



Australian Government

Department of Education, Employment and Workplace Relations

MSATCS503A Incorporate structural steel detailing into fabrication and construction project management

Release: 1

MSATCS503A Incorporate structural steel detailing into fabrication and construction project management

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the skills and knowledge required to undertake structural steel detailing in a manner consistent with procedures and timelines for fabrication and construction projects. The unit requires knowledge of the roles of architects, engineers, builders and fabricators and the skill to interpret project schedules and timelines and their implications for structural steel detailing.
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Application of the Unit

Application of the unit	This unit applies to structural steel detailers who are required to liaise with architects, consulting engineers, builders and fabricators at the commencement of a project to establish structural steel detailing arrangements that are consistent with the policies, procedures and timelines of fabrication or construction projects. The unit may apply to structural steel detailing carried out for residential, commercial, industrial or mining projects. 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		

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. Demonstrate knowledge of steel construction and fabrication processes and roles	1.1. Steel construction stages of design, detailing, fabrication and erection are understood 1.2. Major codes and standards relevant to steel construction activities can be identified 1.3. Roles and responsibilities of architects, engineers, draftspersons and detailers, fabricators and builders can be explained
2. Determine client requirements for structural steel detailing	2.1. Client for structural steel detailing is determined 2.2. Contacts for architect, consulting engineer, builder and fabricator are obtained 2.3. Project timeline and schedules are obtained and delivery dates for detail drawings determined 2.4. Procedures for making requests for further information (RFIs) from designers are agreed 2.5. Requirements for attendance at team meetings and site visits are determined 2.6. Client requirements in relation to format, number and type of shop and erection drawings and other required detailing information is determined
3. Obtain design information for project	3.1. Design information is obtained from architect and consulting engineer 3.2. Design information and project schedules are used to assess the scope and complexity of detailing tasks
4. Establish structural steel detailing arrangements for project	4.1. Details of structural steel detailing team are communicated to client 4.2. Document control procedures including numbering, access, filing and revision and updating approval procedures are established according to enterprise procedures and client requirements 4.3. Steel detailing tasks and deadlines are established and checked against construction project schedules 4.4. Capabilities of proprietary CAD and steel detailing software for project is assessed and decision is made to use computer based or manual structural detailing methods

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communicate own and team capabilities
- negotiate with clients
- assess scope of structural steel detailing tasks and priorities
- use Gantt charts and other project management scheduling tools
- assess suitability of specialist software for particular steel detailing projects
- 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

- roles and responsibilities of owners, architects, engineers, fabricators, builders and structural steel detailers in construction projects
- construction and fabrication project management practices including use of Gantt charts and other scheduling tools
- difference between design and detail drawing processes
- drawing office procedures
- proprietary and non-proprietary CAD and specialist steel detailing programs

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 client and design requirements for a structural steel detailing project • establish structural steel detailing task schedule and timelines and integrate them into the broader project plan and timelines • establish efficient administrative arrangements for liaison with clients and designers • 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 steelwork constructions including provision of suitable design information • access to real or simulated fabrication and construction schedules • 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 web sites • 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
Client	The term client in this unit refers to the organisation commissioning the production of structural steel detail drawings and will normally be the fabricator of structural steel elements of a construction project. However, depending on the project the client may vary and could be the consulting engineer, or in the case of mining projects, it could be the mining company. The client may commission structural steel detail drawing from either internal or external structural steel detailers
Schedules	Schedules may include Gantt charts, contract schedules, lists of contractors, contracted suppliers and any other lists or diagrams relevant to determining the required delivery dates for structural steel detail drawings
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
Design information	Design information is the information provided to the detailer and fabricator by the architects and

RANGE STATEMENT	
	consulting engineers for a project. For some projects the design information may only be provided by an engineer. The design information will usually be in the form of design drawings or sketches but may also be via material lists and written instructions.
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		