Australian Government

MEM15007 Conduct product and/or process capability studies

Release: 1

MEM15007 Conduct product and/or process capability studies

Modification History

Release 1. Supersedes and is equivalent to MEM15007B Conduct product and/or process capability studies

Application

This unit of competency defines the skills and knowledge required to conduct process capability studies, set control limits and select sampling plans and applies to the analysis of data from a production section or processes using appropriate statistical techniques.

Where interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of manual handling is required unit MEM11011 Undertake manual handling should also be selected.

Where the selection and use of engineering measurement is required unit MEM12023 Perform engineering measurements should also be selected.

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

Band: **B**

Unit Weight: **6**

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
MEM15008	Perform advanced 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
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Consult with production or process personnel within the enterprise's total quality plan about conducting studies
2	**Conduct process capability studies**	2.1	Determine procedure for conducting capability study
		2.2	Prepare instructions for personnel conducting trial run
		2.3	Analyse data from trial run and calculate the process capability
		2.4	Estimate possible number of product defects from a particular process
		2.5	Determine optimum target mean to suit process capability data
		2.6	Prepare reports listing various options from process capability studies
		2.7	Recommend design specifications based on an analysis of data
3	**Set control limits**	3.1	Calculate control limits for sample/subgroup average, range and standard deviation
		3.2	Calculate warning limits for subgroup average, range and standard deviation
		3.3	Determine course of action resulting from out-of-control situation and document according to SOPs

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
4 **Select sampling plans**	4.1 Select appropriate sampling plan to suit production schedule and determine acceptable quality limits, taking into account specified producer and consumer risks
	4.2 Document sampling plan, including implementation strategy

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.

Procedure includes the following:	• frequency of sample and sample size
Data includes the following:	• periodic samples drawn from a trial run of the process
Process capability includes the following:	• the natural tolerance of the process which may be calculated at 3 sigma/standard deviations
Product defects include the following:	• from a consideration of 3 or 6 sigma standard deviations compared to specification requirements
Various options include one (1) or more of the following:	• adjustment of process to move average • improvements to reduce process capability • changes to reduce assignable causes
Appropriate sampling plan includes one (1) or	• plans within the adopted quality system • sample size

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more of the following:

- frequency of sample

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM15007B Conduct product and/or process capability studies

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2