



Australian Government

Department of Education, Employment and Workplace Relations

MSATCS301A Interpret architectural and engineering design specifications for structural steel detailing

Release: 1

MSATCS301A Interpret architectural and engineering design specifications for structural steel detailing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the skills and knowledge required to interpret design related information required for the commencement of a structural steel detailing project.
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Application of the Unit

Application of the unit	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 in order to carry out structural steel detailing. The unit may apply to structural steel detailing carried out for residential, commercial, industrial or mining fabrication and construction projects. The unit assumes that knowledge of basic technical drawing conventions and procedures such as view, dimensioning, drawing layout, etc. is already held. Work is conducted according to defined procedures. Work may be conducted in small to large scale enterprises and may involve individual and team activities. This unit requires the application of skills associated with planning and organising to complete structural steel detail drawings. Communication and numeracy skills are used to refer to patterns and specifications and complete and label sketches. Self management skills are used to ensure conformance of own work to quality standards.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	<i>MEM09002B</i>	<i>Interpret technical drawing</i>

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Obtain and check adequacy of design related information for structural steel detailing purposes	1.1. General arrangement drawings are obtained and interpreted including standard symbols, terms and figures used by designers 1.2. Adequacy of arrangement information is checked against detailer and client requirements 1.3. Design information is checked for any drawings or descriptions of any members, connections, components or details that lie outside the scope of standard structural practice 1.4. Information on suspended floors is obtained and checked 1.5. Column base layouts and schedules, if any, are checked 1.6. Specifications for grades of steel and bolt grades are obtained and checked 1.7. Information on standards and other design related specifications to be shown on detail drawings is checked
2. Obtain additional information where required	2.1. Requests for further information (RFIs) are submitted according to enterprise and project procedures 2.2. Adjustments to design information are made based on RFI responses and noted according to standard drawing office procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- assess design information for adequacy of information needed for structural steel detailing
- liaise with architects and engineers
- assess scope of structural steel detailing tasks and priorities
- interpret design drawings, sketches and schedules
- work according to OHS practices of the enterprise and workplace which may include requirements prescribed by legislation, awards, agreements and conditions of employment, standard operating procedures, or oral, written or visual instructions
- communicate at all levels about technical issues related to patterns and specifications
- reading and numeracy is required to the level of interpreting workplace documents and technical information

Required knowledge

- architectural and engineering design drawings including standard symbols, terms, abbreviations and sketches
- structural steel members and connections used in structural steel construction
- the difference between design and detail drawing processes
- drawing office procedures
- fabrication processes and procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Demonstrates skills and knowledge to:

- identify and interpret architect and engineer design specifications for structural steel constructions including constructions with suspended floors
- relate design information to structural steel detailing processes including checking of adequacy of design information for the construction
- establish efficient administrative arrangements for liaison with designers including arrangements for formal requests for further information
- establish drawing and document control procedures

Context of and specific resources for assessment

Assessment may occur on the job or in an appropriately simulated environment

Resource implications for this unit include:

- access to real or appropriately simulated detailing of structural steel constructions including provision of suitable design information
- computer with suitable CAD software or manual drafting equipment and material including work areas, materials and equipment
- access to steel and component manufacturers' catalogues or websites
- access to relevant standards through either hard copy or internet access.

Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Method of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Manufacturing Training Package
- Assessment methods must confirm consistency and

EVIDENCE GUIDE

	accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • Assessment may be applied under project related conditions (real or simulated) and require evidence of process • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances • Assessment may be in conjunction with assessment of other units of competency where structural steel detailing is involved
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Legislative/regulatory requirements	All work must comply with relevant Federal and State or Territory legislative or regulatory requirements
Drawings	For the purposes of this unit drawings refers to both hard copy and software files including CAD files
Designers	Designers include architects and consulting engineers. The design information may also be provided via drawings produced by design draftspersons
Adequacy	Adequacy means that sufficient design information is provided to enable the structural steel detailer to prepare drawings that will provide all information required for fabrication and erection
Adequacy of arrangement information	Adequacy of arrangement information refers to the information normally provided on arrangement or layout drawings provided by architects and/or consulting engineers. This information includes: • building orientation • layout on a site and relationship to any other structures • primary dimensions • floor levels • beam spacing • column centres • sizes for all members, for example, beams, trusses, columns, rafters, purlins, girts, braces, crane beams • dimensions and layout drawing for any special features, for example, stairs, landings,

RANGE STATEMENT	
	fire escapes, and so on
Client requirements	Client requirements may include: • shop detail drawings, erection diagrams and material schedules and lists • program and format for 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, invoices, and so on
Suspended floors	Suspended floors may consist of reinforced concrete slab, composite slab, pre-cast planks and topping, steel plate or grating, or other specified material
Work environment	Detailing may be undertaken in a variety of work environments including commercial, home office or fabrication or construction enterprise. Work may be performed individually on a contracting/project basis or as part of a project team and in response to combinations of paper based and electronic instructions.

Unit Sector(s)

Unit sector	Structural steel detailing
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		