Australian Government

MEM09212 Produce detailed drawings of steel to non-steel connections

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM09212A Produce detailed drawings of steel to non-steel connections.

Application

This unit of competency defines the skills and knowledge required to produce detailed engineering drawings of steel to non-steel connections 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 working within a drafting work environment and can be applied across all engineering disciplines.

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**
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Determine drawing 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 1.3 Interpret available information relevant to project and work requirements, and identify and address further information needs 1.4 Identify and prepare equipment required to complete work 1.5 Identify and access organisational files, templates and symbols

Elements	**Performance Criteria**
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
	required for work
2. Identify features of components and connections	2.1 Identify type and features of components to be detailed and determine detailing requirements 2.2 Identify impact of component material on detailing work and determine appropriate standards and drawing symbols 2.3 Identify type and features of connections to be detailed from design information and determine detailing requirements 2.4 Identify any non-standard connections and determine detailing requirements 2.5 Determine method of general dimensioning of the connection, including datum points and geometric shapes from engineer, sketches or specifications 2.6 Determine edge and other clearances for concrete and other non-steel members or components from designer 2.7 Determine if surface finish or other information is required to be detailed 2.8 Identify materials to prevent electrolysis of dissimilar metals
3. Detail steel to non-steel connections	3.1 Identify connection types from design information 3.2 Identify reinforcement locations and avoid clashes with other connections 3.3 Avoid interference with post-tensioning cables and holding down bolts for upper floor connections 3.4 Detail steel to non-steel connections according to design information 3.5 Identify and apply relevant codes, standards and symbols used for installation drawings 3.6 Provide measures to counter electrolytic action from dissimilar materials
4. Complete drawing	4.1 Confirm final drawing includes all required specifications, symbols, dimensions, and components in accordance with SOPs and the design specification 4.2 Present and store 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.
Connection types include one or more of the following flexible or rigid connections:	• flexible connections: • angle seats • bearing pads • flexible end plates • angle cleats • web side plates • rigid connections: • fully welded end plates • bolted moment end plates • stainless steel, aluminium, timber, glass and concrete connections.
Industry standards include one or more of the following:	• National Construction Code (NCC) • Australian Standards (AS) • legislation requirements from Building Practitioner's Board • Sheet Metal and Air Conditioning Contractors National Association (SMACNA) • third-party manufacturing and installation standards • National Gas Act • organisational standards • general practices.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM09212A Produce detailed drawings of steel to non-steel connections.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2