



Australian Government

MEM09223 Interpret design specifications for structural steel detailing

Release: 1

MEM09223 Interpret design specifications for structural steel detailing

Modification History

Release 1. Supersedes and is equivalent to MSATCS301A Interpret architectural and engineering design specifications for structural steel detailing.

Application

This unit of competency defines the skills and knowledge required to interpret design-related information required for the commencement of structural steel detailing for residential, commercial, industrial or mining fabrication and construction projects. It is suitable primarily for those working within a drafting work environment with engineering and manufacturing applications.

This unit applies to the initial receiving and checking of design-related information by structural steel detailers including obtaining additional information or clarifying information already received. Structural steel detailers must obtain and interpret design-related information from architects and consulting engineers to carry out structural steel detailing. Design information may also be provided via drawings produced by design draftspersons.

Work may be performed individually on a contracting/project basis or as part of a project team in response to combinations of paper based and digital instructions.

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

Pre-requisite Unit

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 job requirements	1.1 Follow standard operating procedures (SOPs) 1.2 Comply with work health and safety (WHS) requirements at all times 1.3 Identify job and client requirements from specifications

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. Obtain and check adequacy of design-related information for structural steel detailing purposes	2.1 Obtain and interpret general arrangement drawings including standard symbols, terms and figures used by designers 2.2 Check adequacy of arrangement information against detailer and client requirements 2.3 Check design information for any drawings or descriptions of members, connections, components or details that lie outside the scope of standard structural practice 2.4 Obtain and check information on suspended floors 2.5 Check column base layouts and schedules, if any 2.6 Obtain and check specifications for grades of steel and bolt grades 2.7 Check information on standards and other design-related specifications to be shown on detail drawings 2.8 Review work and confirm that sufficient design information is provided to enable preparation of drawings that will provide all information required for fabrication and erection
3. Obtain additional information	3.1 Submit requests for further information (RFIs) according to organisational and project procedures 3.2 Make and note adjustments to design information based on RFI responses 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.

Adequacy of arrangement	building orientation
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information refers to the information normally provided on arrangement or layout drawings provided by architects and/or consulting engineers information and includes:	• layout on a site and relationship to any other structures • primary dimensions • floor levels • beam spacing • column centres • sizes for all members (beams, trusses, columns, rafters, purlins, girts, braces or crane beams) • dimensions and layout drawing for any special features.
Client requirements include one or more of the following:	• shop detail drawings, erection diagrams and material schedules and lists • program and format for computer-aided design (CAD) files and models • downloading by the structural steel detailer of files direct to client computers and CNC machines • size and number of hard copy drawings • specification of programs and requirements for word processed documents, spreadsheets, presentations and invoices.
Suspended floors include one or more of the following:	• reinforced concrete slab • composite slab • pre-cast planks and topping • steel plate or grating • other specified material.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSATCS301A Interpret architectural and engineering design specifications for structural steel detailing.

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 MEM09223 Interpret design specifications for structural steel detailing

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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
- complying with requirements prescribed by legislation, awards, agreements and conditions of employment
- assessing design information for adequacy of information needed for structural steel detailing against client requirements on at least two occasions
- liaising with architects, engineers and design draftspersons
- assessing scope of structural steel detailing tasks and priorities on at least two occasions
- interpreting design drawings, sketches and schedules
- communicating at all levels about technical issues related to patterns and specifications.

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
- architectural and engineering design drawings including standard symbols, terms, abbreviations and sketches
- legislative and regulatory design requirements
- qualified designers
- structural steel members and connections used in structural steel construction
- adequacy of arrangement information
- client requirements
- types of suspended floors
- difference between design and detail drawing processes
- drawing office procedures
- fabrication processes and procedures.
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Assessment Conditions

- Assessors must:
 - have vocational competency in interpreting design specifications for structural steel drafting 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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