



Australian Government

MEM09211 Produce drawings or models for industrial piping

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM09211A Produce drawings or models for industrial piping.

Application

This unit of competency defines the skills and knowledge required to produce detailed, orthogonal, isometric and assembly drawings or models to Australian Standard (AS) 1100.101 Technical drawing - General principles. Critical dimensions and specifications are predetermined, and drawings or models are developed with or without the use of computer-aided design (CAD) systems.

This unit is suitable for those performing drafting work within industrial air conditioning or mechanical services industries preparing drawings for the installation of piping in commercial and industrial buildings or industrial applications.

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

Pre-requisite Unit

MEM09204 Produce basic engineering detail drawings

MEM09229 Read and interpret technical 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. Determine work requirements	1.1 Follow standard operating procedures (SOPs) and comply with work health and safety (WHS) requirements at all times 1.2 Determine purpose, scope and information requirements for drawing or model 1.3 Interpret available information relevant to work requirements, and identify and address further information needs 1.4 Identify and prepare equipment required to complete work

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.5 Apply relevant codes, standards and symbols used for pipe installation drawings or models 1.6 Identify and access organisational files, templates and symbols required for work 1.7 Identify environmental implications of inefficient systems and strategies for minimising impact
2. Analyse piping system components	2.1 Interpret piping and instrumentation diagrams and specifications 2.2 Identify required pipe fittings and flanges and their application 2.3 Identify required function and application of valves and auxiliary equipment 2.4 Identify required components for piping systems
3. Produce drawings or models for installation of industrial piping systems	3.1 Apply operating principles and specifications of piping systems and equipment to drawing or model 3.2 Detail pipes, valves and auxiliary equipment 3.3 Indicate vertical and horizontal offsets and hand wheel orientation 3.4 Apply WHS and environmental factors to drawing detail 3.5 Present drawing or model according to organisational requirements 3.6 Produce process flow, piping and instrumentation diagrams (P&ID) and isometric and spool drawings 3.7 Produce orthogonal single and double-line arrangement drawings of pipe installation systems in accordance with engineer's sketches 3.8 Prepare cutting lists from the arrangement and detail drawings
4. Complete drawing or model task	4.1 Confirm drawing or model accuracy and compliance with industry standard 4.2 File drawing in accordance with SOPs

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.

Available information includes one or more of the following:	• construction documents • building and coordination information • work specifications • information for plant services equipment • industry codes, standards and regulations • design brief.
Piping systems include one or more of the following:	• petrochemical • gas • hot and cold water • wine and juice.
Piping system fittings and components include one or more of the following:	• ball • stop • gate • angle • cocks • flanges • t-pieces • elbows • plugs • caps • unions • connectors • reducers.
Piping drawings include one or more of the following:	• standard shop details for pipe spools and pipe supports • standard shop drawings for layout and vendor equipment • single line and double line orthogonal arrangement drawings • transferring information from vendor equipment drawings to detail drawings • compiling cutting lists from arrangement and detail drawings.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM09211A Produce drawings or models for industrial piping.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>