



Australian Government

MEM15008 Perform advanced statistical quality control

Release: 1

MEM15008 Perform advanced statistical quality control

Modification History

Release 1. Supersedes and is equivalent to MEM15008B Perform advanced statistical quality control

Application

This unit of competency defines the skills and knowledge required to construct control charts and involves the understanding of statistical processes and the application of these processes to the maintenance and improvement of a quality system.

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

Band: B

Unit Weight: 2

Pre-requisite Unit

MEM12024	Perform computations
MEM12025	Use graphical techniques and perform simple statistical computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM15001	Perform basic statistical quality control
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 Determine the key product parameters to be controlled

2 Construct control charts

2.1 Complete control charts/proformas, including the determination of control limits from sample data following workplace procedures

2.2 Measure and describe population dispersion using 1, 2 and 3 sigma limits as required

2.3 Interpret control charts and apply the results to quality/improvements

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.

Product parameters include one (1) or more of the following:

- dimensions
- weights
- voltages
- temperatures
- speeds

Control charts/proformas include one (1) or more of the following:

- Shewart charts
- charts for process average
- range
- attributes

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.

Sample data includes the following:

- periodic samples drawn from a trial run of the process

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 MEM15008 Perform advanced 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
- determining the product parameters to be controlled from a given specification
- constructing control charts/proformas following workplace procedures
- interpreting control charts and applying the results to quality/improvements
- calculating the population dispersion for given data in terms of 1, 2 and 3 sigma limits.

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
- control charts and their application to quality/improvements
- statistical process control procedures
- procedures for constructing control charts and determining control limits from sample data
- population dispersion in terms of 1, 2 and 3 sigma limits.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing advanced 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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