Australian Government

Department of Education, Employment and Workplace Relations

LMFGG2009B Fabricate and assemble metal frames

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit addresses the knowledge and skills required to fabricate and assemble metal frames.

Application of the Unit

Application of the unit	

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	Nil	

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify work requirements and components	1.1. Work requirements in the form of product to be fabricated, its use, specifications, components and attachments are identified from work instructions 1.2. Australian Standards relating to glass components and products associated with the process are identified 1.3. Workplace health and safety requirements for fabrication and assembly of metal frames, including personal protection needs, are observed throughout the work 1.4. Components attachments, materials and tools required for the fabrication and assembly are identified and their availability, suitability (in terms of size, quantity, finish and profile), quality and serviceability ascertained 1.5. Tools, equipment and fixing and joining devices suitable for the method of fixing are identified 1.6. The process for the fabrication and assembly of metal frames is identified
2. Prepare for fabrication and assembly	2.1. Work sequence is planned in a logical order to suit the product specifications 2.2. Tools, equipment, components, attachments and materials are selected and checked prior to use to ensure that they are appropriate for the work, serviceable and in a safe condition 2.3. Jigs identified as being required are prepared or selected and checked for suitability for purpose 2.4. Measurements are checked for accuracy, legibility and tolerance 2.5. Mating or directional marks are noted and positioned 2.6. Machines and equipment are set up in accordance with production objectives, manufacturers' instructions and workplace procedures
3. Fabricate and assemble components	3.1. Machines, tools and equipment are operated in accordance with manufacturer instructions and workplace procedures to produce components in conformance to specifications 3.2. Components are laid out and assembled using: 3.2.1. jig (if required) 3.2.2. appropriate fastenings

ELEMENT	PERFORMANCE CRITERIA
	3.2.3. appropriate tools and equipment 3.3. Frames are assembled ensuring conformity to specifications, alignment and appropriate fastening
4. Complete work	4.1. Completed frame is inspected to ensure compliance with quality standards and customer requirements 4.2. Completed frame is inspected to ensure compliance with quality standards and customer requirements 4.3. Equipment is cleaned, inspected and stored in accordance with workplace procedures, with unserviceable items tagged, faults identified and appropriate personnel are informed 4.4. Work area is cleaned and rubbish disposed of as appropriate 4.5. Workplace documentation is completed in accordance with enterprise requirements 4.6. Waste materials are removed from work area and disposed of in accordance with relevant statutory requirements and enterprise requirements 4.7. Tools, equipment and unused materials are removed and stored appropriately

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- collect, organise and understand information related to work orders, basic plans, and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with work supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities, including the preparation and layout of the work area and the obtaining of equipment and materials to avoid any back tracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to correctly complete measurements, calculate work requirements, optimise component and material sizes for economical cutting and assemble required materials
- use pre-checking and inspection techniques to plan work, avoiding re-working and wastage
- use the limited workplace technology related to the fabrication and assembly of metal frames

Required knowledge

- workflow in relation to frame production
- workplace safety system requirements related to the fabrication and assembly of metal frames
- operation of tools and equipment used in the fabrication and assembly process
- identification of equipment, processes and procedures
- relevant Australian Standards

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.	

Critical aspects of evidence	• Interpret work order/job instruction and locate and apply relevant information to fabricate and assemble metal frames
	• Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
	• Follow work instructions, operating procedures and inspection practices to:
	  • minimise the risk of injury to self and others
	  • prevent damage to goods, equipment and products
	  • maintain required production output and product quality
	• Complete work from product specification data sheets
	• Identify and select product materials
	• Fabricate frame and sash components, including:
	  • cutting
	  • tooling
	  • routing
	  • milling
	  • drilling
	  • crimping
	• Identify, select and install component hardware, including:
	  • weather seals
	  • wheels
	  • stays
	  • hinges
	  • guides
	  • locks
	• Assemble frames, including:
	  • glass
	  • gaskets
	  • tapes
	  • sealants

EVIDENCE GUIDE	
	• adhesives • fasteners • Reveal linings and flashings in accordance with AS2047, Section 6 • Label and certify frames in accordance with AS2047, Section 8 • Work effectively with others • Modify activities to cater for variations in workplace contexts and environment
Resource implications	Frame components, consumables, workplace operating procedures, personal protective equipment, an appropriate work area, tools and equipment.
Method of assessment	Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts. Assessment should be by direct observation of tasks and questioning on underpinning knowledge. Assessment may be in conjunction with assessment of other relevant units of competency.
Context of assessment	Assessment may occur on the job or in a workplace simulated facility with relevant process equipment, materials, work instructions and deadlines.

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.	
Unit context	• Work requires individuals to demonstrate discretion, judgement and problem solving skills in the set up and operation of machines and in the assembly of frames • Work is carried out in accordance with statutory requirements, environment legislation, manual handling procedures and relevant regulations and organisation insurance requirements • OHS requirements may include legislation, standards, building codes, material safety management systems and local safe operating procedures • Work may be performed in workplaces which are involved in the manufacture of frames from aluminium and/or steel
Fabrication and assembly	This includes the selection of materials, components and attachments required for a metal frame, its fabrication and assembly prior to its installation. Fabrication may include but is not limited to: • cutting • routing • milling • pressing • drilling • crimping
Tools and equipment may include:	• assembly benches • drop and up-cut saws • pneumatic • hydraulic and manual presses • frame and sash tooling • copy routers

RANGE STATEMENT	
	• end millers • crimpers • electric and pneumatic powered drills and screwdrivers • pop rivet guns • pleuws guns and general hand tools
Materials may include but are not limited to:	• aluminium alloys and steel • hardware • fasteners • plastics • sealants • tapes • vinyl • gaskets and timber reveals Glass includes annealed glass, safety glass, patterned glass, tinted, heat reflective and insulated glass units.
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulation and Australian Standard policies and practices. It may include: • gloves • safety glasses • gauntlets • safety footwear • hard hats • aprons and overalls
Information and procedures	• Workplace procedures relating to the setting and operation of machinery • Machine manufacturer specifications and operational procedures • Work instructions, including job sheets, cutting lists plans, drawings and designs • Safety standards, including personal protective equipment, OHS regulations and enterprise requirements • AS2047 Windows in Buildings

Unit Sector(s)

Unit sector	Glass and Glazing

Competency field

Competency field	

Co-requisite units

Co-requisite units		