



Australian Government

MEM09203 Measure and sketch site information

Release: 1

MEM09203 Measure and sketch site information

Modification History

Release 1. Supersedes and is equivalent to MEM09203A Measure and sketch site information.

Application

This unit of competency defines the skills and knowledge required to take measurements and collect and record all relevant information from a site to direct drafting work.

This unit is suitable for those working within a computer-aided design (CAD) or drafting work environment and includes preparation of a freehand sketch that details a range of relevant information to be used in detailed drawings or design work. It also covers taking accurate measurements using a compass and straight edge and applying geometric construction methods.

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

Pre-requisite Unit

Nil

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. 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 Identify job requirements from specifications
2. Prepare for site visit	2.1 Verify and comply with work, legislative and organisational requirements relevant to conducting site visits 2.2 Confirm project brief and visit objectives

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	2.3 Arrange site visit in accordance with SOPs 2.4 Prepare measuring equipment and materials
3. Assess and record site features	3.1 Record details of a visual assessment of physical position, layout, access and location and establish site references 3.2 Record visual assessment of site structure and materials 3.3 Record visual assessment of services 3.4 Record observation of other details that may impact on project 3.5 Obtain any relevant site information or documentation
4. Take site measurements	4.1 Measure site features required by project brief 4.2 Ensure required measurements are obtained and verified with calculations 4.3 Access and use work information, technology and resources to complete work 4.4 Minimise impact of work on the environment
5. Produce sketch of site	5.1 Produce sketch to proportion 5.2 Apply correct sketching techniques and line construction to the sketch 5.3 Apply all dimensions and notations
6. Apply geometric construction methods	6.1 Sketch geometric shapes using correct construction techniques 6.2 Obtain tangent points using correct techniques 6.3 Apply line work using line types and media in accordance with standard industry drawing practice
7. Document site details	7.1 Complete isometric sketches that illustrate site details 7.2 Gather and document additional site information to inform further work 7.3 Use correct symbols and standard drawing conventions

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.

Specifications include one or more of the following:	• job sheets • work instructions.
Required materials and equipment include one or more of the following:	• measuring equipment • camera • drawing paper, pencils and eraser • compass • straight edge • chalk • string.
Calculations include one or more of the following:	• area • perimeter • volume • mass • scales and ratios (ingredients/elements and triangulation) and addition • subtraction • multiplication and division processes.
Other details include one or more of the following:	• vegetation • surrounding objects or structures • access for vehicles • any other conditions which may impact on the project.
Standard drawing conventions include:	• use of correct dimensioning technique • accurate line types Plus one or more of the following: • use of correct sectioning technique • identification of cutting plane • appropriate view positions • use of correct symbols • provision of suitable number of views

	• use of correct scales • neat presentation.
Drawing techniques include one or more of the following main points:	• orthogonal projection: • first angle projection • third angle projection • projection symbol • preferred system of projection in Australia • number of views • relationship of views • pictorial sketching: • isometric • orthogonal (cabinet and cavalier) • pictorial • sheet format: • borders and title blocks • application of projection symbol • drawing sheets and sizes • lettering styles • Australian Standards • dimensioning: • unidirectional dimensioning • aligned dimensioning • projection and dimension lines • arrow heads • dimension placement • sectioning: • types of sections • required section views • placement of views • cutting planes • labelling of cutting planes and section views.
Drawing constructions include one or more of the following:	• isometric axes • isometric angles • isometric lines • non-isometric lines • isometric circles: • four centre method • ordinate method • sectioning isometric shapes.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM09203A Measure and sketch site information.

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 MEM09203 Measure and sketch site information

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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 brief and conducting site visit in accordance with project requirements
- recording details of site features on at least two occasions, including site structure and materials, services and any other relevant site information or documentation
- taking accurate site measurements of features and making calculations to ensure all required measurements are accurate on at least two occasions
- producing sketch of site to proportion using correct sketching conventions and symbols on at least two occasions.

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 and use of personal protective equipment (PPE)
- where to find relevant legislation
- quality assurance procedures
- materials and equipment needed to produce sketches
- calculations used when measuring and sketching site information
- conventional signs and markings for plans and drawings
- principles of plane geometry including geometric shapes, plane geometry, geometric construction and line types during construction
- standard drawing conventions
- drawing techniques
- drawing constructions including isometric axes, isometric angles, isometric lines, non-isometric lines and isometric circles
- four centre method
- ordinate method including sectioning isometric shapes

- measurement techniques, equipment and tools.

Assessment Conditions

- Assessors must:
 - have vocational competency in measuring and sketching site information 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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