Australian Government

MEM234041 Manage steel supply for major fabrication projects

Release: 1

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Modification History

Release 1. New unit.

Application

This unit applies to employees responsible for oversight of the supply chain for large steel items on major fabrication projects such as construction of oil refineries, power stations and ship building. The unit applies to individuals working alone or as part of a multi-disciplinary team.

The unit scope includes reviewing the design and construction schedule, developing and managing a steel storage plan, manage steel receival and storage, and manage steel stock preparation prior to use. Skills related to this unit are normally applied by interpreting design, scheduling and fabrication-related software for relevant information. The unit can apply to a prototyping stage where steel supply, storage and preparation processes are being tested and to the management of these processes during later fabrication and assembly stages.

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

Pre-requisite Unit

Nil

Competency Field

Engineering Science

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. Interpret detailed design and construction schedule for onsite steel supply requirements	1.1 Access detailed design and fabrication scheduling software and correctly identify onsite fabrication stages and/or modules 1.2 Identify type, thickness and grade of major steel items to be used for site fabrication and assembly operations 1.3 Identify schedule requirements for availability of steel items for fabrication
2. Integrate steel storage with onsite fabrication	2.1 Plan or review layout of steel stockyard and take into account available space, quantities, steel types, and standard dimensions of steel

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
and assembly	items and scheduling requirements 2.2 Ensure steel items are marked to indicate grade and schedule requirement 2.3 Inspect steel items for mill scale, and supervise removal where required 2.4 Arrange for any required protection of steel stock before stowage 2.5 Ensure steel items are stowed in an order consistent with the schedule or master plan
3. Supervise preparation of steel items for fabrication and assembly processes	3.1 Plan steel stock release schedule according to nesting strategy, fabrication, and assembly schedule requirements 3.2 Identify and allow for required steel stock preparation time 3.3 Manage steel stock storage and release during prototyping and identify any required adjustments to the stock release schedule. 3.4 Manage rolling of plate for straightening and removal of residual stress
4. Adjust steel supply for schedule progress and variations	4.1 Monitor design variations for changes to large steel item requirements 4.2 Monitor master schedule and module or stage sub-schedules for changes to steel requirements 4.3 Adjust steel stock storage and release schedule based on variations and monitoring undertaken

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.

Steel items refers to steel supplied as:	• plate • pipe • rod and bar • rolled sections.
Steel grade refers to the systems used by suppliers to indicate the properties of the steel bering supplied. Properties indicated one or more of the following:	• chemical composition • physical properties • mechanical properties • use • delivery condition.
Changes to large steel item requirements include changes to one or more of the following:	• grade • size • number of steel items • scheduled date for use • storage or fabrication use location on site.
Typical software used for large fabrication design and scheduling include one or more of the following types of generic or purpose designed software:	• computer aided design (CAD) • computer aided manufacture (CAM) • enterprise resource planning (ERP) • project management.
Nesting for large fabrication projects is the process to maximise the cutting together of steel parts from stock to minimise waste using one or more of the following strategies:	• use of specialised nesting software to coordinate required material, machine data, cutting lists and available machines • integration of nesting software with CNC and enterprise resource planning (ERP) software • supply of steel stock in a format and schedule that promotes efficient nesting.

Unit Mapping Information

No equivalent unit

Links

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