



**Australian Government**

# **MEM30017 Use basic preventative maintenance techniques and tools**

**Release: 1**

# MEM30017 Use basic preventative maintenance techniques and tools

## Modification History

Release 1. Supersedes and is equivalent to MEM30017A Use basic preventative maintenance techniques and tools.

## Application

This unit of competency defines the skills and knowledge required to support the implementation of predictive or proactive preventative maintenance strategies in a manufacturing enterprise. It covers the common strategies of total productive/preventive maintenance and reliability-centred maintenance and common techniques and statistical tools.

The unit applies to engineering or related maintenance activities and is suitable for people giving technical support in manufacturing or engineering operations and those pursuing technical qualifications and careers at paraprofessional or technician level. All work is carried out under supervision.

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

## Pre-requisite Unit

Nil

## Competency Field

Engineering technician

## Elements and Performance Criteria

| Elements                                         | Performance Criteria                                                                                                                                                                                                                                                               |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i> | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                             |
| 1. Interpret organisation maintenance strategy   | 1.1 Follow standard operating procedures (SOPs) and comply with work health and safety (WHS) requirements at all times<br>1.2 Obtain objectives and details of organisation maintenance strategy<br>1.3 Confirm major techniques and tools for monitoring used in the organisation |
| 2. Use preventative maintenance techniques       | 2.1 Select techniques and tools and confirm in consultation with key stakeholders and supervisor                                                                                                                                                                                   |

| Elements                                         | Performance Criteria                                                                                                                                                                                                       |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i> | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                     |
| and tools                                        | 2.2 Identify key information and performance indicators required<br>2.3 Undertake data collection based on workplace needs                                                                                                 |
| 3. Interpret results                             | 3.1 Compare actual information and/or performance indicators with target levels set by supervisors and/or equipment manufacturers<br>3.2 Develop required adjustments in consultation with key stakeholders and supervisor |

## Foundation Skills

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

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. |                                                                                                                                                                                                                                                |
| Strategies include:                                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>total productive/preventive maintenance</li> <li>reliability centred maintenance.</li> </ul>                                                                                                            |
| Techniques and tools include:                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>root cause analysis (RCA)</li> <li>mean time between failures (MTBF)</li> <li>failure modes effects analysis (FMEA)</li> <li>condition monitoring not involving application of trade skills.</li> </ul> |

## Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM30017A Use basic preventative maintenance techniques and tools.

## 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 MEM30017 Use basic preventative maintenance techniques and tools

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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 and include:

- interpreting organisation maintenance strategy
- selecting basic preventative maintenance techniques and tools
- identifying key information and performance indicators
- using basic preventative maintenance techniques and tools on at least two occasions
- interpreting results on at least two occasions
- assisting with the implementation of predictive or proactive preventative maintenance strategies.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

## 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:

- characteristics and strengths of different types of strategies including:
  - total productive and preventive maintenance
  - reliability-centred maintenance
- characteristics and strengths of different types of techniques and tools including:
  - root cause analysis (RCA)
  - mean time between failures (MTBF)
  - failure modes effects analysis (FMEA)
  - condition monitoring not involving application of trade skills
- principles of process equipment and how to improve its reliability
- resources required and how to obtain them
- hazard and control measures associated with using basic preventative maintenance techniques and tools, including housekeeping
- safe work practices and procedures.

## Assessment Conditions

- Assessors must:
  - have vocational competency in using basic preventative maintenance techniques and tools 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 that 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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