



Australian Government

MSFGG3016 Fabricate and install residential windows and doors

Release: 2

MSFGG3016 Fabricate and install residential windows and doors

Modification History

Release 2 - Update of Australian Standards codes. Statement regarding currency of Australian Standards included in Range of Conditions and Performance Evidence.

Release 1 - New unit of competency

Application

This unit of competency covers planning, fabricating and installing residential windows and doors, including framing, using aluminium, steel, unplasticised polyvinyl chloride (uPVC) and timber materials.

Licensing, legislative or certification requirements may apply to this unit and relevant state/territory and local government agencies should be consulted to determine any necessary certification or licensing for undertaking glass and glazing work. Access to construction sites requires certification of general induction training specified by the *National Code of Practice for Induction for Construction Work* (ASCC 2007).

Pre-requisite Unit

Competency Field

Unit Sector

Glass and Glazing

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
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	Work health and safety (WHS) 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 uPVC 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 re-used is collected and stored

- 4.3 Waste and scrap material are 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, including calculating the cost of glass, fittings, materials and labour

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies 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. Range is restricted to essential operating conditions and any other variables essential to the work environment.

Unit context includes:

- WHS requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods codes, and local safe operating procedures or equivalent
- work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
- work requires individuals to demonstrate some discretion, judgement and problem solving

Residential windows include:

- aluminium or steel sliding
- timber or uPVC framed
- double hung
- casement and awning windows
- louvre windows

Residential doors include:	• double glazed windows • aluminium or steel sliding • timber framed • hinged • bi-fold doors
Tools and equipment include:	• 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 uPVC • glue guns • general hand tools
Materials include:	• aluminium alloys and steel • uPVC • hardware • fasteners (screws, pop rivets and knock-downs) • plastics • sealants • tapes • gaskets • flashings • timber • timber reveals
Glass includes:	• annealed glass • safety glass • patterned glass • tinted • heat reflective • insulated glass units (IGU)
Hardware includes:	• locks • wheels • stays • hinges • springs and balances and any component required for the operation of residential windows

Personal protective equipment includes:

- that prescribed under legislation, regulation and enterprise policies and practices:
 - gauntlets
 - gloves
 - safety glasses
 - hard hats
 - safety footwear
 - aprons and overalls

Information and procedures include:

- workplace procedures relating to the use of tools and equipment and personal protective equipment
- work instructions, including job sheets, cutting lists, plans, drawings and designs
- workplace procedures relating to reporting and communication
- manufacturer specifications and operational procedures
- Australian Standards:
 - AS 2047:2014 Windows in buildings - Selection and installation; section 6 regarding construction and section 8 on labelling and certification of glass installations
 - AS 1288:2006 Glass in buildings - Selection and installation
 - AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass
 - AS/NZS 4666:2012 Insulating glass units
 - AS/NZS 4668:2000 Glossary of terms used in the glass and glazing industry

Note, wherever Australia Standards are listed they apply at the time of publication, but the most current version (including amendments) or replacement versions are to be used.

- the Window Energy Rating System (WERS)

Unit Mapping Information

Supersedes and is equivalent to LMFGG3016C Fabricate and install residential windows and doors.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFGG3016 Fabricate and install residential windows and doors

Modification History

Release 2 - Update of Australian Standards codes. Statement regarding currency of Australian Standards included in Range of Conditions and Performance Evidence.

Release 1 - New unit of competency

Performance Evidence

- Interpret work order and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
- Measure for the installation of windows and doors and plan 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 and uPVC, 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, sealants, adhesives, fasteners, reveal linings and flashings in accordance with AS 2047:2014 Windows in buildings - Selection and installation (Section 6)
- Label frames in accordance with AS 2047:2014 Windows in buildings - Selection and installation (Section 8) and AS/NZS 4668:2000 Glossary of terms used in the glass and glazing industry
 - *Note, wherever Australia Standards are listed they apply at the time of publication, but the most current version (including amendments) or replacement versions are to be used.*
- Install residential windows and doors
- Calculate cost of residential windows and doors
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements

- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Avoid backtracking, work flow interruptions or wastage
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- Work flow 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
- AS 1288:2006 Glass in buildings - Selection and installation
- AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass
- AS 2047:2014 Windows in buildings - Selection and installation (Section 6)
- AS 2047:2014 Windows in buildings - Selection and installation (Section 8)
- AS/NZS 4668:2000 Glossary of terms used in the glass and glazing industry
 - *Note, wherever Australia Standards are listed they apply at the time of publication, but the most current version (including amendments) or replacement versions are to be used.*

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.

- Access is required to aluminium or steel framing material, timber framing material, uPVC framing material, door or window glass, fittings and fixing/fasteners, workplace operating procedures, personal protective equipment, and suitable fabrication and installation locations.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>