

Training Package	Metal and Engineering (MEM05)			HSC Requirements and Advice
Title	Interpret technical drawing			
Unit code	Competency field	Band	Unit weight	HSC Indicative Hours
MEM09002B	Drawing, drafting and design	A	4	30

Unit descriptor	This unit covers interpreting technical drawing applying to any of the full range of engineering disciplines.
Prerequisites	None
Application of the competency	Technical drawings may utilise perspective, exploded views or hidden view techniques. Drawings are provided to Australian Standard 1100 and/or Australian Standard 1102 and their equivalents from the full range of engineering disciplines. Standard symbols to Australian Standard 1100 and/or Australian Standard 1102 or equivalent are recognised in field of employment. Technical drawings may include symbol glossaries.
Related units	Where any drawing, sketch, chart, diagram is only used as the technique for communication, then this unit does not apply: see Unit MEM12023 (Perform engineering measurements) or Unit MEM16006 (Organise and communicate information).

Evidence Guide

The evidence guide specifies the evidence required to demonstrate achievement in the unit of competency as a whole. It must be read in conjunction with the unit descriptor, performance criteria, range statement and the assessment guidelines for the Metal and Engineering Training Package.

Overview of assessment requirements	Context of assessment	Interdependent assessment	Method of assessment
A person who demonstrates competency in this unit must be able to interpret technical drawings as described.	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.	This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with interpreting technical drawings or other units requiring the exercise of the skills and knowledge covered by this unit.	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning should not require language, literacy and numeracy skills beyond those required in this unit. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Evidence Guide cont/d			HSC Requirements and Advice
Consistency of performance	Required skills	Required knowledge	Key Terms and Concepts
Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.	<p>Look for evidence that confirms skills in:</p> <ul style="list-style-type: none"> checking the drawing against job requirements/related equipment in accordance with standard operating procedures confirming the drawing version as being current in accordance with standard operating procedures where appropriate, obtaining the current version of the drawing in accordance with standard operating procedures reading, interpreting information on the drawing, written job instructions, specifications, standard operating procedures, charts, lists and other applicable reference documents checking and clarifying task related information undertaking numerical operations, geometry and calculations/formulae within the scope of this unit. 	<p>Look for evidence that confirms knowledge of:</p> <ul style="list-style-type: none"> application of AS1100.101 in accordance with standard operating procedures relationship between the views contained in the drawing objects represented in the drawing units of measurement used in the preparation of the drawing dimensions of the key features of the objects depicted in the drawing understanding of the instructions contained in the drawing the actions to be undertaken in response to those instructions the materials from which the object(s) are made any symbols used in the drawing as described in range statement hazard and control measures associated with interpreting technical drawings, including housekeeping safe work practices and procedures. 	<ul style="list-style-type: none"> amendments Australian Standards checking and validating drawings components, assemblies and objects dimensions drawing conventions instructions contained in drawings interpret technical drawing material requirements safe work practices and procedures specifications standard operating procedures (SOP) symbols technical drawing title block types of technical drawings version control.

Elements	Performance criteria	Range Statement	HSC Requirements and Advice
<p>1 Select correct technical drawing</p>	<p>1.1 Drawing is checked and validated against job requirements or equipment.</p>	<p>The range statement provides information about the context in which the unit of competency is carried out. The variables [in bold] and scope [dot points] cater for different work requirements, work practices and knowledge between States, Territories and the Commonwealth, and between organisations and workplaces. The range statement relates to the unit as a whole and provides a focus for assessment. Text in italics in the performance criteria is explained here.</p> <p>The following variables may be present and <i>may include</i>, but are not limited to, the examples listed under the scope. All work is undertaken to relevant legislative requirements, where applicable.</p>	<p>Learning experiences for the HSC must address:</p> <p>An understanding of the purpose of technical drawing.</p> <p>An awareness of the use/functions of a range of technical drawings including:</p> <ul style="list-style-type: none"> • assembly • detail • sub-assembly • sectional • pictorial • exploded views. <p>Relationship between views contained in technical drawings.</p> <p>Standard operating procedures (SOP) for checking and validating drawings.</p> <p>An awareness of safe work practices and procedures for a workplace within the manufacturing, engineering and related services industries.</p> <p>Consideration of the audience when determining selection of drawing type including:</p> <ul style="list-style-type: none"> • client • engineer • trades person. <p>A basic knowledge of Australian Standards:</p> <ul style="list-style-type: none"> • AS1100 <ul style="list-style-type: none"> - AS1100.101 • AS1102. <p>A basic knowledge of drawing conventions (symbols/abbreviations/terminology) to AS1100.101 to indicate:</p> <ul style="list-style-type: none"> • version • dimensions • scale • components/assemblies or objects

Elements	Performance criteria	Range Statement	HSC Requirements and Advice
	1.2 Drawing version is checked and validated.		<ul style="list-style-type: none"> • materials • tolerance • instructions. <p>Learning experiences for the HSC must address:</p> <p>Identification of the components of the title block including:</p> <ul style="list-style-type: none"> • date/version • drawing number • site location • drawn by • client • scale • number of pages • tolerances. <p>Acknowledgement of Australian Standard AS1100 in relation to title and revision panels for drawings.</p> <p>The importance of version control.</p> <p>The importance of ensuring all amendments to specifications are current.</p> <p>SOP for confirmation of amendment status on drawings.</p>
2 <i>Interpret technical drawing</i>	2.1 Components, assemblies or objects are recognised as required.	<p>Interpret technical drawing</p> <ul style="list-style-type: none"> • AS1100.101 is an extensive work and the candidate is not required to have complete familiarity with all its contents, the application of AS1100 would usually be in line with standard operating procedures; interpretation may require guidance particularly in respect to any geometric tolerancing. 	<p>Learning experiences for the HSC must address:</p> <p>Identification of:</p> <ul style="list-style-type: none"> • objects represented in the drawing • number of objects/components contained in the drawing. <p>Learning experiences for the HSC must address:</p> <p>Appropriate units of measurement.</p> <p>Identification of:</p> <ul style="list-style-type: none"> • units of measurement used in the preparation of the
	2.2 Dimensions are identified as appropriate to field of employment.		

Elements	Performance criteria	Range Statement	HSC Requirements and Advice
			drawing <ul style="list-style-type: none"> • dimensions of key features • limits and tolerances. Importance of accurate measurements.
	2.3 Instructions are identified and followed as required.		Learning experiences for the HSC must address: Identification of: <ul style="list-style-type: none"> • instructions contained in the drawing • actions to be taken in response to these instructions • standards of work.
	2.4 Material requirements are identified as required.		Learning experiences for the HSC must address: Identification of: <ul style="list-style-type: none"> • materials and their characteristics • treatments and/or finishes.
	2.5 Symbols are recognised in the drawing as appropriate.		