



Australian Government

Department of Education, Employment and Workplace Relations

LMFGG3020A Use static machines for aluminium and uPVC chloride fabrication

Release: 1

LMFGG3020A Use static machines for aluminium and uPVC chloride fabrication

Modification History

New unit.

Unit Descriptor

This unit of competency covers the skills and knowledge required to use a range of machines for fabrication of aluminium and unplasticised polyvinyl chloride (uPVC) extrusions and related materials.

Application of the Unit

This unit supports the attainment of competent workplace performance in machining aluminium and uPVC materials safely and to specification using a range of static machines. It applies to job roles in the glass and glazing industry and may be performed individually or in a team environment.

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 static machines suitable for aluminium fabrication, their operation and safety requirements	<p>1.1 Types of <i>aluminium and uPVC fabrication static machines</i> are identified, including their purpose and limitations</p> <p>1.2 Applicable <i>occupational health and safety (OHS)</i>, <i>legislative</i> and <i>organisational requirements</i> relevant to operation of static machines for <i>aluminium and uPVC materials</i> fabrication are verified and complied with</p> <p>1.3 The method of operation for static machines are identified in accordance with <i>manufacturer operating instructions</i></p>
2	Prepare static machines for use	<p>2.1 Fabrication requirements are determined from drawings and specifications in a logical machining order to suit the job, following <i>workplace procedures</i></p> <p>2.2 Necessary <i>tools and equipment</i>, including <i>personal protective equipment</i>, are selected and checked prior to use to ensure that they are appropriate for the fabrication process, serviceable and in a safe condition</p> <p>2.3 Extrusions are measured and marked according to drawings and specifications</p> <p>2.4 Machines are set up for the required operating process with fences and guides locked into position in accordance with manufacturer instructions</p>
3	Operate machine	<p>3.1 Machine start-up procedure is carried out and checked</p> <p>3.2 Extrusions are handled carefully and masked, where necessary, to protect finishes from damage and fed to the machine in accordance with operating procedures</p> <p>3.3 Extrusion is set up and held in place, where applicable, for mobile machinery and moving table operations</p> <p>3.4 Machine is operated in accordance with its designed capacity, job requirements and manufacturer instructions with excess lubricant and cuttings cleaned from extrusions, tools and equipment regularly</p> <p>3.5 Machine shutdown procedure is carried out in accordance with manufacturer instructions after</p>

completion of the job and checked for safety

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| 4 | Check machine and attachments for serviceability | 4.1 | Machine is monitored to determine operation is to performance standards, and any faults rectified and/or reported for further action |
| | | 4.2 | Replacement cutters and attachments are fitted and secured in accordance with manufacturer specifications |
| 5 | Complete machining operations | 5.1 | Tools, equipment and unused materials are cleaned, removed and stored appropriately |
| | | 5.2 | Waste and scrap material are removed for disposal or recycling, as required |
| | | 5.3 | Work area is cleaned and rubbish disposed of, as appropriate |
| | | 5.4 | Workplace documentation is completed, as required, according to workplace procedures |

Required Skills and Knowledge

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

Required skills include:

- collecting, organising and understanding materials technology and information related to the machining of aluminium and uPVC
- 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
- maintaining quality records related to the machining of aluminium and uPVC
- working with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity
- identifying, anticipating and responding to faults in aluminium and uPVC static machines
- recognising and responding to circumstances outside instructions or personal competence
- planning and organising activities, including the preparation and layout of own worksite, and the obtaining and use of tools and materials to avoid any backtracking, work flow interruptions or wastage
- using mathematical ideas and techniques to correctly complete measurements, calculate area and volume, and estimate work and material requirements
- clarifying and confirming work instructions
- planning own work within the given task parameters
- accepting responsibility for given tasks
- setting, monitoring and satisfying personal work goals
- maintaining current knowledge of tools and material specifications used in machining of aluminium and uPVC
- maintaining current knowledge of aluminium and uPVC machines and their use
- seeking learning opportunities
- using the workplace technology related to machining of aluminium and uPVC

Required knowledge includes:

- state or territory OHS legislation, regulations, standards, codes of practice, organisational and site standards, requirements, and policies and procedures relevant to aluminium and uPVC machining terminology and techniques

- types of aluminium, uPVC extrusions and other materials, their characteristics, properties, uses and limitations
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution in machining of aluminium and uPVC
- storage systems and labelling
- procedures for the recording, reporting and maintenance of workplace records and information
- appropriate mathematical procedures for estimation and measurement

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"> • read and interpret work/job specifications and drawings • identify a range of aluminium and uPVC fabrication machinery detailing their uses and limitations • identify and explain the properties and limitations of aluminium and uPVC extrusions and materials • identify the likely impact of various environmental effects on machining aluminium and uPVC • machine aluminium and uPVC extrusions on a range of static machines to meet specifications • comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for machining aluminium and uPVC to meet specified outcomes • communicate effectively and work safely with others in the work area.
Context of, and specific resources for assessment	<p>The application of competency is to be assessed in the workplace or realistically simulated workplace. 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> <ul style="list-style-type: none"> • The following resources should be made available: • workplace location or simulated workplace • materials and equipment relevant to machining aluminium and uPVC • personal protective equipment • specifications and work instructions.

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 its correct interpretation and application.</p> <p>Assessment may be applied under project-related conditions (real or simulated) and require evidence of 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.

<p><i>Aluminium and uPVC fabrication static machines</i> may include:</p>	<ul style="list-style-type: none"> • mitre saw: <ul style="list-style-type: none"> • single • double • v-notch saw • router: <ul style="list-style-type: none"> • single head • triple drilling • semi-automatic • variable angle end miller • beader • crimper • digital measuring system
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	<ul style="list-style-type: none">• groover:<ul style="list-style-type: none">• transom• corner• reverse butt• drills:<ul style="list-style-type: none">• vertical• horizontal• uPVC welder• computer numeric controlled (CNC) machines (operation only)
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<p><i>OHS requirements</i> are to be in accordance with:</p>	<ul style="list-style-type: none"> • Commonwealth, state or territory legislation and regulations, organisational safety policies and procedures. Requirements may include, but are not limited to: <ul style="list-style-type: none"> • the use of personal protective equipment and clothing • fire fighting equipment • first aid equipment • hazard and risk control and elimination of hazardous materials and substances • manual handling, including lifting and carrying
<p><i>Legislative requirements</i> are to be in accordance with:</p>	<ul style="list-style-type: none"> • applicable legislation from all levels of government that affect organisational operation. Requirements may include, but are not limited to: <ul style="list-style-type: none"> • award and enterprise agreements • industrial relations • Australian Standards • confidentiality and privacy • OHS requirements • the environment • equal opportunity • anti-discrimination • relevant industry codes of practice • duty of care and heritage
<p><i>Organisational requirements</i> may include, but are not limited to:</p>	<ul style="list-style-type: none"> • legal, organisational and site guidelines, policies and procedures relating to own role and responsibility • quality assurance • procedural manuals • quality and continuous improvement processes and standards • OHS procedures • emergency and evacuation • ethical standards • recording and reporting • access and equity principles and practices • equipment use • maintenance and storage • environmental management (waste disposal, recycling and reuse guidelines)
<p><i>Aluminium and uPVC materials for fabrication</i> may include, but are</p>	<ul style="list-style-type: none"> • extruded aluminium: <ul style="list-style-type: none"> • window profile

not limited to:	<ul style="list-style-type: none"> • door profile • custom profile, and may be: <ul style="list-style-type: none"> • anodised • powder-coated • extruded uPVC: <ul style="list-style-type: none"> • window profile • door profile • custom profile
<i>Manufacturer operating instructions may include:</i>	<ul style="list-style-type: none"> • set-up procedures • start-up and shutdown procedures • location and use of safety switches • tooling requirements • capacity and throughput • tolerances • travel • speed • operating conditions • handling and feeding of materials • safe operation, including guarding on machinery
<i>Workplace procedures include:</i>	<ul style="list-style-type: none"> • workplace procedures relating to the handling and fabrication of aluminium and uPVC • work instructions, delivery dockets, job sheets and plans • workplace procedures relating to reporting and communication • safety standards, including personal protective equipment, OHS regulations and enterprise requirements • quality standards • manufacturer instructions for the use of equipment
<i>Tools and equipment may include:</i>	<ul style="list-style-type: none"> • squares • brushes • spanners • screwdrivers • hammer • clamps • packers • wedges • measuring equipment • feeler gauges
<i>Personal protective equipment</i>	<ul style="list-style-type: none"> • that prescribed under legislation, regulation and enterprise policies, and may include:

includes:	<ul style="list-style-type: none">• hearing protection (ear plugs or muffs)• gloves• safety glasses• hard hats• safety footwear• aprons and overalls
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Unit Sector(s)

Glass and glazing

Custom Content Section

Not applicable.