



**Australian Government**

# **MSFGG3020 Use static machines for aluminium and unplasticised polyvinyl chloride (uPVC) fabrication**

**Release: 1**

# MSFGG3020 Use static machines for aluminium and unplasticised polyvinyl chloride (uPVC) fabrication

## Modification History

Release 1 - New unit of competency

## Application

This unit of competency covers using a range of machines for fabrication of aluminium and uPVC extrusions and related materials.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## 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 static machines suitable for aluminium fabrication, their operation and safety requirements | 1.1                                                                                             | Types of aluminium and uPVC fabrication static machines are identified, including their purpose and limitations                                                                                           |
|                                           |                                                                                                      | 1.2                                                                                             | Applicable work health and safety (WHS), legislative and organisational requirements relevant to operation of static machines for aluminium and uPVC materials fabrication are verified and complied with |
|                                           |                                                                                                      | 1.3                                                                                             | The method of operation for static machines is identified in accordance with manufacturer operating instructions                                                                                          |
| 2                                         | Prepare static machines for use                                                                      | 2.1                                                                                             | Fabrication requirements are determined from drawings and specifications in a logical machining order to suit the job, following workplace procedures                                                     |
|                                           |                                                                                                      | 2.2                                                                                             | Necessary tools and equipment, including personal protective equipment, are selected and checked prior to use to ensure that they are appropriate for the fabrication                                     |

|   |                                                  |     |                                                                                                                                                                                                        |
|---|--------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                                  |     | process, serviceable and in a safe condition                                                                                                                                                           |
|   |                                                  | 2.3 | Extrusions are measured and marked according to drawings and specifications                                                                                                                            |
|   |                                                  | 2.4 | Machines are set up for the required operating process with fences and guides locked into position in accordance with manufacturer instructions                                                        |
| 3 | Operate machine                                  | 3.1 | Machine start-up procedure is carried out and checked                                                                                                                                                  |
|   |                                                  | 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                                           |
|   |                                                  | 3.3 | Extrusion is set up and held in place, where applicable, for mobile machinery and moving table operations                                                                                              |
|   |                                                  | 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 |
|   |                                                  | 3.5 | Machine shutdown procedure is carried out in accordance with manufacturer instructions after completion of the job and checked for safety                                                              |
| 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                                                                                                                   |

## 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.

- |                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unit context includes:</b>                                  | <ul style="list-style-type: none"><li>• WHS requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods codes, and local safe operating procedures or equivalent</li><li>• work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements</li><li>• work requires individuals to demonstrate some discretion, judgement and problem solving</li></ul>                                                            |
| <b>Aluminium and uPVC fabrication static machines include:</b> | <ul style="list-style-type: none"><li>• mitre saw:<ul style="list-style-type: none"><li>• single</li><li>• double</li><li>• v-notch saw</li></ul></li><li>• router:<ul style="list-style-type: none"><li>• single head</li><li>• triple drilling</li><li>• semi-automatic</li></ul></li><li>• variable angle end miller</li><li>• beader</li><li>• crimper</li><li>• digital measuring system</li><li>• groover:<ul style="list-style-type: none"><li>• transom</li><li>• corner</li><li>• reverse butt</li></ul></li><li>• drills:<ul style="list-style-type: none"><li>• vertical</li></ul></li></ul> |

|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                              | <ul style="list-style-type: none"><li>• horizontal</li><li>• uPVC welder</li><li>• computer numerically controlled (CNC) machines (operation only)</li></ul>                                                                                                                                                                                                                                                             |
| <b>Aluminium and uPVC materials for fabrication include:</b> | <ul style="list-style-type: none"><li>• extruded aluminium:<ul style="list-style-type: none"><li>• window profile</li><li>• door profile</li><li>• custom profile</li><li>• anodised</li><li>• powder-coated</li></ul></li><li>• extruded uPVC:<ul style="list-style-type: none"><li>• window profile</li><li>• door profile</li><li>• custom profile</li></ul></li></ul>                                                |
| <b>Manufacturer operating instructions include:</b>          | <ul style="list-style-type: none"><li>• set-up procedures</li><li>• start-up and shutdown procedures</li><li>• location and use of safety switches</li><li>• tooling requirements</li><li>• capacity and throughput</li><li>• tolerances</li><li>• travel</li><li>• speed</li><li>• operating conditions</li><li>• handling and feeding of materials</li><li>• safe operation, including guarding on machinery</li></ul> |
| <b>Tools and equipment include:</b>                          | <ul style="list-style-type: none"><li>• squares</li><li>• brushes</li><li>• spanners</li><li>• screwdrivers</li><li>• hammer</li><li>• clamps</li><li>• packers</li><li>• wedges</li><li>• measuring equipment</li><li>• feeler gauges</li></ul>                                                                                                                                                                         |
| <b>Personal protective equipment includes:</b>               | <ul style="list-style-type: none"><li>• that prescribed under legislation, regulation and enterprise policies and practices:<ul style="list-style-type: none"><li>• gauntlets</li><li>• gloves</li><li>• safety glasses</li><li>• hard hats</li></ul></li></ul>                                                                                                                                                          |

**Information and procedures include:**

- safety footwear
- aprons and overalls
- 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
- environmental management (waste disposal, recycling and re-use guidelines)

## **Unit Mapping Information**

Supersedes and is equivalent to LMFGG3020A Use static machines for aluminium and uPVC chloride fabrication.

## **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 MSFGG3020 Use static machines for aluminium and unplasticised polyvinyl chloride (uPVC) fabrication**

## **Modification History**

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
- Identify the likely impact of various environmental effects on machining aluminium and uPVC, and 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
- 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**

- State or territory WHS 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
- Relevant problem identification and resolution in machining of aluminium and uPVC
- Relevant storage systems and labelling

- Procedures for the recording, reporting and maintenance of workplace records and information
- Appropriate mathematical procedures for estimation and measurement

## 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 materials and equipment relevant to machining aluminium and uPVC, personal protective equipment, specifications and work instructions.

## Links

Companion Volume implementation guides are found in VETNet -

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