Australian Government

Department of Education, Employment and Workplace Relations

AHCINF204A Fabricate and repair metal or plastic structures

Release: 1

AHCINF204A Fabricate and repair metal or plastic structures

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the process of undertaking minor fabrication and repair of metal or plastic structures where the services of a specialist trades person is not necessary, and defines the standard required to: identify job requirements and select materials, tools and equipment; apply safe work practices including use of Personal Protective Equipment (PPE); identify and use jointing methods and safe repair/fabrication techniques; clean up after operations.

Application of the Unit

Application of the unit	This unit applies to the working autonomously and would be carried out unsupervised within enterprise guidelines.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for fabrication and/or repair	1.1. Items for repair or fabrication are identified against work plans using industry recognised techniques. 1.2. Equipment appropriate to job requirements is selected and confirmed against work plan. 1.3. Jointing/welding materials suitable to the job requirements are selected. 1.4. Potential and existing hazards in the workplace are identified and reported to the supervisor.
2. Assist with maintaining structures and facilities	2.1. Suitable personal protective equipment is selected, used and maintained according to Occupational Health and Safety (OHS) and enterprise requirements. 2.2. Equipment and structures are safely repaired or fabricated according to enterprise requirements and industry standards. 2.3. Jointing methods used in the fabrication and/or repair structures and equipment are according to enterprise requirements and industry standards.
3. Complete fabrication and repair	3.1. Materials and equipment are cleaned and stored according to manufacturer's guidelines and enterprise policy. 3.2. Work area is cleaned and maintained, and any hazardous materials removed in an environmentally responsible manner. 3.3. Completed work is detailed and recorded according to enterprise requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• safely use welding and thermal cutting equipment • demonstrate safe and environmentally responsible workplace practices • read and interpret manufacturers specifications, work and maintenance plans, and MSDS • effectively communicate information, interpret and apply task instructions, and

REQUIRED SKILLS AND KNOWLEDGE
maintain records and reports • estimate and measure dimensions, and calculate volumes • use interpersonal skills to relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities.
Required knowledge
• types of fabrication materials and their various applications • range of metals and non-metal materials that may be used in fabrication and repair • industry jointing/welding techniques and fabrication and repair methods • OHS legislative requirements • environmental codes of practice with regard to equipment operation and maintenance activities • operating principles and operating methods for equipment • various types of welders and respective functions • environmental impacts and minimisation measures.

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	The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following: • identify job requirements and select materials, tools and equipment • apply safe work practices including use of PPE • identify and use jointing methods and safe repair/fabrication techniques • clean up after operations.
Context of and specific resources for assessment	Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole.	
Fabrication may include:	• working with metal, fibreglass and plastic components in the manufacture, repair and/or installation of plant, equipment and structures.
Equipment may include:	• cutting tools • welding and thermal cutting equipment • soldering irons.
Jointing methods may include:	• silver soldering • soldering • solid rivets • pop rivets

RANGE STATEMENT	
	• folding • self tapping screws • glues • silicones.
Materials may include:	• iron and steel • copper or brass • aluminium • cast iron • high tensile steel • gun metal • plastics.
Fabrication techniques may include:	• cutting • forming • jointing • welding • brazing • soft soldering • thermal cutting • hot air welding • drilling • plastic welding and forming • brazing or welding cast iron including the use of pre-heating and controlled cooling • the use of the full range of jointing techniques • the use of masonry anchors and bolts • silver soldering of high tensile materials • gas welding or silver soldering copper piping • metal forming and wrought iron fabrication • hard facing techniques • thread cutting or tapping.
Welding techniques may include:	• manual metal arc welding (MMAW) • gas metal arc welding (MGAW) • gas tungsten arc welding (GTAW) • oxy acetylene (or fuel gas) welding (OAW).

Unit Sector(s)

Unit sector	Infrastructure

Co-requisite units

Co-requisite units		

Competency field

Competency field	