



Australian Government

MEM09222 Interpret and maintain or restore original drawings

Release: 1

MEM09222 Interpret and maintain or restore original drawings

Modification History

Release 1. Supersedes and is equivalent to MEM09222A Interpret and maintain or restore original drawings.

Application

This unit of competency defines the skills and knowledge required to interpret and maintain or restore historical or dated drawings, blueprints or other hard copy originals. The unit is primarily suitable for those working within a drafting work environment.

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

Pre-requisite Unit

MEM30032 Produce basic engineering drawings

Competency Field

Drawing, drafting and design

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. Analyse document components	1.1 Follow standard operating procedures (SOPs) and comply with work health and safety (WHS) requirements at all times 1.2 Identify the purpose and scope of drawing and application for current work needs 1.3 Examine and interpret drawing protocols applied, symbols, version, origin and completeness of information provided, and identify and address further information needs 1.4 Examine condition of document and determine requirements for presentation, maintenance or restoration 1.5 Identify and prepare equipment required to complete work
2. Maintain or restore document	2.1 Apply treatment or preservation techniques, to restore or maintain document based on its condition 2.2 Ensure document details are updated and required storage and filing

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	conditions are prepared
3. Transfer data to computer-aided design (CAD) format	3.1 Determine and verify dimensions and notations 3.2 Select and prepare CAD software and work environment 3.3 Apply standard drawing conventions and techniques according to work requirements 3.4 Produce drawings using CAD that reflect detail provided in original drawing
4. Complete drawing task	4.1 Check and confirm dimensions, angles and proportions 4.2 Ensure drawing is presented according to organisational requirements and contains all relevant and accurate information 4.3 Issue and file drawing in accordance with SOPs 4.4 Evaluate work and identify areas for improvement 4.5 Plot or print the final drawing to a standard scale

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.

Standard drawing conventions include one or more of the following:	• use of correct sectioning technique • identification of cutting plane • accurate line types • appropriate view positions • use of correct symbols • use of correct dimensioning technique • measurement and tolerancing conventions
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	• provision of suitable number of views • use of correct scales • neat presentation.
Drawing techniques include one or more of the following:	• orthogonal projection • sheet format • dimensioning • scale drawing • sectioning.
Manual drafting equipment includes one or more of the following:	• T-square • drafting board • instruments • appropriate pens, inks, paper and pencils.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM09222A Interpret and maintain or restore original drawings.

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 MEM09222 Interpret and maintain or restore original drawings

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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:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- interpreting work and specifications and using reference material to obtain required information for drawing work
- analysing historical detail drawings and blueprints on at least two occasions to determine requirements for presentation, maintenance or restoration
- applying treatment or preservation techniques to restore or maintain document on at least two occasions, ensuring storage and filing conditions are prepared
- using manual drafting equipment appropriate to the drawing and restoration method to complete task
- reproducing the original drawings as detailed engineering drawings in electronic format using computer-aided design (CAD) tools and software on at least two occasions to Australian Standard (AS) 1100.101 Technical drawing - General principles
- applying spatial principles to achieve scale and proportion
- performing required calculations to complete drawing to specifications
- confirming drawing accurately reflects specifications and plotting or printing final drawing to a standard scale
- issuing and filing drawing in accordance with SOPs
- complying with organisational policies and procedures including quality requirements.

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:

- safe work practices and procedures
- different approaches to drawing including historical methods used, drawing conventions, construction techniques and use of drawing materials
- copyright and intellectual property issues and legislation in relation to drawing

- manual drawing equipment
- quality assurance procedures
- principles of plane geometry including geometric shapes, plane geometry and geometric construction
- drawing construction including four centre method, ordinate method, sectioning isometric shapes, dimensions, notations and line types
- requirements and purpose of the drawing to be produced
- sources of relevant information
- timeframe for completion of drawings
- persons who can confirm drawing requirements
- treatment, preservation and storage requirements for old blueprints and drawings.
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Assessment Conditions

- Assessors must:
 - have vocational competency to interpret and maintain or restore original drawings 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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