation in terms of average and spread and use data to produce relevant statistical information
		3.2	Interpret data and present information to appropriate authority according to SOPs

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

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.

Sampling schemes include one (1) or more of the following:

- agreed customer plans
- acceptable quality level (AQL) plans
- average outgoing quality Level (AOQL) plans
- Shainin
- Six Sigma

Relevant statistical information includes

- average
- range and process control data

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- one (1) or more of the following:**
- plotting of charts, including one or more of the following:
 - line graphs
 - run charts
 - tally charts
 - histograms
 - control charts
 - random and assignable causes

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM15001 Perform basic statistical quality control

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications, plans, charts, lists and other applicable reference documents
- applying statistical process control procedures in accordance with instructions to a given production process
- applying various sampling schemes in accordance with procedures
- producing relevant statistical information, as required
- presenting collated information including uncontrolled variations to relevant authority and completing records in accordance with SOPs.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- difference between population and sample, and the concept of variation in terms of average and range, random and assignable causes
- numerical operations and statistical calculations/formulae within the scope of this unit
- statistical process control procedures the sampling procedures to be followed
- types of charts that can be produced to assist monitoring of products, including run charts, tally charts, histograms and control charts
- procedures for reporting sample data information.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing basic statistical quality control at least to the level being assessed with relevant industry knowledge and experience

- satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- 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.

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