

## Job description

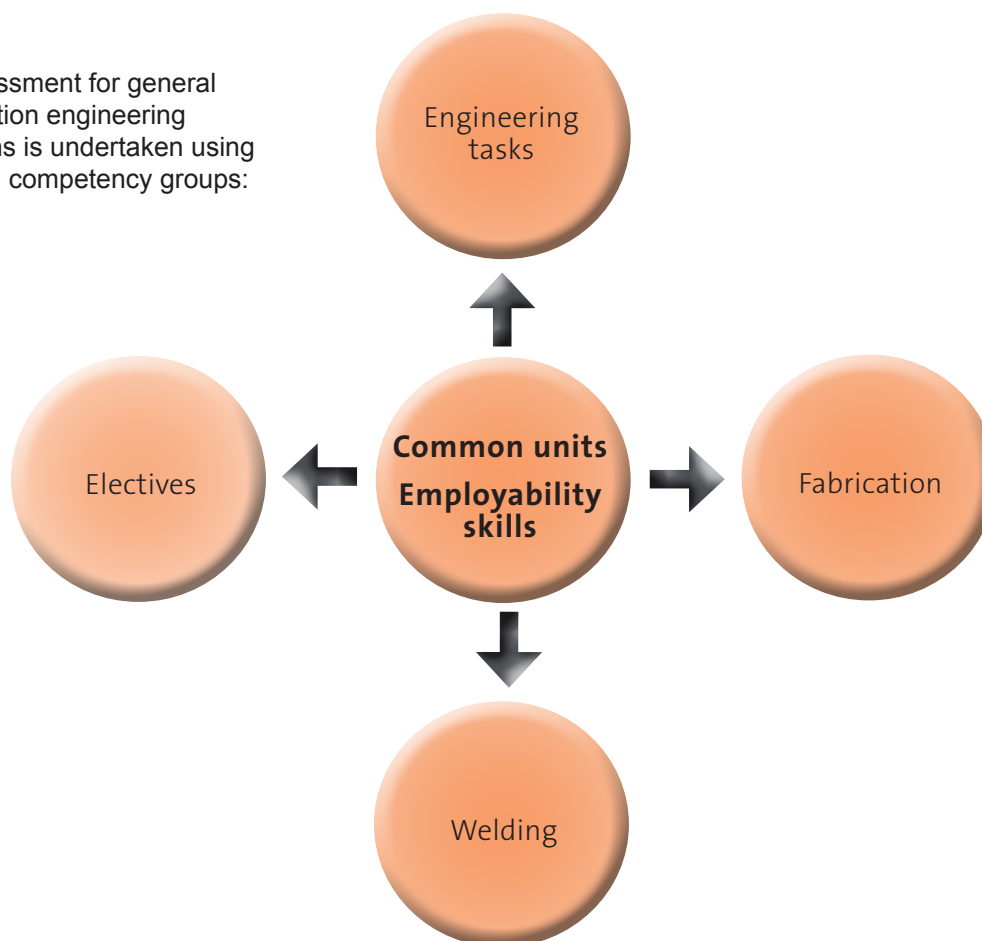
The work of a metal fabricator generally encompasses; studying blueprints, drawings and specifications to determine job requirements; selecting, cleaning and preparing metal stock; cutting marked-out metal sections and shapes using hand tools, flame cutting torches and metal cutting machines; shaping and bending metal sections and pipes using hand and machine tools, and by heating and hammering; aligning parts to be joined using hand tools and measuring instruments; joining metal sections using various welding techniques, bolting and riveting; examining welds for width of bead, penetration and precision; finishing products by cleaning, polishing, filing and bathing in acidic solutions; cleaning and smoothing welds by filing, chiseling and grinding.

## Competency assessment

The VETASSESS assessment uses competency groups. These groups consist of units of competency for the Certificate III in Engineering - Fabrication Trade qualification (MEM30305). They represent groups of tasks, skills and knowledge that are used to assess an applicant's competence in an occupation and are from the Metals, Engineering and Manufacturing Training Package (MEM05).

The minimum requirement for achievement of the Australian qualification is to demonstrate competence (employment and training evidence) in all of the units of competency. Please read the **Portfolio Builder** document for more information about how to complete a competency assessment for an Australian qualification.

The assessment for general fabrication engineering tradespersons is undertaken using the following competency groups:



### Common units

Units of competency covering common skills and knowledge will be assessed with each of the competency groups. These common units relate to the workplace occupational health and safety requirements, work processes and procedures, engineering industry standards and requirements to work as a general fabrication engineering tradesperson in Australia.

### Employability skills

The assessment includes the following employability skills: teamwork; communication; problem solving; planning & organising; learning; technology; self-management; initiative & enterprise. Competency units contain employability skills that will be assessed with each competency group.

## Competency groups

The following is a breakdown of the competency groups shown in the diagram on page 1.

### Common units

The following units of competency are common in all groups for assessment purposes.

MEM13014A	Apply principles of occupational health and safety in the work environment
MEM16007A	Work with others in a manufacturing, engineering or related environment
MEM16006A	Organise and communicate information
MEM15002A	Apply quality systems
MEM15024A	Apply quality procedures
MEM17003A	Assist in the provision of on the job training

*Note: The tasks, skills, knowledge and employability required for the common units are contained in this competency group for assessment purposes.*

### Engineering tasks

Be able to perform and plan a range of engineering operations such as interpreting technical drawings, measurements, manual handling and use of tools.

MEM14004A	Plan to undertake a routine task
MEM14005A	Plan a complete activity
MEM16008A	Interact with computing technology
MEM09002B	Interpret technical drawing
MEM12023A	Perform engineering measurements
MEM12024A	Perform computations
MEM11011B	Undertake manual handling
MEM18001C	Use hand tools
MEM18002B	Use power tools/hand held operations

## Fabrication

Be able to fabricate metal (ferrous and non-ferrous) using a range of techniques.

MEM12007C	Mark off/out structural fabrications and shapes
MEM07032B	Use workshop machines for basic operations
MEM05005B	Carry out mechanical cutting
MEM05007C	Perform manual heating and thermal cutting
MEM05010B	Apply fabrication, forming and shaping techniques
MEM03003B	Perform sheet and plate assembly
MEM10001C	Erect structures
MEM18055B	Dismantle, replace and assemble engineering components
MEM05014C	Monitor quality of production welding/fabrications

## Welding

Be able to perform metal arc, gas metal arc, gas tungsten, oxy acetylene welding and/or brazing.

MEM05052A	Apply safe welding practices
MEM05051A	Select welding processes
MEM13003B	Work safely with industrial chemicals and materials
MEM05012C	Perform routine manual metal arc welding
MEM05050B	Perform routine gas metal arc welding
MEM05049B	Perform routine gas tungsten arc welding
MEM05004C	Perform routine oxy acetylene welding
MEM05006B	Perform brazing and/or silver soldering

## Elective Areas

Elective areas are comprised of units that represent the work context or environment in which a general engineering fabrication tradesperson works. They are included specifically to meet particular work organisation and skill requirements of the general engineering fabrication tradesperson qualification.

You are required to provide evidence of your skills, knowledge and experience in the following elective areas as part of the assessment process.

### Advanced fabrication

To be able to perform tasks that include; geometric development; advanced thermal cutting; assemble, modify and repair fabricated components; installing pipework.

MEM05037B	Perform geometric development
MEM05038B	Perform advanced geometric development – cylindrical/rectangular
MEM05040B	Perform advanced geometric development – transitions
MEM05039B	Perform advanced geometric development - conical
MEM05011C	Assemble fabricated components
MEM05036C	Repair/replace/modify fabrications
MEM10010B	Install pipework and pipework assemblies
MEM05009C	Perform automated thermal cutting

### Advanced metal arc welding

To be able to perform advanced manual metal arc welding.

MEM05015D	Weld using manual metal arc welding process
MEM05016C	Perform advanced welding using manual metal arc welding process

### Advanced gas metal arc welding (MIG)

To be able to perform advanced gas metal arc welding.

MEM05050B	Perform routine gas metal arc welding
MEM05018C	Perform advanced welding using gas metal arc welding process

### Advanced tungsten gas arc welding (TIG)

To be able to perform advanced tungsten gas arc welding.

MEM05049B	Perform routine gas tungsten arc welding
MEM05020C	Perform advanced welding using gas tungsten arc welding process

## Advanced oxy acetylene welding

Be able to perform advanced oxy acetylene welding.

- MEM05004C Perform routine oxy acetylene welding
- MEM05022C Perform advanced welding using oxy acetylene welding process

## Machine operation

Be able to operate and monitor machines in an engineering workshop to construct components and structures.

- MEM07001B Perform operational maintenance of machines/equipment
- MEM07024B Operate and monitor machine/process
- MEM07027B Perform advanced press operations

## Machine operation - NC/CNC (Computer Numerical Control)

Be able to operate and monitor thermal cutting machines in an engineering workshop to construct components and structures.

- MEM07028B Operate computer controlled machine / processes
- MEM07016C Set and edit computer controlled machines/processes
- MEM05054A Write basic NC/CNC programs for thermal cutting machines

## Technical drawing

Be able to develop and modify technical drawings for computer assisted drafting (CAD).

- MEM09003B Prepare basic engineering drawings (CAD)
- MEM09022A Create 2D code files using CAM systems

## Surface finishing

Be able to prepare and apply protective coating to metal surfaces.

- MEM08007B Control surface finish production and finished product quality
- MEM08009C Make up solutions
- MEM08010B Manually finish/polish materials
- MEM08011B Prepare surfaces using solvents and/or mechanical means
- MEM08012B Prepare surfaces by abrasive blasting (basic)
- MEM08013B Prepare surfaces by abrasive blasting (advanced)
- MEM08014B Apply protective coatings (basic)
- MEM08015B Apply protective coatings (advanced)

## Assessment outcome

If you successfully complete the assessment process you will receive the following:

- an **Australian Certificate III** qualification that lists the units of competency you successfully achieved.

If you are **unsuccessful** in the assessment process you will be issued:

- a **Statement of Attainment** that lists units of competency you have successfully achieved and those that were not achieved

## Licensing and industry information

A licence, registration or certification may be required for this occupation.

For further information regarding any licensing requirements refer to:

- Department of Immigration and Citizenship (DIAC) - Australian Skills Recognition Information (ASRI):  
**[www.immi.gov.au/asri](http://www.immi.gov.au/asri)**
- Mutual recognition for occupational licences in Australia:  
**[www.licencerecognition.gov.au](http://www.licencerecognition.gov.au)**

Additional industry information that may assist you can be found at:

- The myfuture website is Australia's national career information and exploration service, helping people to make career decisions, plan career pathways and manage work transitions:  
**<http://www.myfuture.edu.au>**

## Qualification information

If you would like detailed information about the units of competency that make up this qualification please refer to the National Training Information Service (NTIS) website:

**<http://www.ntis.gov.au>**