



Australian Government

Department of Education, Employment and Workplace Relations

LMFGG3016C Fabricate and install residential windows and doors

Release: 1

LMFGG3016C Fabricate and install residential windows and doors

Modification History

Updated format, added timber and PVC to framing materials, revised Evidence Guide, Outcome equivalent.

Unit Descriptor

This unit of competency covers the skills and knowledge required to plan, fabricate and install residential windows and doors, including framing, using aluminium, steel, polyvinyl chloride (PVC) and timber materials.

Application of the Unit

This unit requires individuals to demonstrate discretion, judgement and problem solving in the fabrication and installation process of residential windows and doors. Work is generally performed individually or in a team environment, with general supervision, and may be part of a production process.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

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

1	Identify work requirements	1.1	Work requirements in the form of type of residential window or residential door to be fabricated and installed are identified from work instructions, including the identification of its pattern or plan
		1.2	Occupational health and safety (OHS) requirements for fabrication and installation of windows and doors, including personal protective equipment , are observed throughout the work
		1.3	The process for fabricating and installing windows and doors is identified
		1.4	Types and quantities of materials , including glass required, are calculated from plans or work instructions or by measuring the fixture opening in accordance with Australian Standards and industry practice
		1.5	Cutting lists are prepared from plans, work instructions or measurements of opening to suit the window or door to be installed
		1.6	Fittings, fixings and joining devices or materials are selected in accordance with specifications or type of materials to be joined or fixed and Australian Standards
		1.7	Tools and equipment appropriate to the fixing method are identified
2	Prepare for work	2.1	Work sequence is determined in a logical order to suit the job and workplace procedures
		2.2	Tools, equipment and materials are selected and checked prior to use to ensure they are appropriate for the work, serviceable and in a safe condition
		2.3	Components of the window or door and hardware are checked against specifications or job order for size, quantity, finish and profile
3	Fabricate and install window or door	3.1	Materials are measured and marked to cutting list requirements and most economical use of materials
		3.2	Materials are cut to cutting list requirements in accordance with workplace procedures or industry

- practice
- 3.3 Metal, timber or PVC components of the window or door are assembled in accordance with recognised industry standards
 - 3.4 Fittings are installed to window or door in accordance with workplace procedures or industry practice
 - 3.5 Window or door is installed in opening using appropriate fixing method in accordance with recognised industry standard
- 4 Complete work
- 4.1 Installed window or door is inspected for quality of work and repaired, re-fabricated or reinstalled, as required, in accordance with workplace procedures
 - 4.2 Material which can be reused is collected and stored
 - 4.3 Waste and scrap material is removed for disposal or recycling, as required
 - 4.4 Work area is cleaned and rubbish disposed of, as appropriate
 - 4.5 Tools, equipment and unused materials are cleaned and removed and stored appropriately
 - 4.6 Workplace documentation is completed in accordance with workplace requirements

Required Skills and Knowledge

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

Required skills include:

- collecting, organising and understanding information related to work orders, basic plans and safety procedures
- using communication skills to the level required to confirm work requirements and specifications; communicate effectively regarding work requirements with supervisors, other workers and customers; report work outcomes and problems; and relate to people from a range of social, cultural and ethnic backgrounds, and of varying physical and mental abilities
- using literacy skills to the level required to understand information related to work orders, including common industry terminology, plans and safety procedures; prepare reports; and interpret technical information and specifications
- planning and organising activities, including the preparation and layout of the work area, and the obtaining of equipment and materials to avoid any backtracking, workflow interruptions or wastage
- working with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- using mathematical ideas and techniques to correctly complete measurements, calculate work requirements, and optimise glass sizes for economical cutting and assembling of required materials
- using pre-checking and inspection techniques to plan work, and avoid re-working and wastage
- using workplace technology related to the fabrication and installation of windows and doors
- modifying activities to cater for variations in workplace contexts and environment

Required knowledge includes:

- workflow requirements in relation to the fabrication and installation of windows and doors
- characteristics of glass and framing materials used and uses of products produced
- workplace safety system requirements related to the fabrication and installation of windows and doors
- correct identification of equipment, processes and procedures
- relevant Australian Standards

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	Assessment processes and techniques must be culturally appropriate and appropriate to the language, literacy and numeracy capacity of the candidate and the work being performed.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Assessors must be satisfied that the candidate can competently and consistently:</p> <ul style="list-style-type: none"> • plan the fabrication and installation of windows and doors • interpret work order/job instruction and locate and apply relevant information to fabricate and install windows and doors • apply safe handling requirements for equipment, products and materials, including use of personal protective equipment • follow work instructions, operating procedures and inspection practices to: <ul style="list-style-type: none"> • minimise the risk of injury to self and others • prevent damage to goods, equipment and products • maintain required product quality • as a minimum: <ul style="list-style-type: none"> • measure for the installation of windows and doors • work from product specification data sheets and/or specified software programs • identify and select product materials, including selection of mullions and transoms in relation to wind loading • fabricate frame and sash components from metal, timber or PVC, including cutting, tooling, routing, milling, drilling and/or crimping • identify, select and install component hardware, including weather seals, wheels, stays, hinges, guides and/or locks • apply the WERS • select and cut glass in accordance with AS 1288:2006 Glass in buildings - Selection and installation and AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass • assemble frames, including glass, gaskets, tapes,

	<p>sealants, adhesives, fasteners, reveal linings and flashings in accordance with AS 2047:1999 Windows in buildings - Selection and installation (Section 6)</p> <ul style="list-style-type: none"> • label frames in accordance with AS 2047:1999 Windows in buildings - Selection and installation (Section 8) • install residential windows and doors • calculate cost of residential windows and doors • work effectively with others.
Context of and specific resources for assessment	<p>The application of competency is to be assessed in the workplace or realistically simulated workplace.</p> <p>Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.</p> <p>Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context.</p> <p>Assessment is to comply with relevant regulatory or Australian Standard requirements.</p> <p>The following resources should be made available:</p> <ul style="list-style-type: none"> • aluminium or steel framing material • timber framing material • PVC framing material • door or window glass • fittings and fixing/fasteners • workplace operating procedures • personal protective equipment • an appropriate work area.
Method of assessment	<p>Assessment must satisfy the endorsed Assessment Guidelines of the LMF02 Furnishing Industry Training Package.</p> <p>Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge.</p> <p>Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure correct interpretation and application.</p> <p>Assessment may be applied under project-related conditions (real or simulated) and require evidence of</p>

	<p>process.</p> <p>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.</p> <p>Assessment may be in conjunction with assessment of other units of competency.</p>
Guidance information for assessment	

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.

<i>Residential windows may include:</i>	<ul style="list-style-type: none"> • aluminium or steel sliding • timber or PVC framed • double hung • casement and awning windows • louvre windows and double glazed windows
<i>Residential doors may include:</i>	<ul style="list-style-type: none"> • aluminium or steel sliding • timber framed • hinged and bi-fold doors
<i>Tools and equipment may include:</i>	<ul style="list-style-type: none"> • assembly benches • hand, drop and up-cut saws • pneumatic equipment • hydraulic and manual presses • frame and sash tooling • copy routers • end millers • crimpers • electric and pneumatic powered drills and screwdrivers • pop rivet guns • heat guns for PVC • glue guns and general hand tools
<i>Personal protective equipment</i>	<ul style="list-style-type: none"> • that prescribed under legislation, regulations and enterprise practices and procedures, and may include:

includes:	<ul style="list-style-type: none"> • gauntlets • gloves • safety glasses • hard hats • safety footwear • aprons and overalls
<i>Materials may include:</i>	<ul style="list-style-type: none"> • aluminium alloys and steel • PVC • timber • hardware • fasteners • plastics • sealants • tapes • gaskets • timber reveals and flashings
<i>Glass may include:</i>	<ul style="list-style-type: none"> • annealed glass • safety glass • patterned glass • tinted • heat reflective and insulated glass units
<i>Workplace procedures include:</i>	<ul style="list-style-type: none"> • workplace procedures relating to the fabrication and installation of windows and doors • equipment or tool manufacturer specifications and operational procedures • work instructions, including job sheets, plans, drawings and designs • safety standards, including personal protective equipment, OHS regulations and enterprise requirements • Australian Standards: <ul style="list-style-type: none"> • AS 2047:1999 Windows in buildings - Selection and installation • AS 1288:2006 Glass in buildings - Selection and installation • AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass • AS/NZS 4666:2000 Insulating glass units • the Window Energy Rating System (WERS)
<i>Hardware may include:</i>	<ul style="list-style-type: none"> • locks • wheels • stays

	<ul style="list-style-type: none">• hinges• springs and balances and any component required for the operation of residential windows
--	-------------------------------------------------------------------------------------------------------------------------------------------------------------

Unit Sector(s)

Glass and glazing

Custom Content Section

Not applicable.